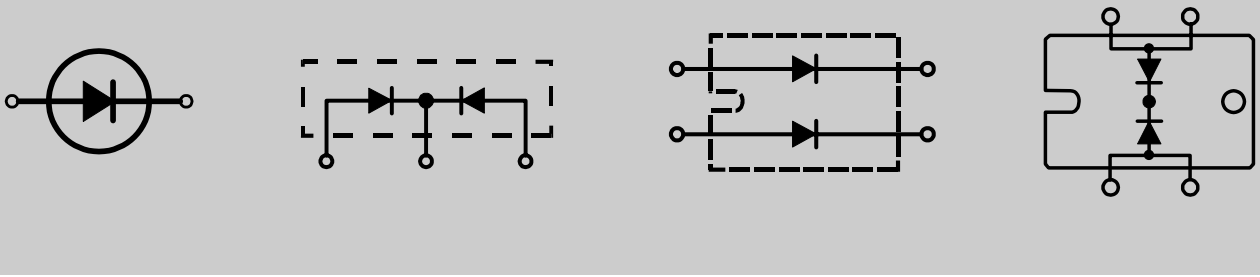
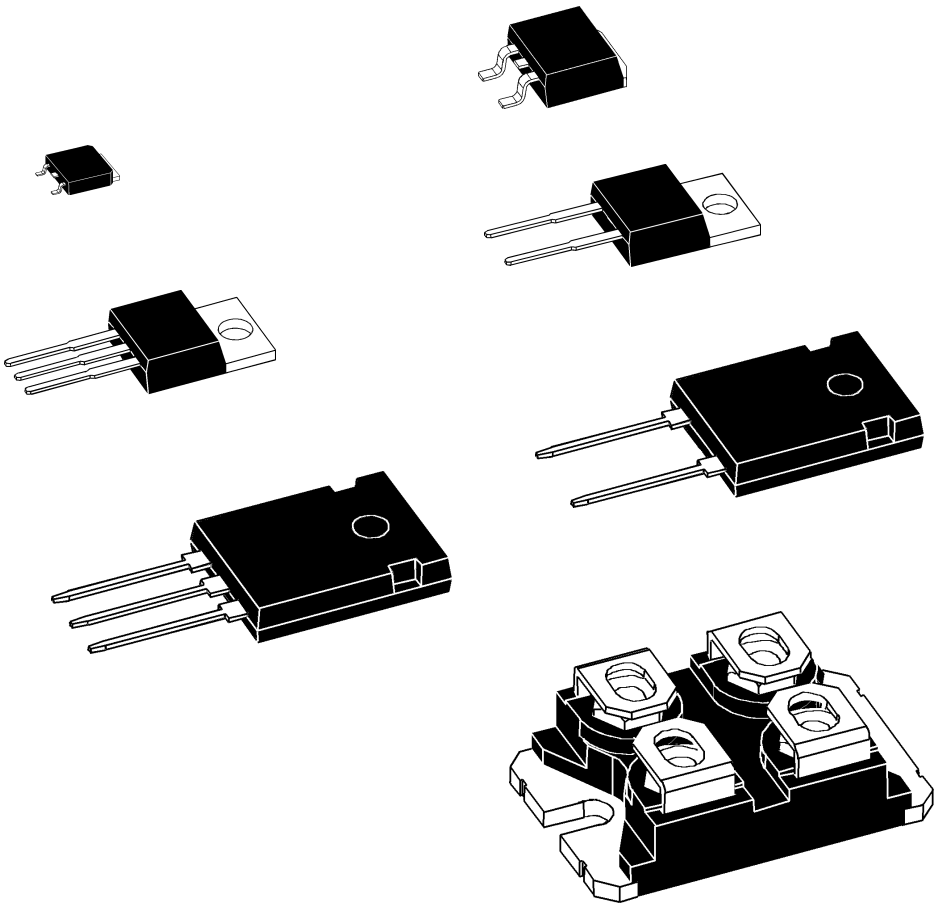
Power ***Schottky*** *Rectifier Diodes*





Contents

Contents

Note: .. S = SMD package
.. R = ISOPLUS™ (DCB isolated package)

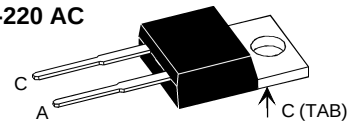
Power Schottky Rectifier

I_{FAV} = 20 A
V_{RRM} = 15 V
V_F = 0.33 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
15	15	DSS 20-0015B

TO-220 AC



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAVM}	T_C = 135°C; rectangular, d = 0.5	20	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	350	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		200	mA
V_F	I_F = 20 A; T_{VJ} = 125°C		0.33	V
	I_F = 20 A; T_{VJ} = 25°C		0.45	V
	I_F = 40 A; T_{VJ} = 125 °C		0.43	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

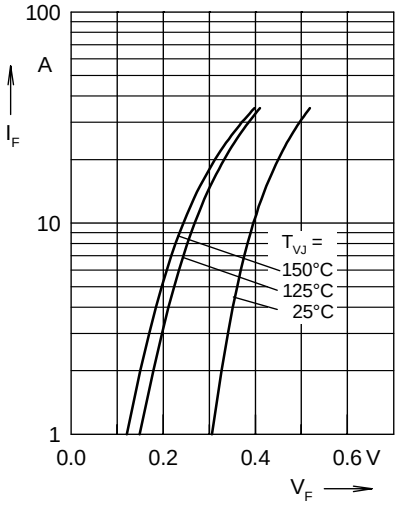


Fig. 1 Maximum forward voltage drop characteristics

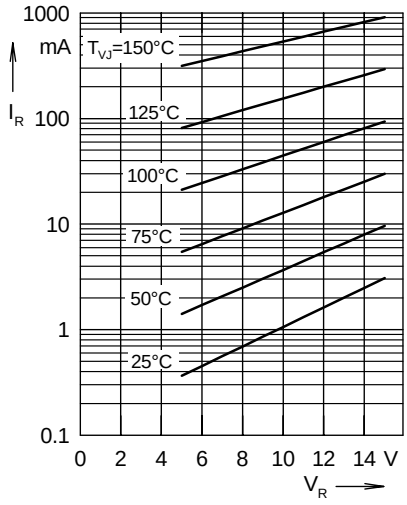


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

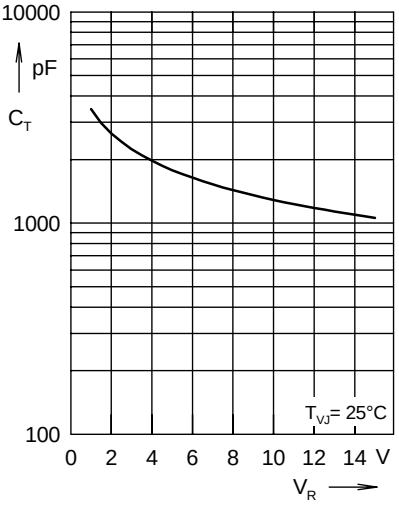


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

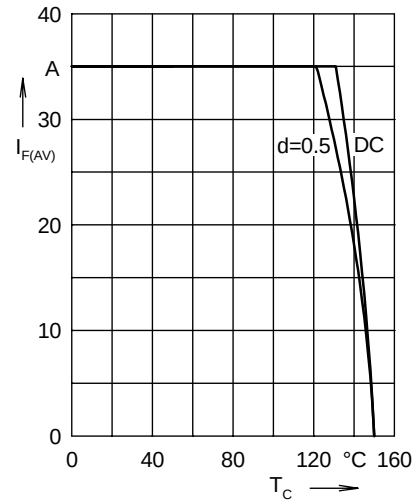


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

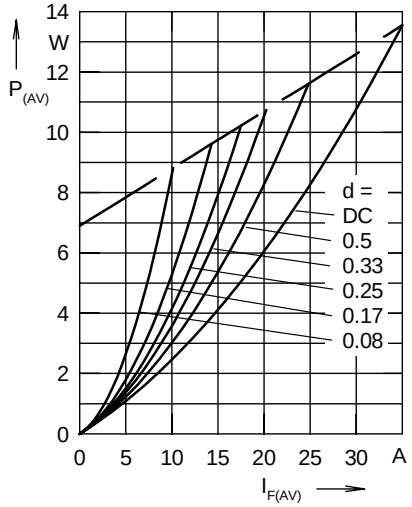


Fig. 5 Forward power loss characteristics

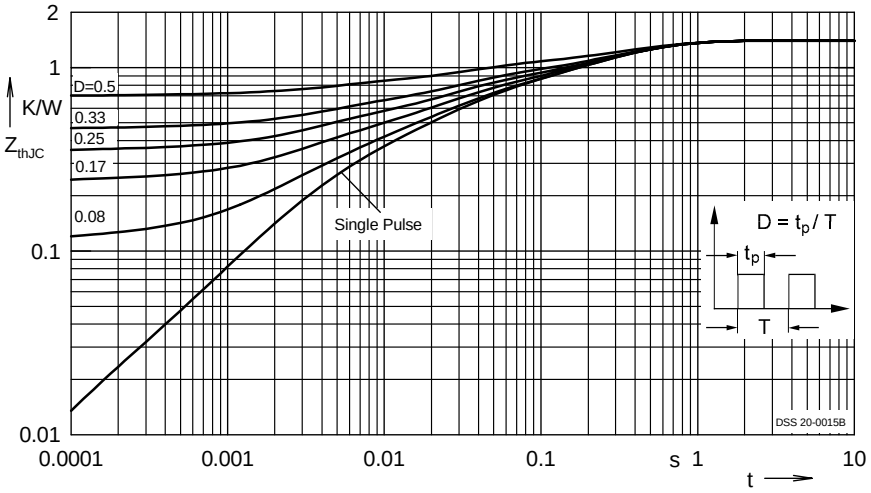


Fig. 6 Transient thermal impedance junction to case at various duty cycles

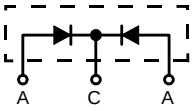
007

Power Schottky Rectifier
with common cathode

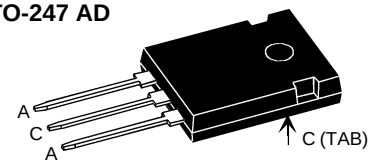
I_{FAV} = 2x20 A
V_{RRM} = 15 V
V_F = 0.32 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
15	15	DSSK 40-0015B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		50	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5	20	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5; per device	40	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	350	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		200	mA
V_F	I_F = 20 A; T_{VJ} = 125°C		0.32	V
	I_F = 20 A; T_{VJ} = 25°C		0.44	V
	I_F = 40 A; T_{VJ} = 125°C		0.41	V
R_{thJC}			1.4	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

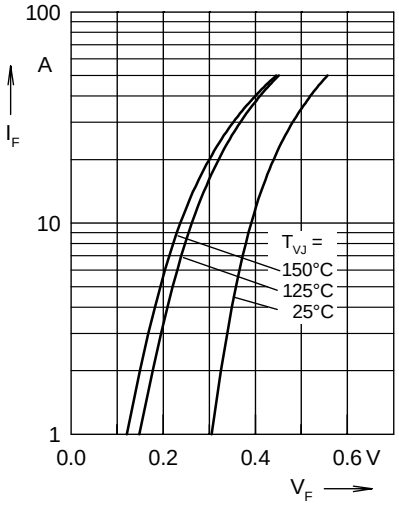


Fig. 1 Maximum forward voltage drop characteristics

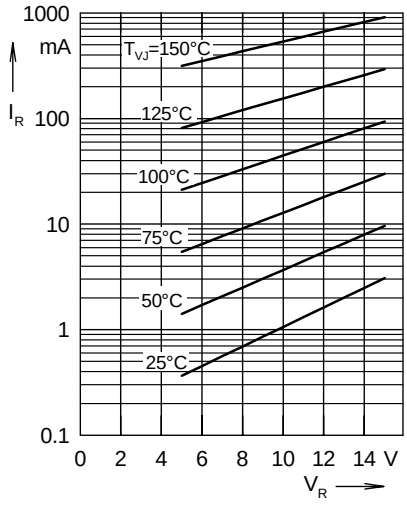


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

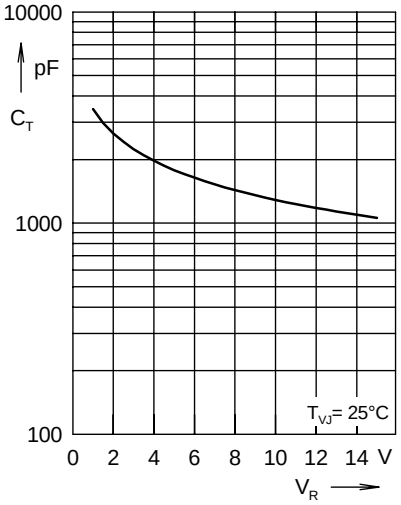


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

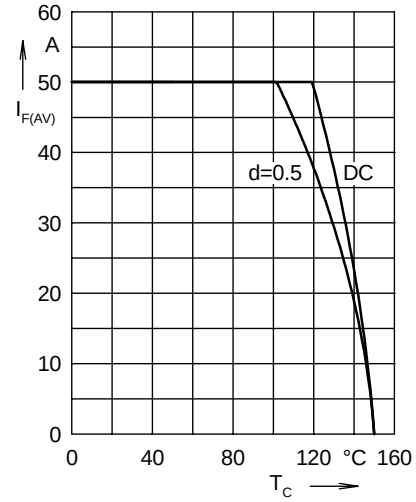


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

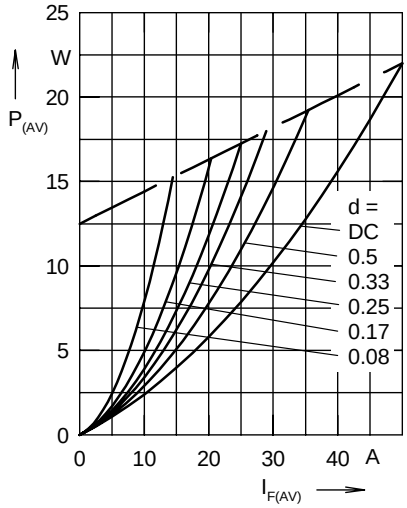


Fig. 5 Forward power loss characteristics

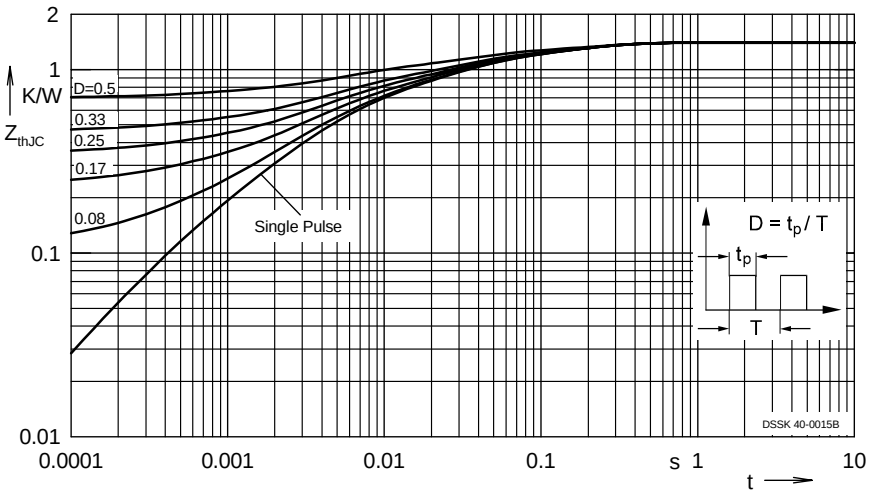


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

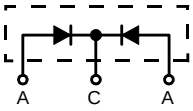
007

Power Schottky Rectifier
with common cathode

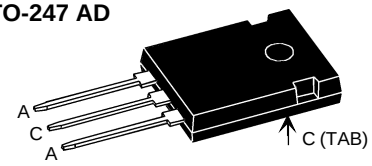
I_{FAV} = 2x35 A
V_{RRM} = 15 V
V_F = 0.33 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
15	15	DSSK 70-0015B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	35	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5; per device	70	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	660	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	115	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		20	mA
	T_{VJ} = 100°C V_R = V_{RRM}		350	mA
V_F	I_F = 35 A; T_{VJ} = 125°C		0.33	V
	I_F = 35 A; T_{VJ} = 25°C		0.45	V
	I_F = 70 A; T_{VJ} = 125°C		0.45	V
R_{thJC}			1.1	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

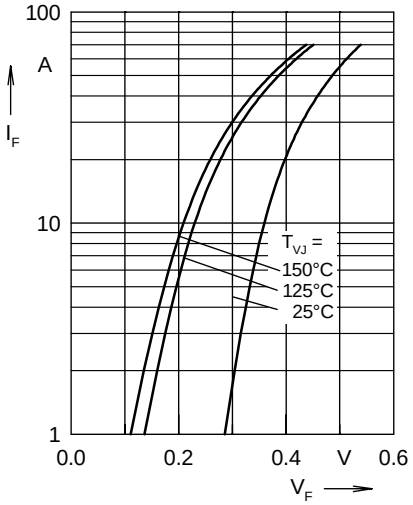


Fig. 1 Maximum forward voltage drop characteristics

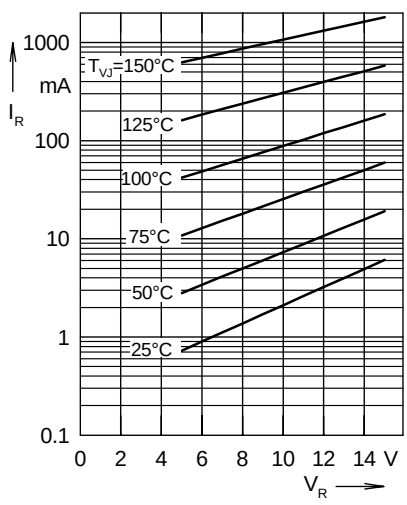


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

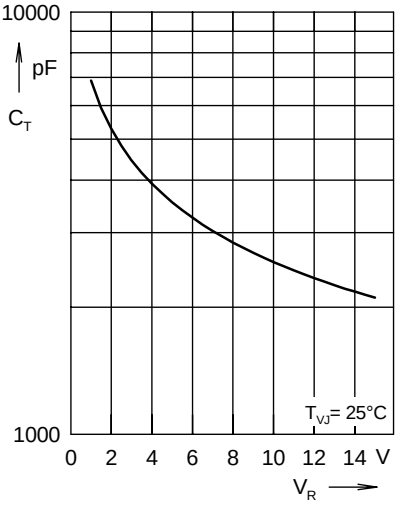


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

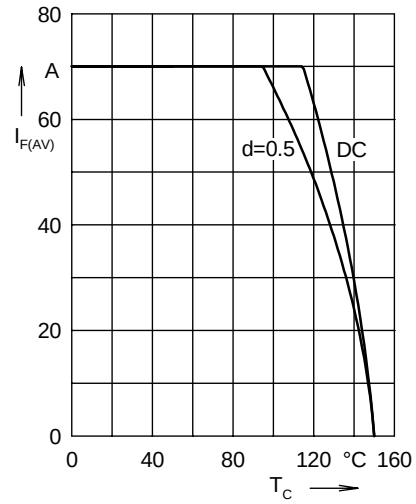


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

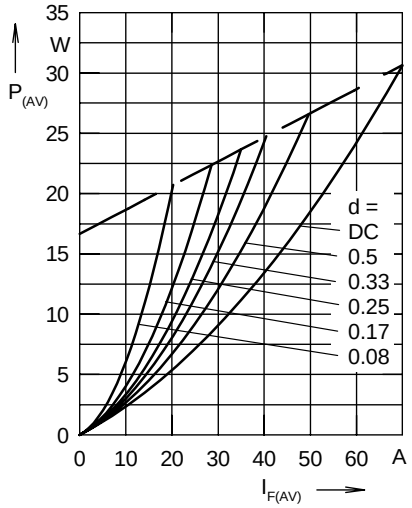


Fig. 5 Forward power loss characteristics

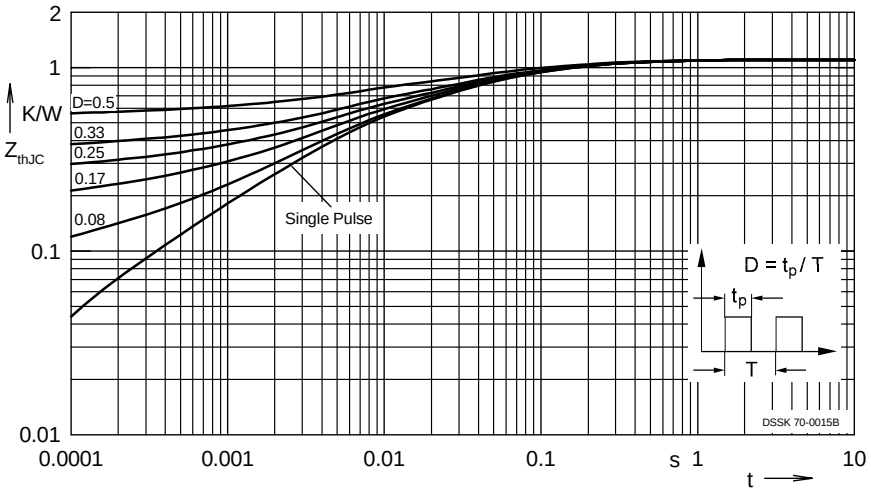


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

007

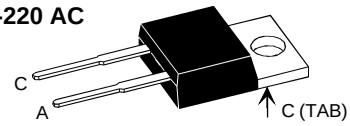
Power Schottky Rectifier

I_{FAV} = 25 A
V_{RRM} = 25 V
V_F = 0.44 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
25	25	DSS 25-0025B

TO-220 AC



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAVM}	T_C = 125°C; rectangular, d = 0.5	25	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	330	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		20	mA
	T_{VJ} = 100°C V_R = V_{RRM}		80	mA
V_F	I_F = 25 A; T_{VJ} = 125°C		0.44	V
	I_F = 25 A; T_{VJ} = 25°C		0.52	V
	I_F = 50 A; T_{VJ} = 125 °C		0.66	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

025

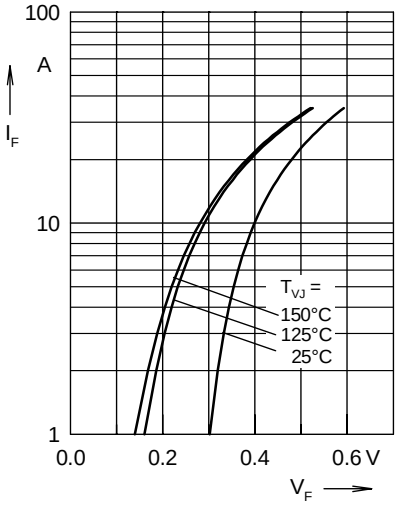


Fig. 1 Maximum forward voltage drop characteristics

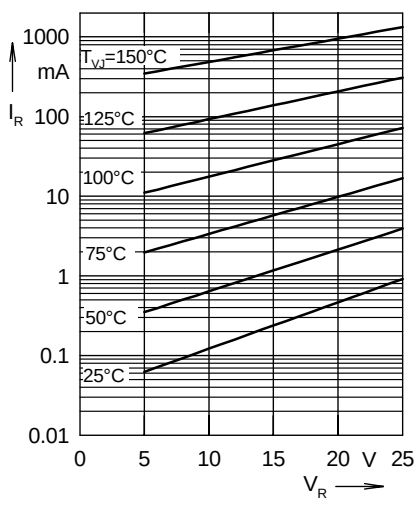


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

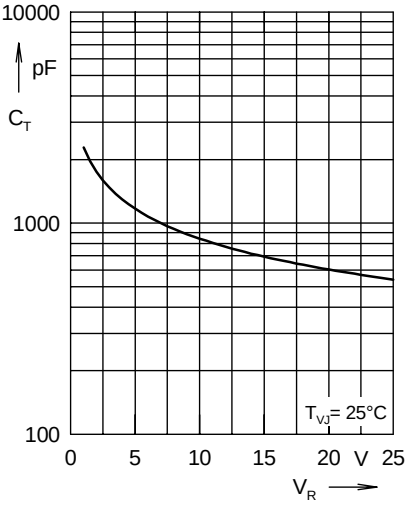


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

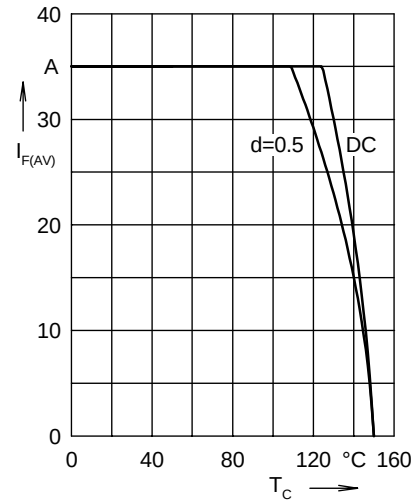


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

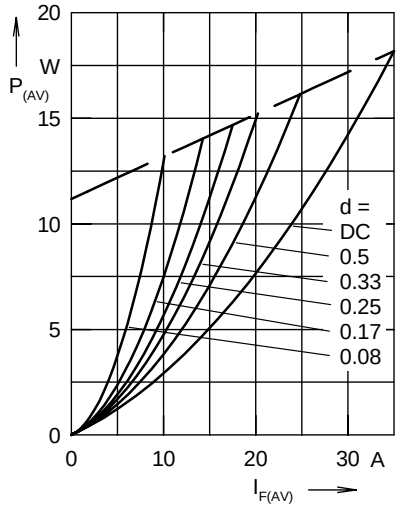


Fig. 5 Forward power loss characteristics

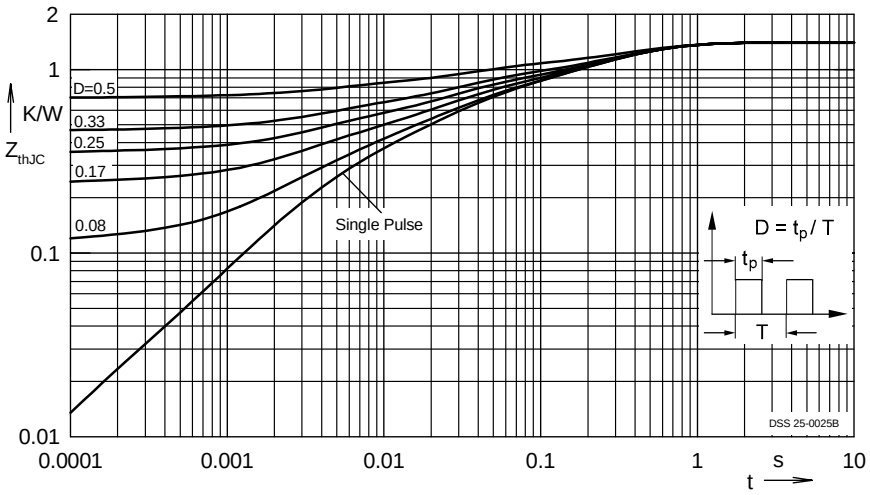


Fig. 6 Transient thermal impedance junction to case at various duty cycles

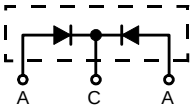
Note: All curves are per diode

Power Schottky Rectifier
with common cathode

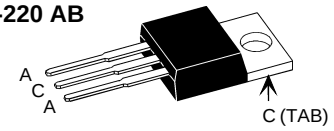
I_{FAV} = 2x25 A
V_{RRM} = 25 V
V_F = 0.35 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
25	25	DSSK 48-0025B



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	25	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5; per device	50	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	420	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		20	mA
	T_{VJ} = 100°C V_R = V_{RRM}		60	mA
V_F	I_F = 20 A; T_{VJ} = 125°C		0.35	V
	I_F = 20 A; T_{VJ} = 25°C		0.44	V
	I_F = 40 A; T_{VJ} = 125°C		0.48	V
R_{thJC}			1.2	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

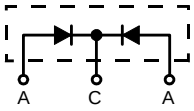
024

Power Schottky Rectifier
with common cathode

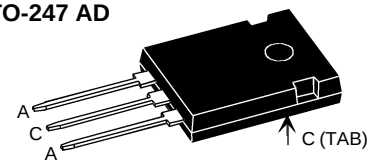
I_{FAV} = 2x25 A
V_{RRM} = 25 V
V_F = 0.42 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
25	25	DSSK 50-0025B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		50	A
I_{FAV}	T_C = 125°C; rectangular, d = 0.5	25	A
I_{FAV}	T_C = 125°C; rectangular, d = 0.5; per device	50	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	330	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		12	mA
	T_{VJ} = 100°C V_R = V_{RRM}		80	mA
V_F	I_F = 25 A; T_{VJ} = 125°C		0.42	V
	I_F = 25 A; T_{VJ} = 25°C		0.51	V
	I_F = 50 A; T_{VJ} = 125°C		0.63	V
R_{thJC}			1.4	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

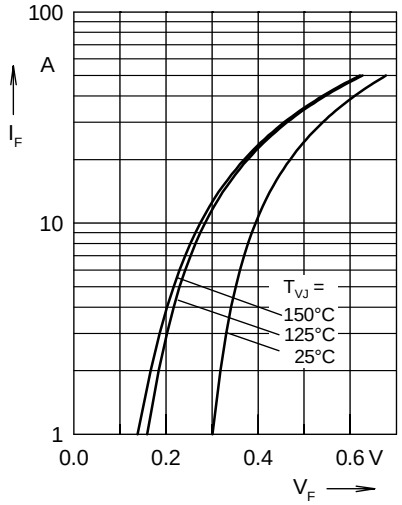


Fig. 1 Maximum forward voltage drop characteristics

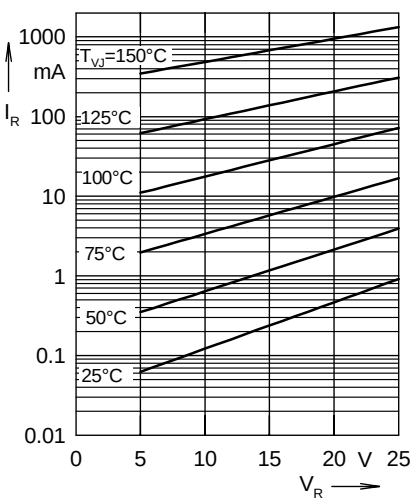


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

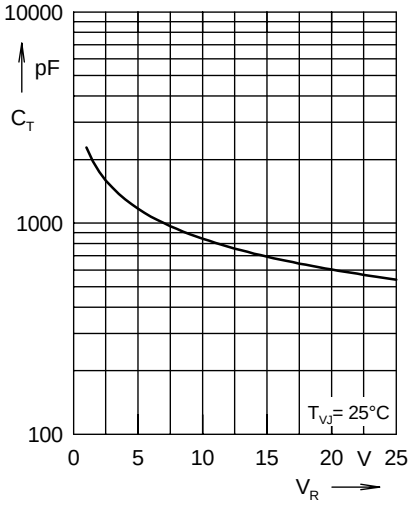


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

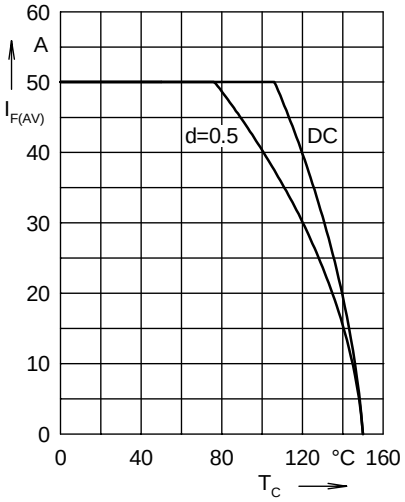


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

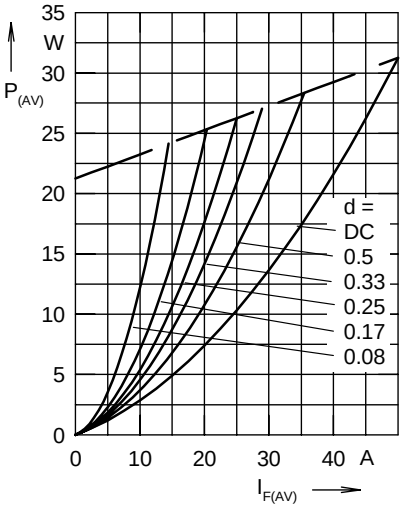


Fig. 5 Forward power loss characteristics

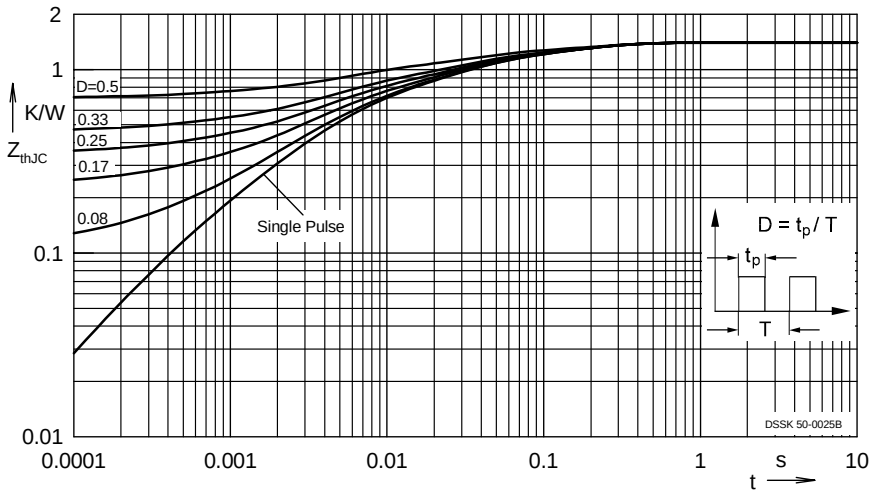


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

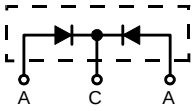
007

Power Schottky Rectifier
with common cathode

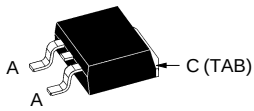
I_{FAV} = 2x25 A
V_{RRM} = 30 V
V_F = 0.35 V

Preliminary Data

V_{RSM}	V_{RRM}	Type
V	V	
30	30	DSSK 48-003BS



TO-263 AB
(BS-Type)



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	25	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5; per device	50	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	420	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
Weight	typical	2	g

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C; $V_R = V_{RRM}$		20	mA
	T_{VJ} = 100°C; $V_R = V_{RRM}$		100	mA
V_F	I_F = 20 A; T_{VJ} = 125°C		0.35	V
	I_F = 20 A; T_{VJ} = 25°C		0.44	V
	I_F = 40 A; T_{VJ} = 125°C		0.48	V
R_{thJC}			1.2	K/W
R_{thCH}	(Version B only)	0.5		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0%
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, test conditions and dimensions.

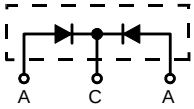
025

Power Schottky Rectifier
with common cathode

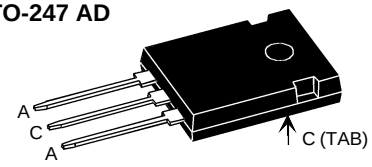
I_{FAV} = 2x40 A
V_{RRM} = 25 / 30 V
V_F = 0.39 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
25	25	DSSK 80-0025B
30	30	DSSK 80-003B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	40	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5; per device	80	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	800	A
E_{AS}	I_{AS} = 6 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	10	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	6	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		40	mA
	T_{VJ} = 100°C V_R = V_{RRM}		250	mA
V_F	I_F = 40 A; T_{VJ} = 125°C		0.39	V
	I_F = 40 A; T_{VJ} = 25°C		0.48	V
	I_F = 80 A; T_{VJ} = 125°C		0.56	V
R_{thJC}			0.8	K/W
R_{thCH}		0.25		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

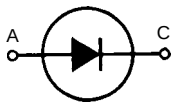
IXYS reserves the right to change limits, test conditions and dimensions.

019

Power Schottky Rectifier

I_{FAV} = 6 A
V_{RRM} = 45 V
V_F = 0.53 V

V_{RSM} V	V_{RRM} V	Type	marking on product
45	45	DSS 6-0045AS	6Y045AS



TO-252 AA

A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		20	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	6	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	80	A
E_{AS}	I_{AS} = 13 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	24	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.3	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	50	W
Weight	typical	0.3	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 125°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 6 A; T_{VJ} = 125°C		0.53	V
	I_F = 6 A; T_{VJ} = 25°C		0.64	V
	I_F = 12 A; T_{VJ} = 125 °C		0.61	V
R_{thJC}			3.0	K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

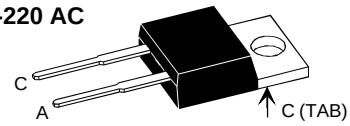
823

Power Schottky Rectifier

I_{FAV} = 10 A
V_{RRM} = 45 V
V_F = 0.58 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 10-0045A

TO-220 AC



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	10	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	140	A
E_{AS}	I_{AS} = 13 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	24	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.3	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 125°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.58	V
	I_F = 10 A; T_{VJ} = 25°C		0.68	V
	I_F = 20 A; T_{VJ} = 125 °C		0.70	V
R_{thJC}			1.7	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

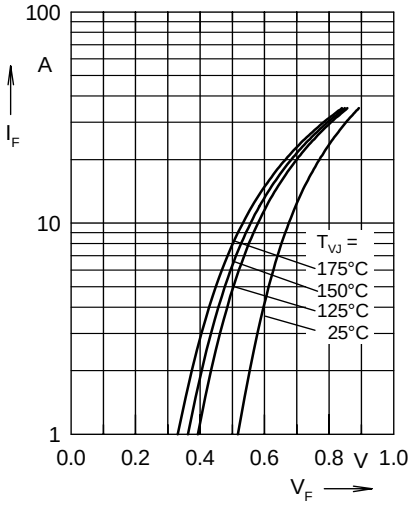


Fig. 1 Maximum forward voltage drop characteristics

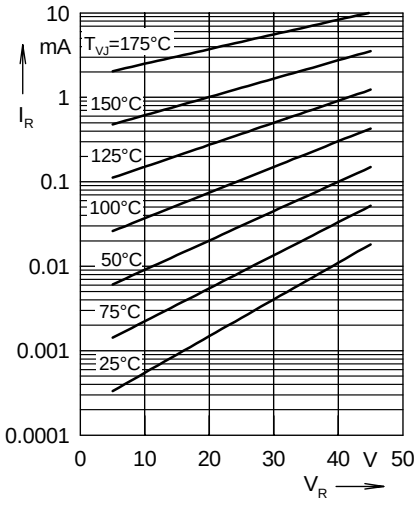


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

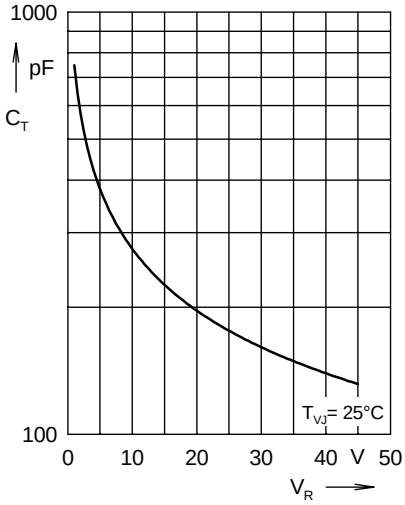


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

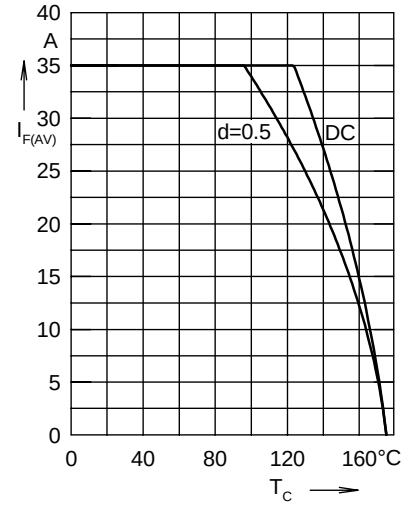


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

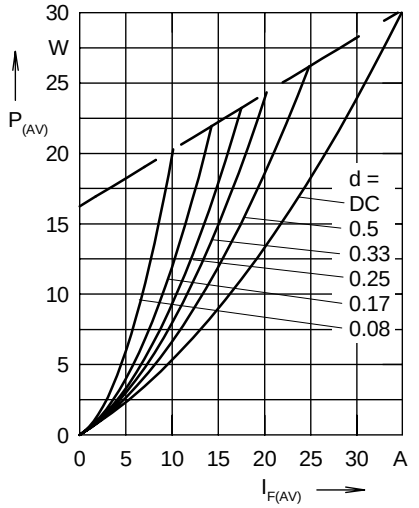


Fig. 5 Forward power loss characteristics

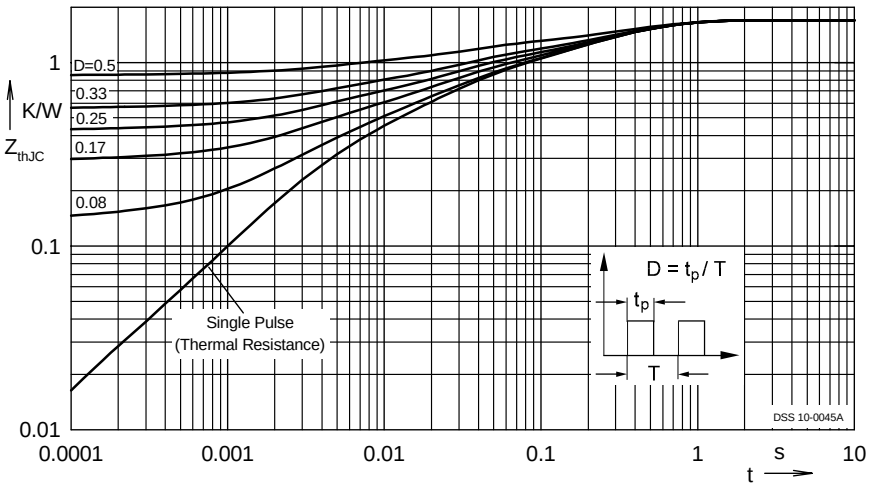


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

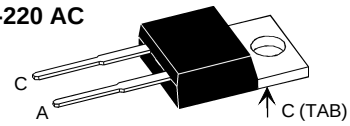
007

Power Schottky Rectifier

I_{FAV} = 10 A
V_{RRM} = 45 V
V_F = 0.40 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 10-0045B

TO-220 AC



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5	10	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	160	A
E_{AS}	I_{AS} = 13 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	24	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.3	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	75	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		5	mA
	T_{VJ} = 100°C V_R = V_{RRM}		50	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.45	V
	I_F = 10 A; T_{VJ} = 25°C		0.51	V
	I_F = 20 A; T_{VJ} = 125 °C		0.70	V
R_{thJC}			1.7	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

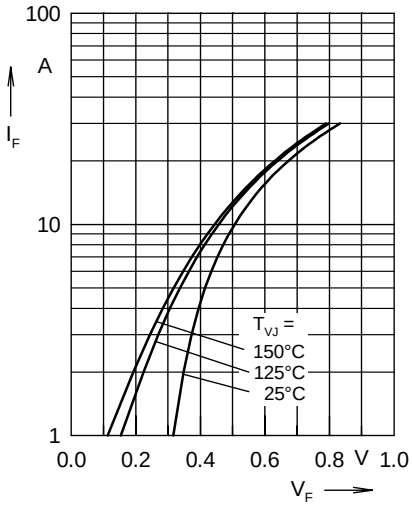


Fig. 1 Maximum forward voltage drop characteristics

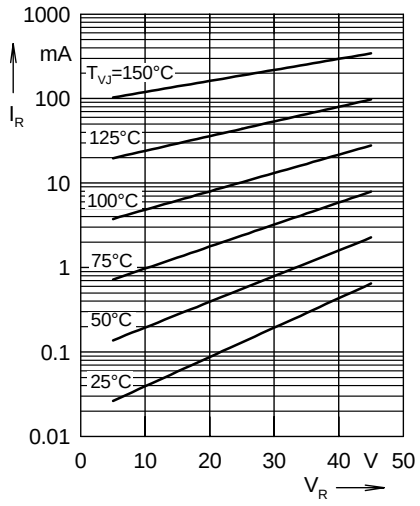


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

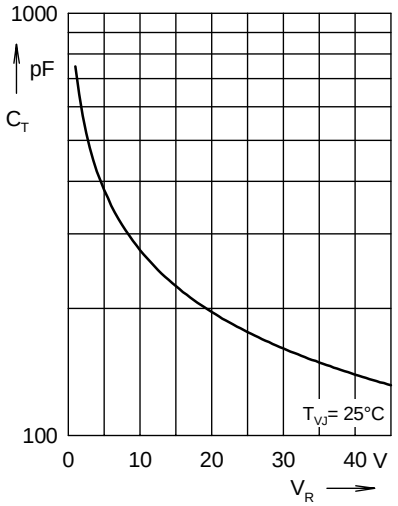


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

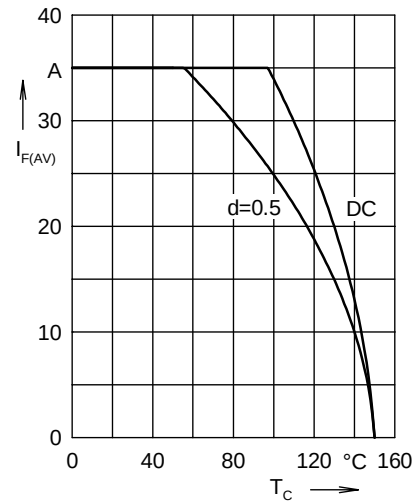


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

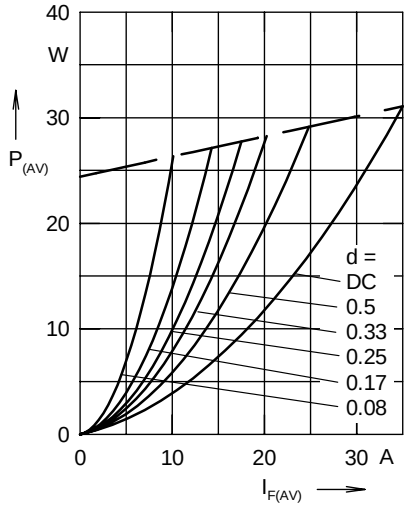


Fig. 5 Forward power loss characteristics

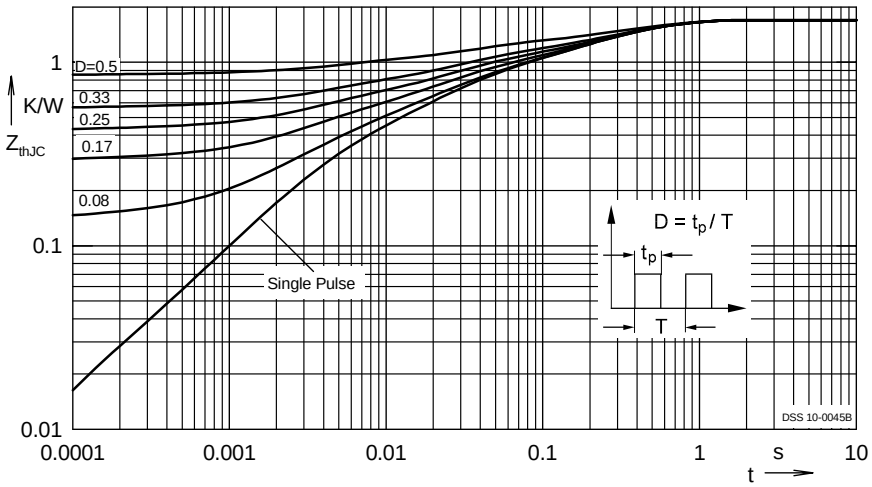


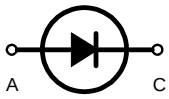
Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

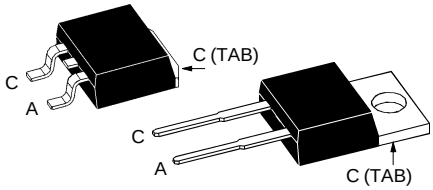
Power Schottky Rectifier

I_{FAV} = 16 A
V_{RRM} = 45 V
V_F = 0.57 V

V_{RSM} V	V_{RRM} V	Type	
45	45	DSS 16-0045A	DSS 16-0045AS



TO-263 AB (AS-Type)
TO-220 AC (A-Type)



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	16	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	280	A
E_{AS}	I_{AS} = 15 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	32	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.5	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.57	V
	I_F = 15 A; T_{VJ} = 25°C		0.67	V
	I_F = 30 A; T_{VJ} = 125 °C		0.69	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

824

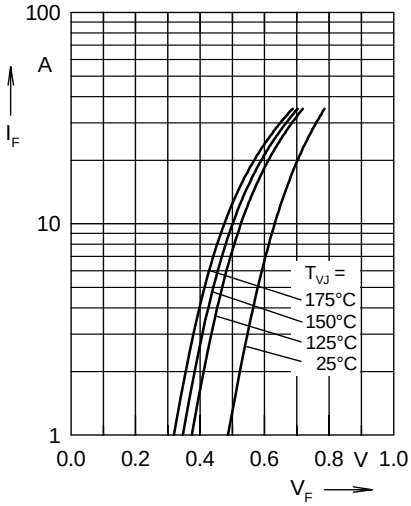


Fig. 1 Maximum forward voltage drop characteristics

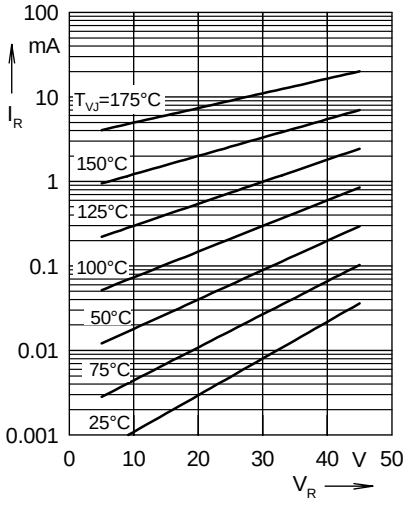


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

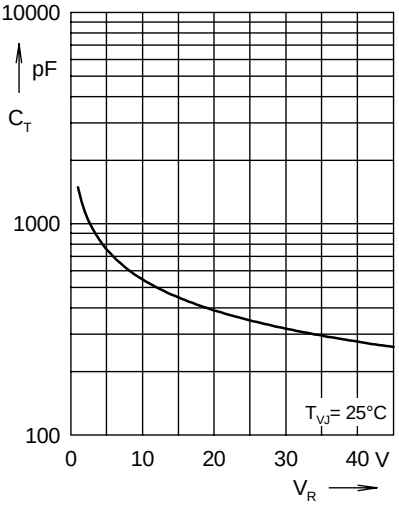


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

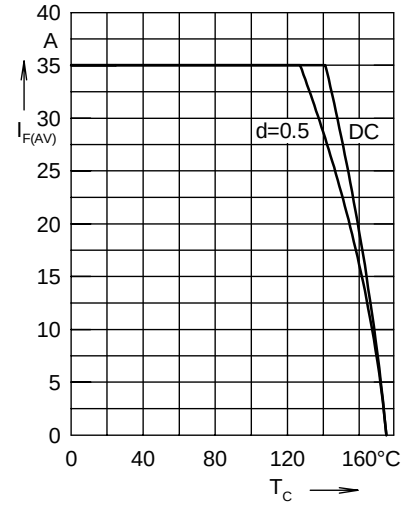


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

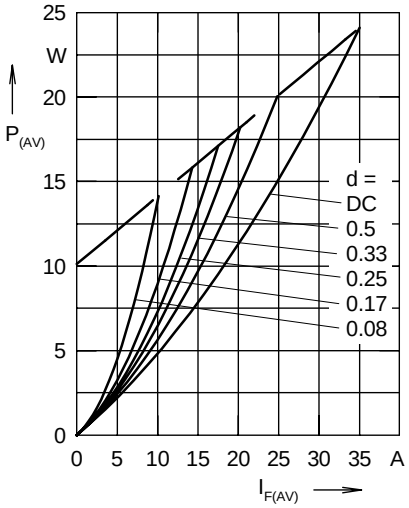


Fig. 5 Forward power loss characteristics

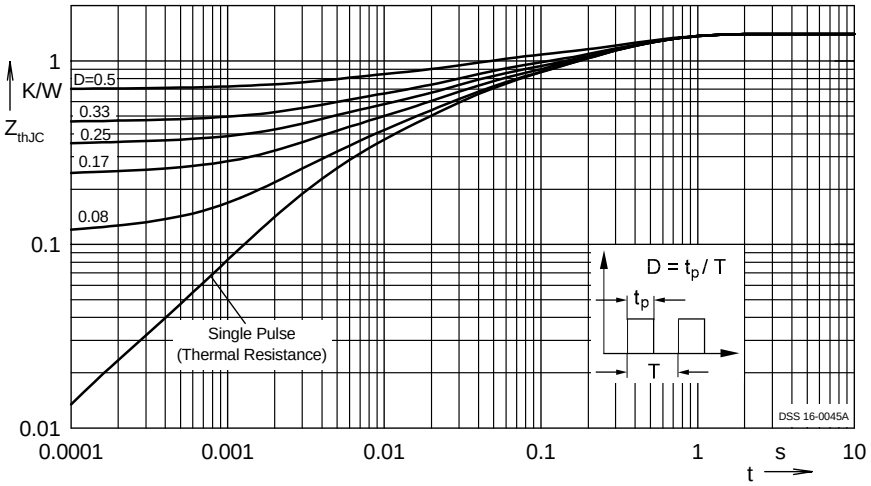


Fig. 6 Transient thermal impedance junction to case at various duty cycles

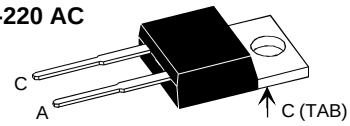
Note: All curves are per diode

Power Schottky Rectifier

I_{FAV} = 16 A
V_{RRM} = 45 V
V_F = 0.42 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 16-0045B

TO-220 AC



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	16	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	320	A
E_{AS}	I_{AS} = 15 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	32	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.5	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		100	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.42	V
	I_F = 15 A; T_{VJ} = 25°C		0.48	V
	I_F = 30 A; T_{VJ} = 125 °C		0.62	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

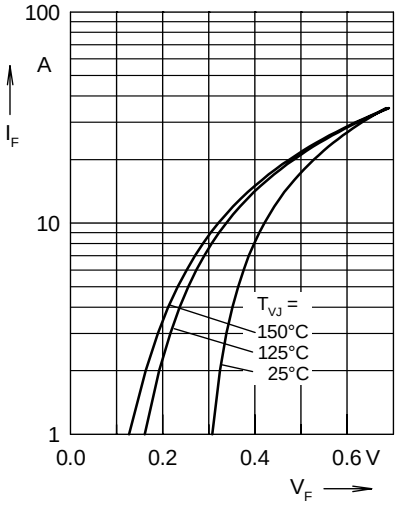


Fig. 1 Maximum forward voltage drop characteristics

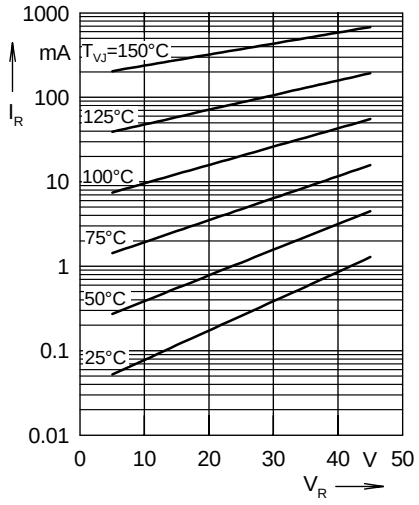


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

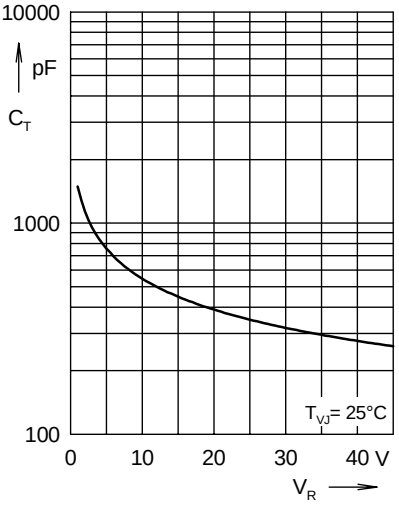


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

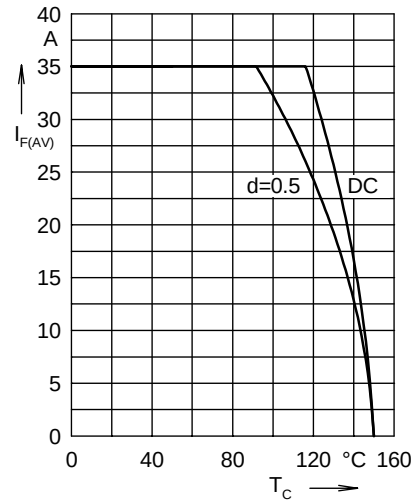


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

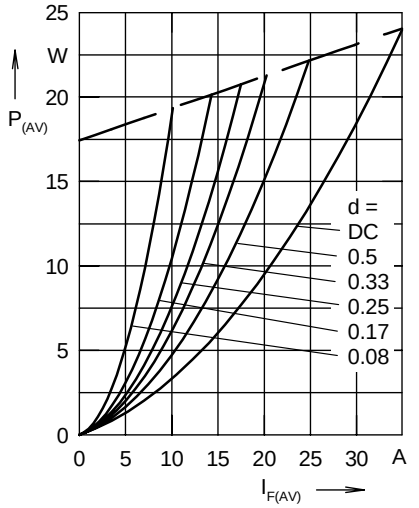


Fig. 5 Forward power loss characteristics

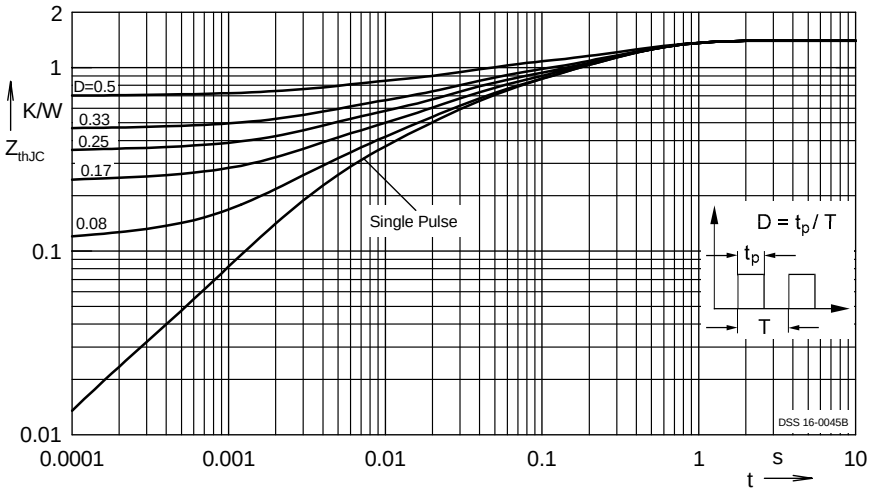


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

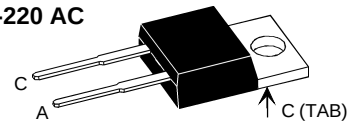
848

Power Schottky Rectifier

I_{FAV} = 25 A
V_{RRM} = 45 V
V_F = 0.59 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 25-0045A

TO-220 AC



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5	25	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	550	A
E_{AS}	I_{AS} = 18 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	46	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.8	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	135	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		1	mA
	T_{VJ} = 125°C V_R = V_{RRM}		10	mA
V_F	I_F = 25 A; T_{VJ} = 125°C		0.59	V
	I_F = 25 A; T_{VJ} = 25°C		0.69	V
	I_F = 50 A; T_{VJ} = 125 °C		0.73	V
R_{thJC}			1.1	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

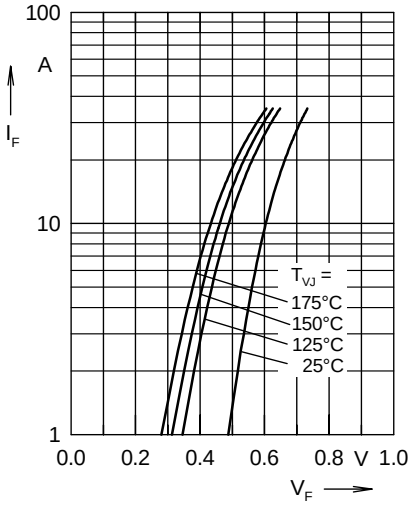


Fig. 1 Maximum forward voltage drop characteristics

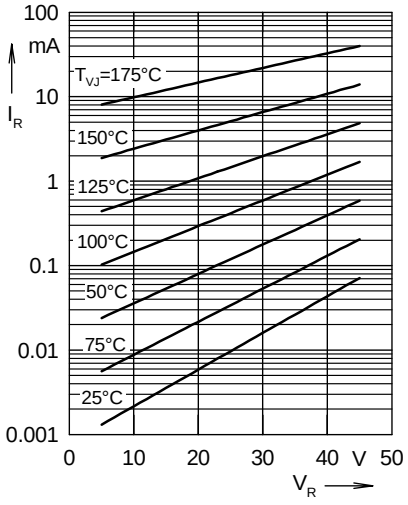


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

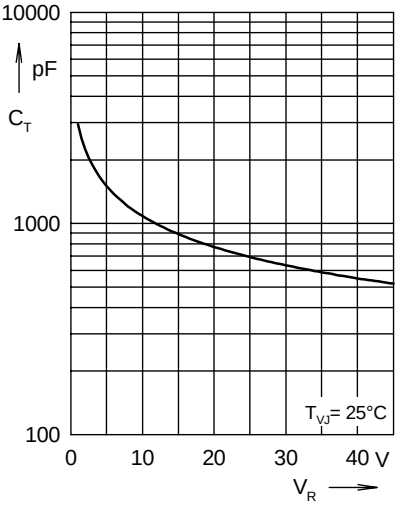


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

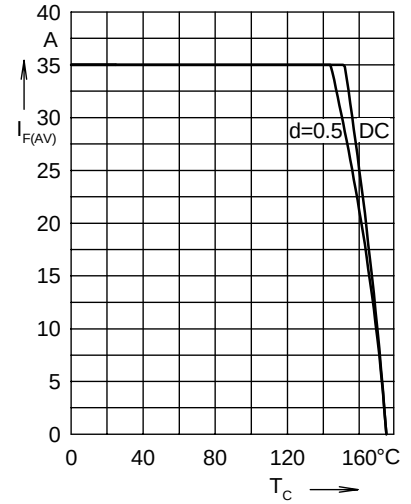


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

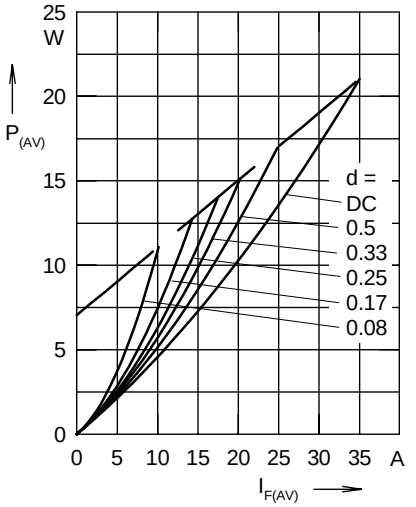


Fig. 5 Forward power loss characteristics

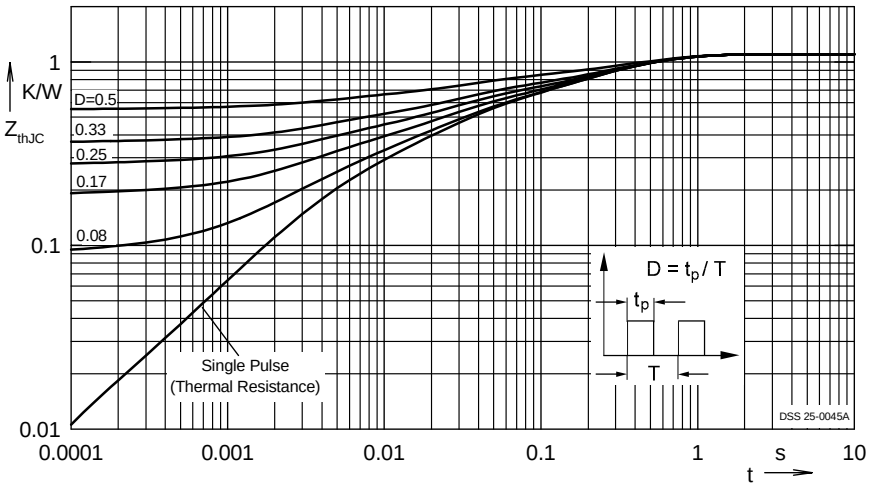


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

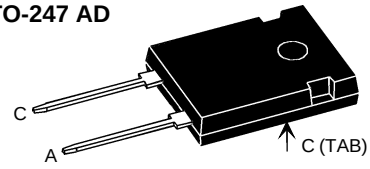
007

Power Schottky Rectifier

I_{FAV} = 60 A
V_{RRM} = 45 V
V_F = 0.57 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 60-0045B

TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 100°C; rectangular, d = 0.5	60	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	900	A
E_{AS}	I_{AS} = 20 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	57	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	2	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	155	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		250	mA
V_F	I_F = 60 A; T_{VJ} = 125°C		0.57	V
	I_F = 60 A; T_{VJ} = 25°C		0.60	V
	I_F = 120 A; T_{VJ} = 125 °C		0.93	V
R_{thJC}			0.8	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

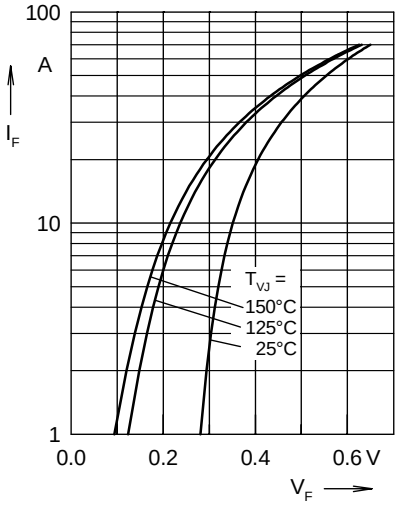


Fig. 1 Maximum forward voltage drop characteristics

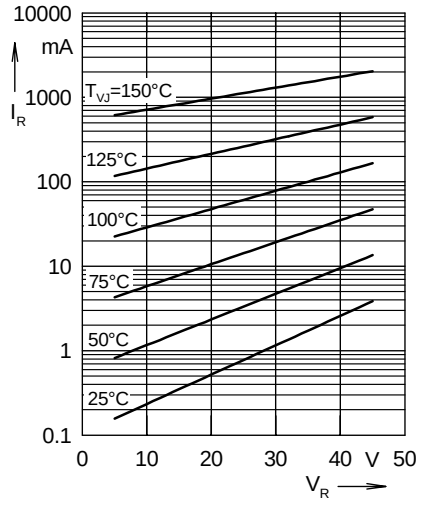


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

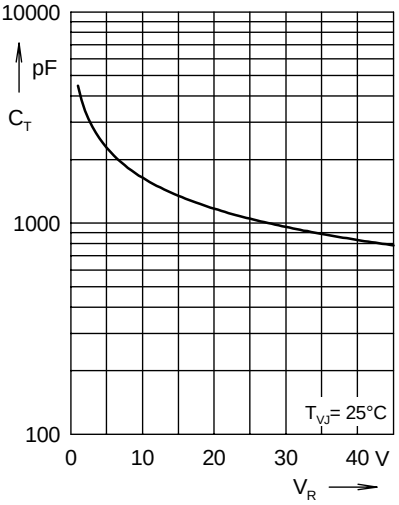


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

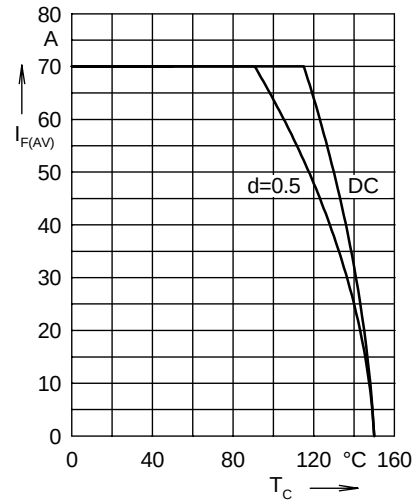


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

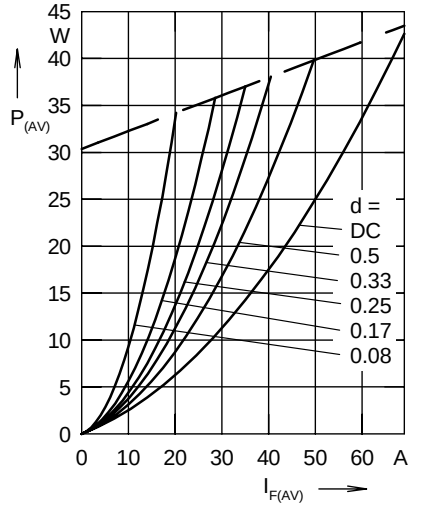


Fig. 5 Forward power loss characteristics

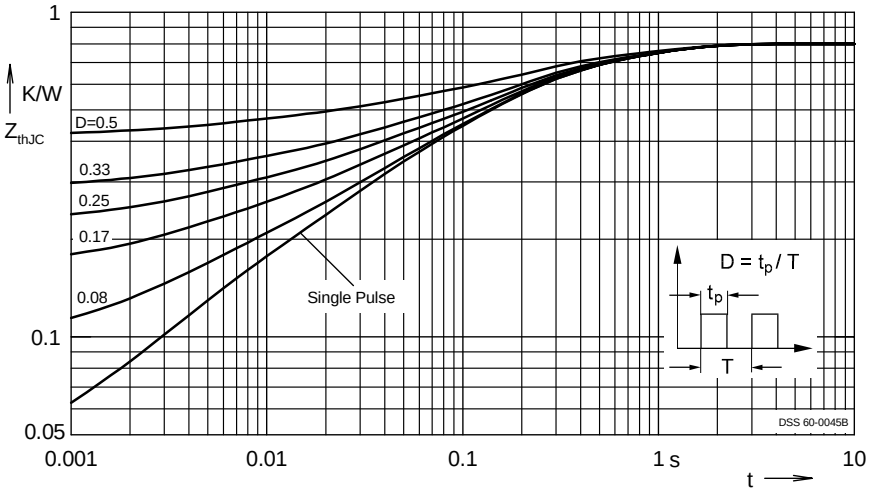


Fig. 6 Transient thermal impedance junction to case at various duty cycles

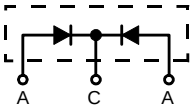
Note: All curves are per diode

007

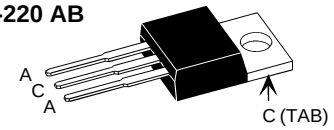
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x10 A
V_{RRM} = 45 V
V_F = 0.58 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 20-0045A



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	10	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5; per device	20	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	140	A
E_{AS}	I_{AS} = 13 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	24	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.3	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 125°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.58	V
	I_F = 10 A; T_{VJ} = 25°C		0.68	V
	I_F = 20 A; T_{VJ} = 125 °C		0.70	V
R_{thJC}			1.7	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

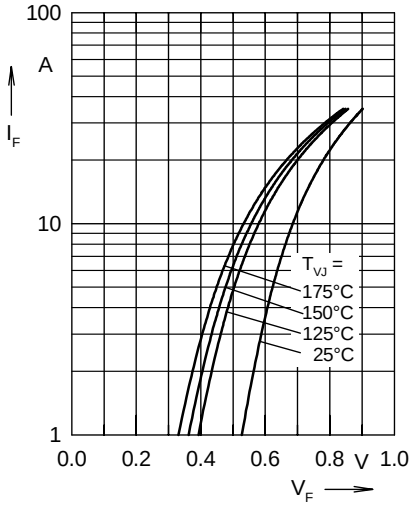


Fig. 1 Maximum forward voltage drop characteristics

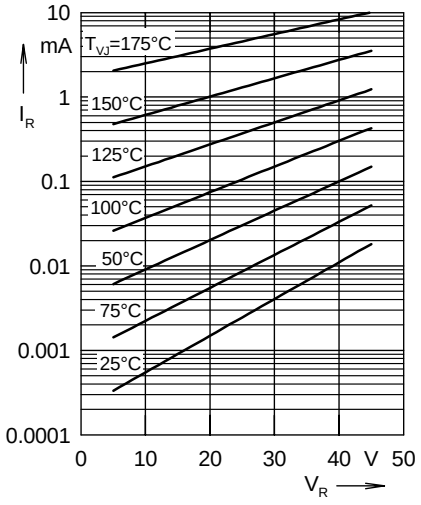


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

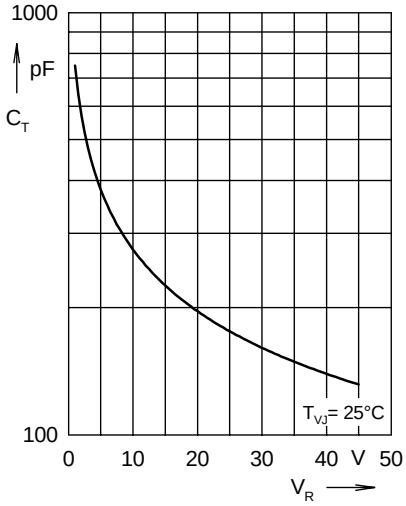


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

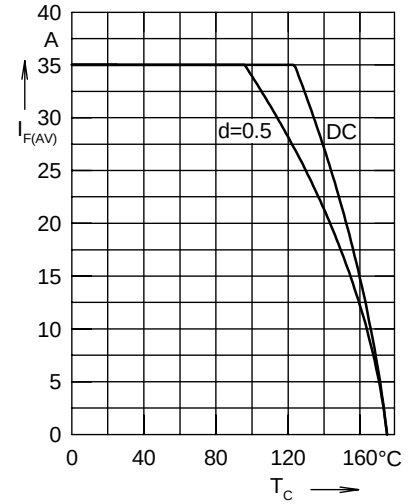


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

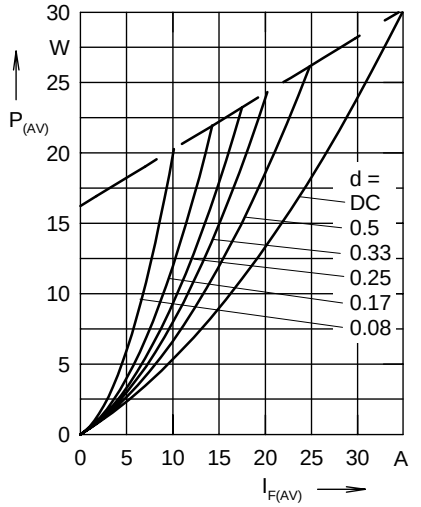


Fig. 5 Forward power loss characteristics

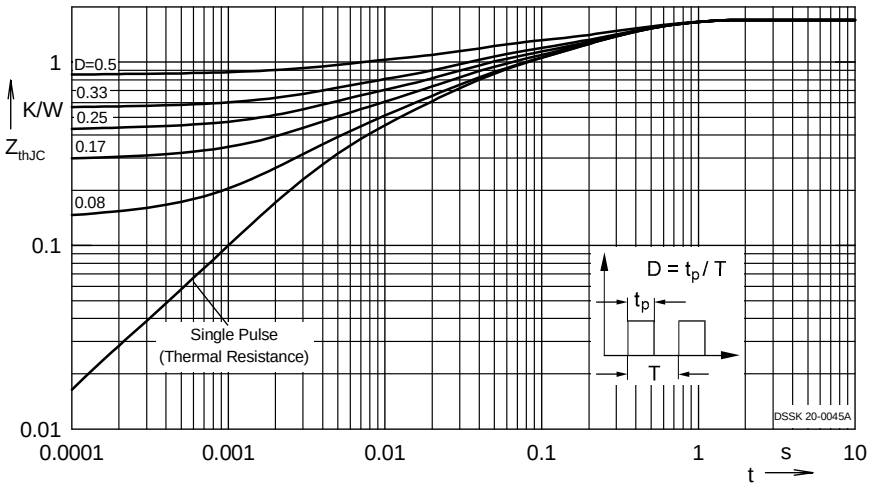


Fig. 6 Transient thermal impedance junction to case at various duty cycles

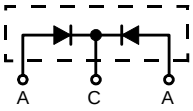
Note: All curves are per diode

007

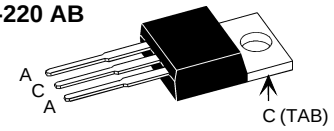
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x10 A
V_{RRM} = 45 V
V_F = 0.40 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 20-0045B



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5	10	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5; per device	20	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	160	A
E_{AS}	I_{AS} = 13 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	24	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.3	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	75	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		5	mA
	T_{VJ} = 100°C V_R = V_{RRM}		50	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.45	V
	I_F = 10 A; T_{VJ} = 25°C		0.51	V
	I_F = 20 A; T_{VJ} = 125 °C		0.70	V
R_{thJC}			1.7	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

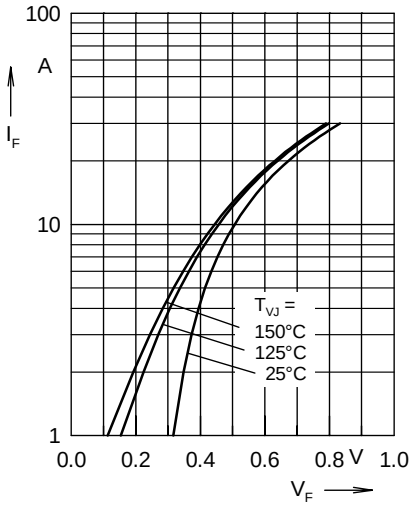


Fig. 1 Maximum forward voltage drop characteristics

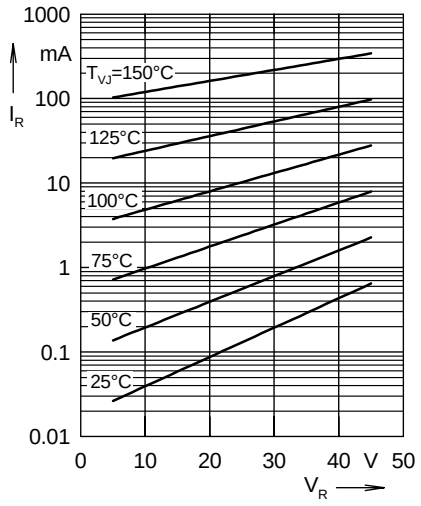


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

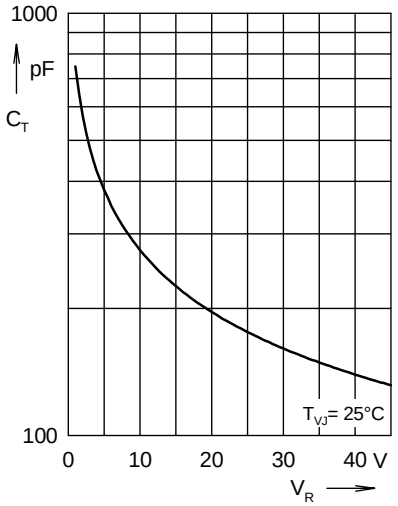


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

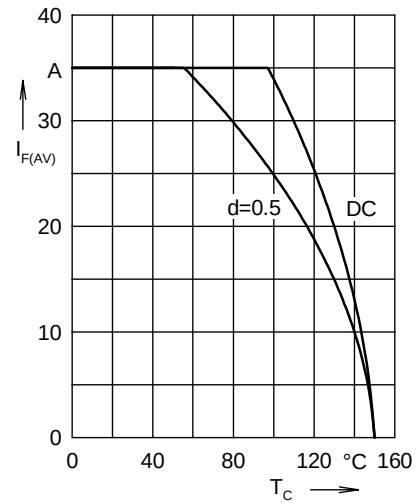


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

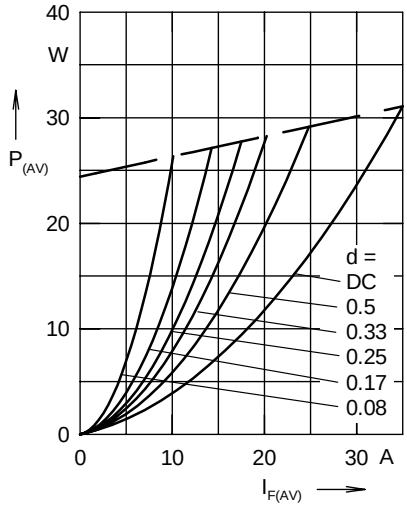


Fig. 5 Forward power loss characteristics

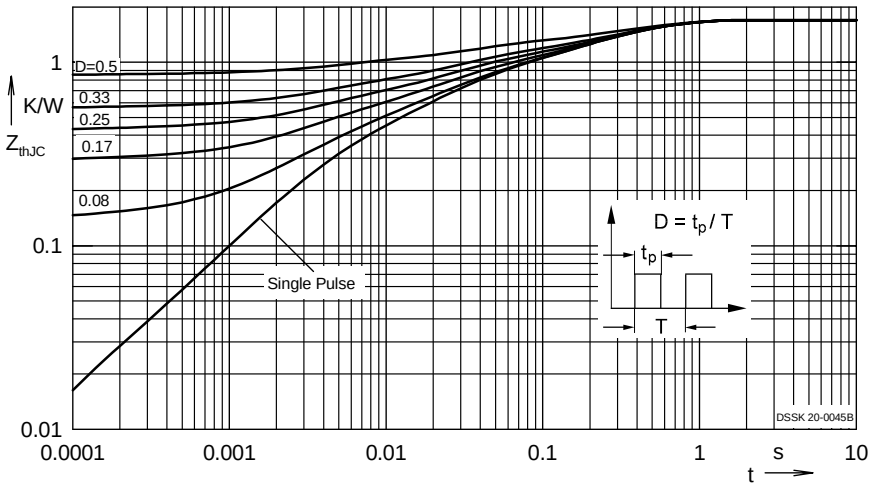


Fig. 6 Transient thermal impedance junction to case at various duty cycles

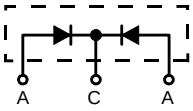
Note: All curves are per diode

007

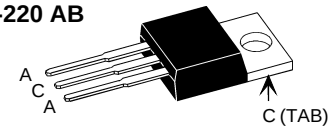
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x14 A
V_{RRM} = 45 V
V_F = 0.57 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 28-0045A



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	14	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5; per device	28	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	280	A
E_{AS}	I_{AS} = 15 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	32	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.5	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.57	V
	I_F = 15 A; T_{VJ} = 25°C		0.67	V
	I_F = 30 A; T_{VJ} = 125 °C		0.69	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

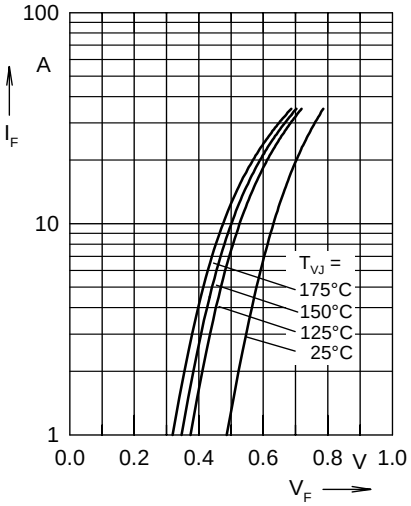


Fig. 1 Maximum forward voltage drop characteristics

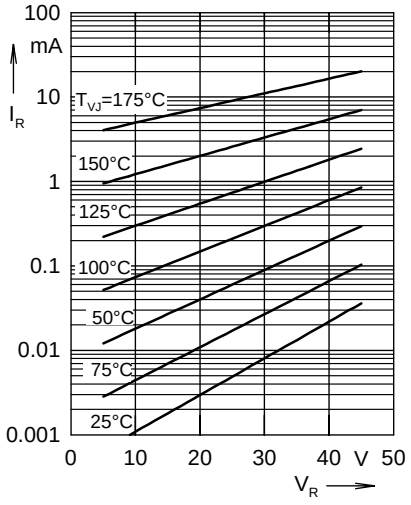


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

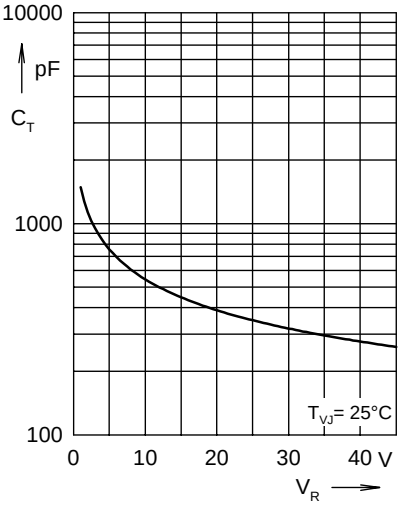


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

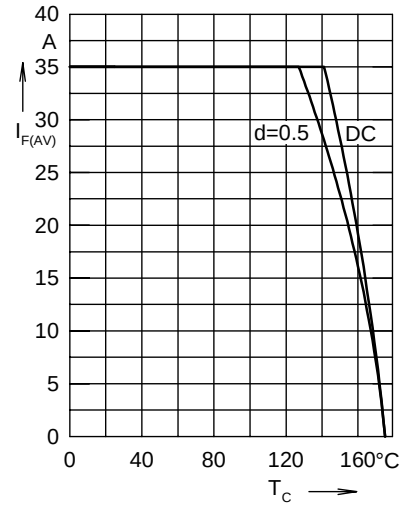


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

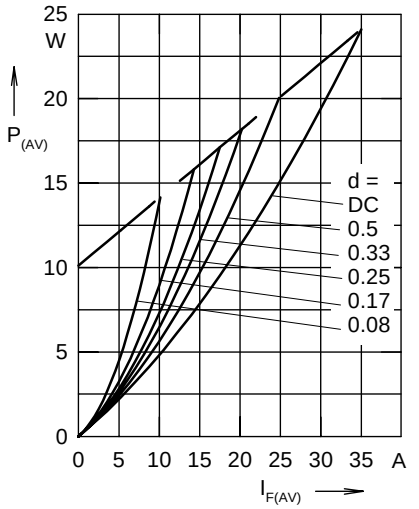


Fig. 5 Forward power loss characteristics

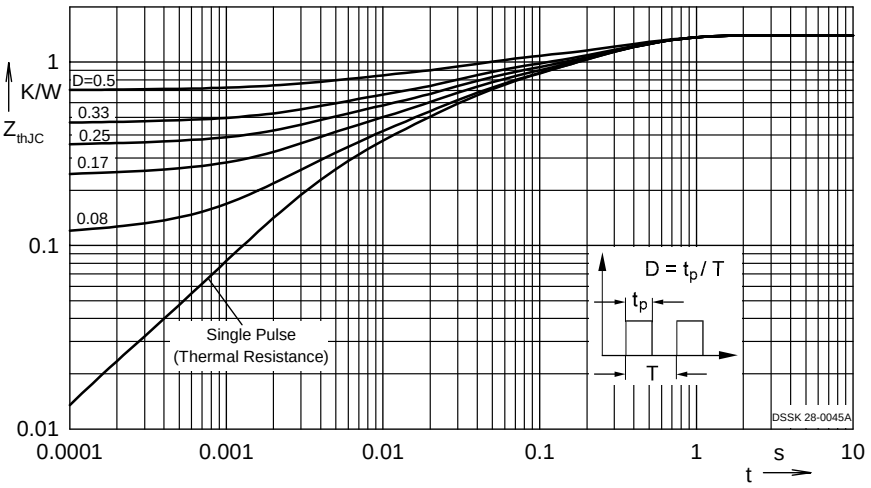


Fig. 6 Transient thermal impedance junction to case at various duty cycles

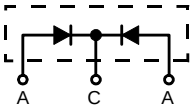
Note: All curves are per diode

007

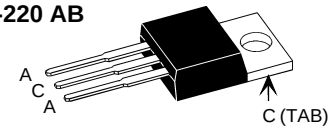
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x14 A
V_{RRM} = 45 V
V_F = 0.42 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 28-0045B



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5	14	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5; per device	28	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	320	A
E_{AS}	I_{AS} = 15 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	32	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.5	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		100	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.42	V
	I_F = 15 A; T_{VJ} = 25°C		0.48	V
	I_F = 30 A; T_{VJ} = 125 °C		0.62	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

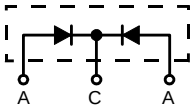
Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

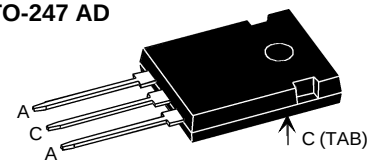
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x15 A
V_{RRM} = 45 V
V_F = 0.57 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 30-0045A



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		50	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	15	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5; per device	30	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	280	A
E_{AS}	I_{AS} = 15 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	32	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.5	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.57	V
	I_F = 15 A; T_{VJ} = 25°C		0.66	V
	I_F = 30 A; T_{VJ} = 125°C		0.67	V
R_{thJC}			1.4	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

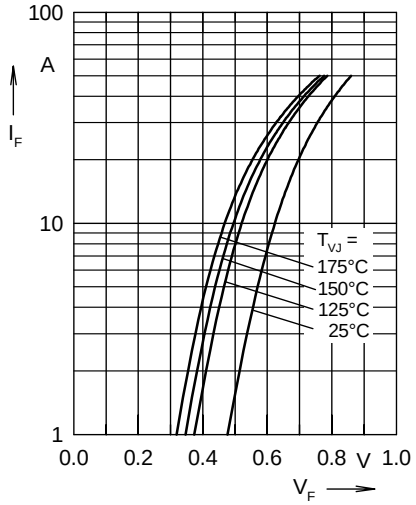


Fig. 1 Maximum forward voltage drop characteristics

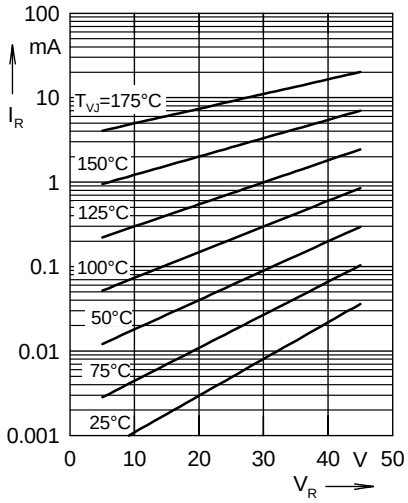


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

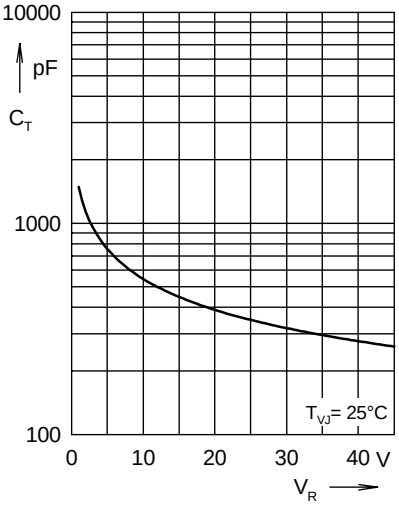


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

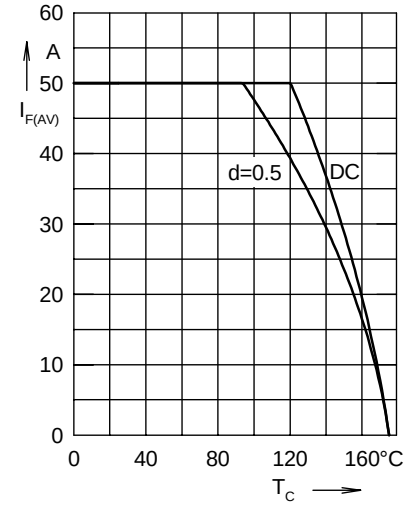


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

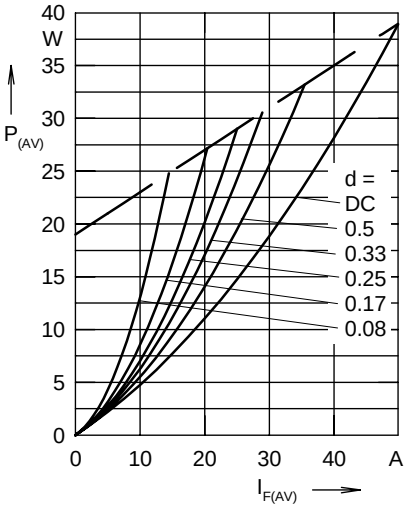


Fig. 5 Forward power loss characteristics

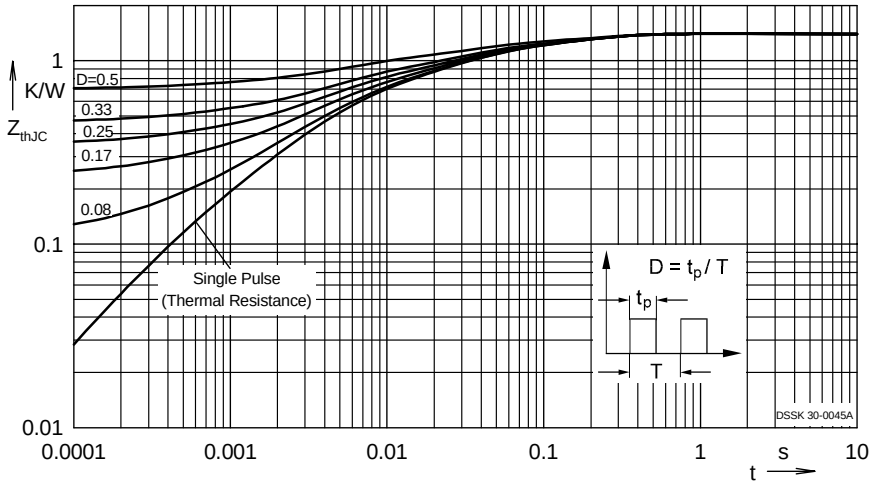


Fig. 6 Transient thermal impedance junction to case at various duty cycles

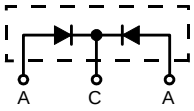
Note: All curves are per diode

007

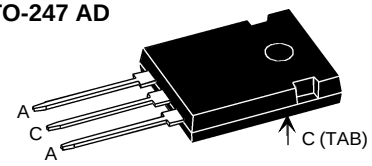
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x15 A
V_{RRM} = 45 V
V_F = 0.41 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 30-0045B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		50	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5	15	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5; per device	30	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	320	A
E_{AS}	I_{AS} = 15 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	32	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.5	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		100	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.41	V
	I_F = 15 A; T_{VJ} = 25°C		0.47	V
	I_F = 30 A; T_{VJ} = 125°C		0.60	V
R_{thJC}			1.4	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

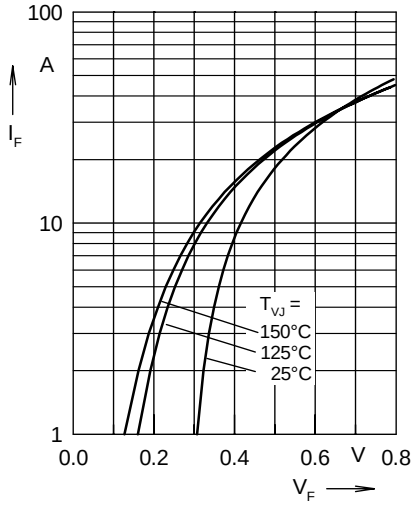


Fig. 1 Maximum forward voltage drop characteristics

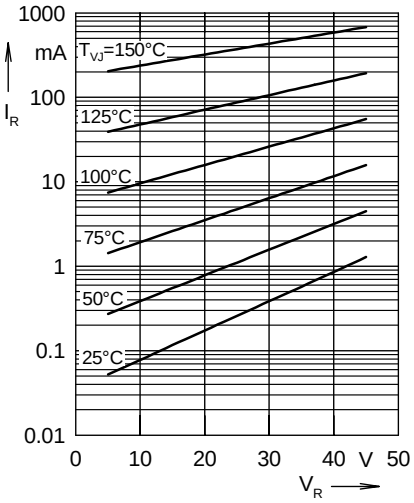


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

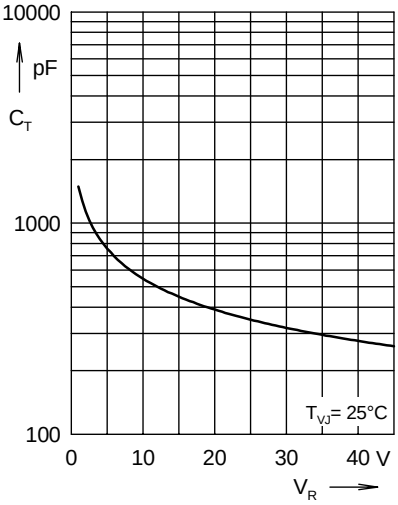


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

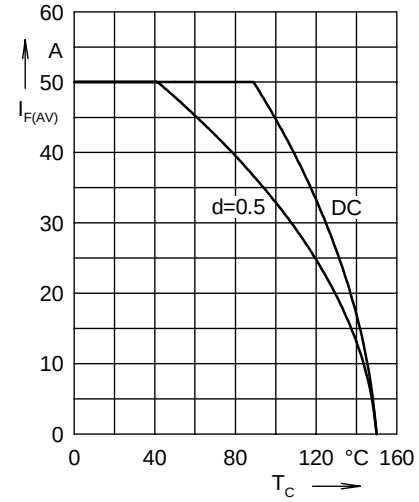


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

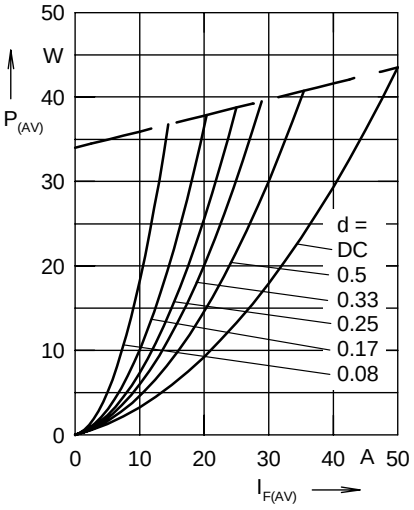


Fig. 5 Forward power loss characteristics

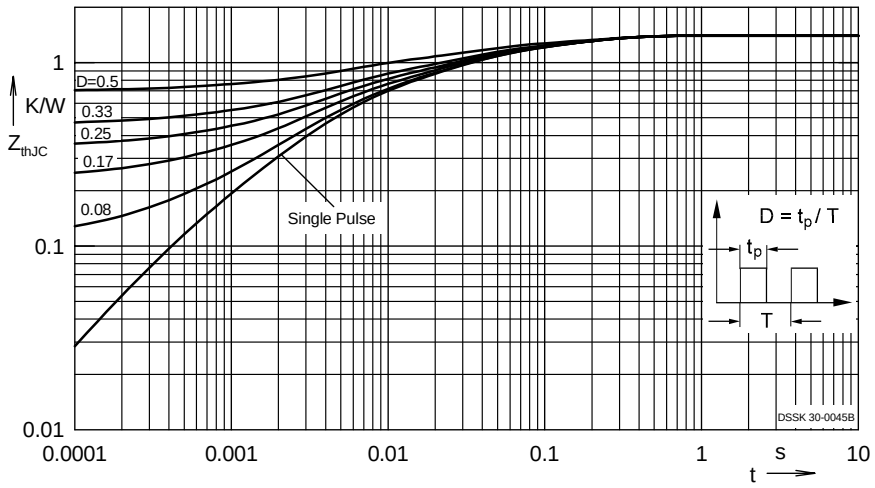


Fig. 6 Transient thermal impedance junction to case at various duty cycles

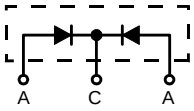
Note: All curves are per diode

007

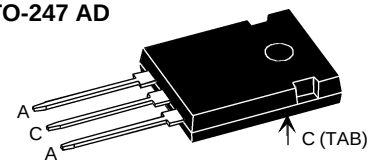
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x30 A
V_{RRM} = 45 V
V_F = 0.60 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 60-0045A



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 150°C; rectangular, d = 0.5	30	A
I_{FAV}	T_C = 150°C; rectangular, d = 0.5; per device	60	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	550	A
E_{AS}	I_{AS} = 18 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	46	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.8	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	135	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		1	mA
	T_{VJ} = 125°C V_R = V_{RRM}		10	mA
V_F	I_F = 30 A; T_{VJ} = 125°C		0.60	V
	I_F = 30 A; T_{VJ} = 25°C		0.69	V
	I_F = 60 A; T_{VJ} = 125°C		0.74	V
R_{thJC}			1.1	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

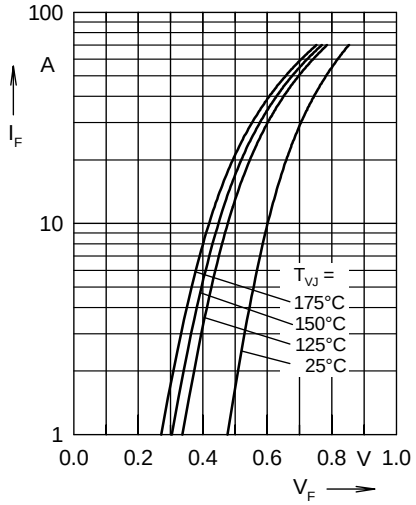


Fig. 1 Maximum forward voltage drop characteristics

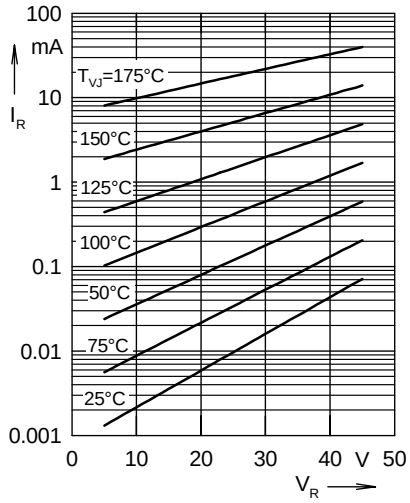


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

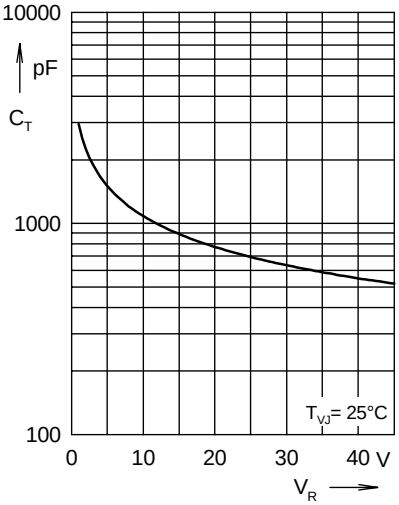


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

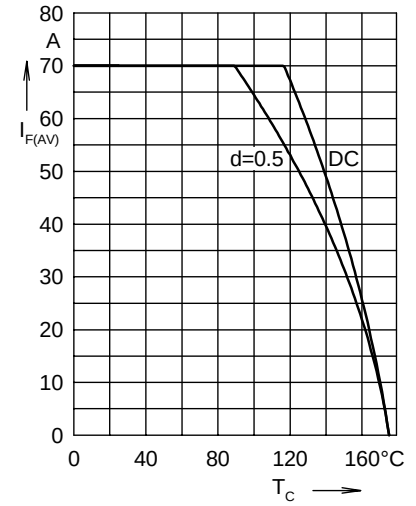


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

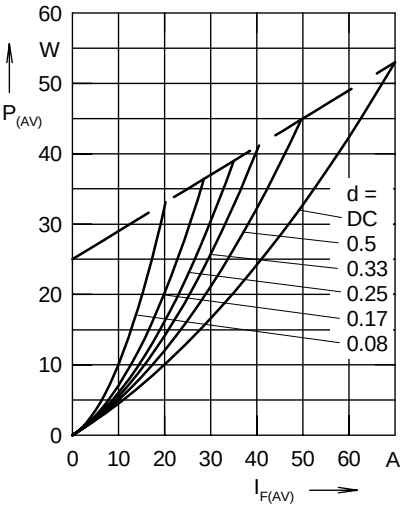


Fig. 5 Forward power loss characteristics

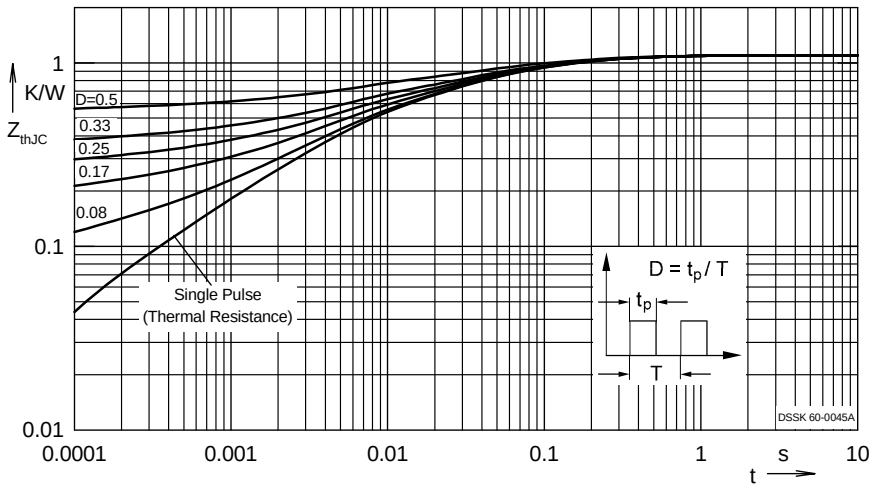


Fig. 6 Transient thermal impedance junction to case at various duty cycles

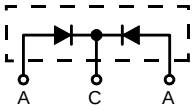
Note: All curves are per diode

007

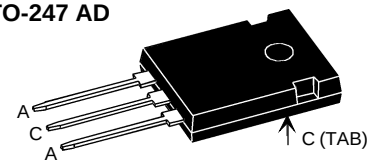
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x30 A
V_{RRM} = 45 V
V_F = 0.44 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 60-0045B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 120°C; rectangular, d = 0.5	30	A
I_{FAV}	T_C = 120°C; rectangular, d = 0.5; per device	60	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	640	A
E_{AS}	I_{AS} = 18 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	46	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.8	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	115	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		20	mA
	T_{VJ} = 100°C V_R = V_{RRM}		200	mA
V_F	I_F = 30 A; T_{VJ} = 125°C		0.44	V
	I_F = 30 A; T_{VJ} = 25°C		0.50	V
	I_F = 60 A; T_{VJ} = 125°C		0.68	V
R_{thJC}			1.1	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

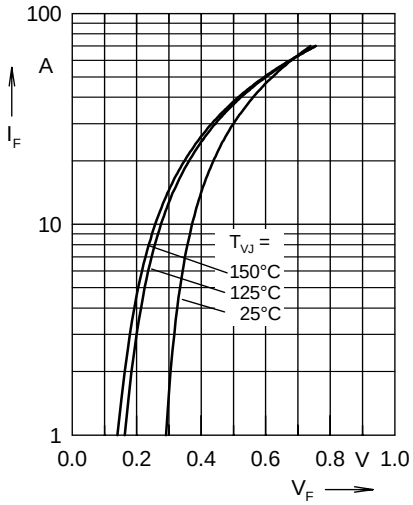


Fig. 1 Maximum forward voltage drop characteristics

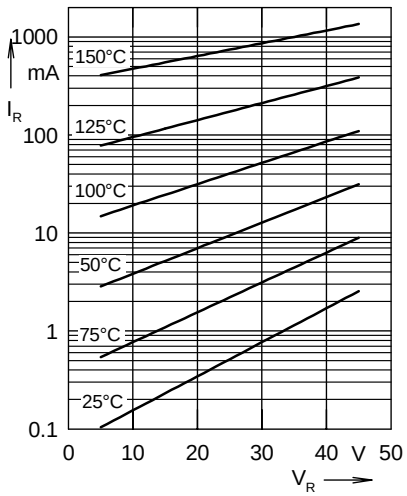


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

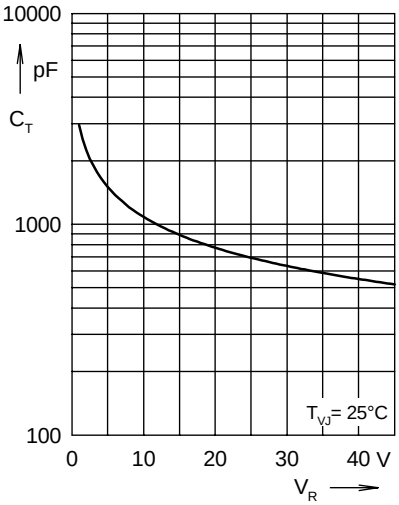


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

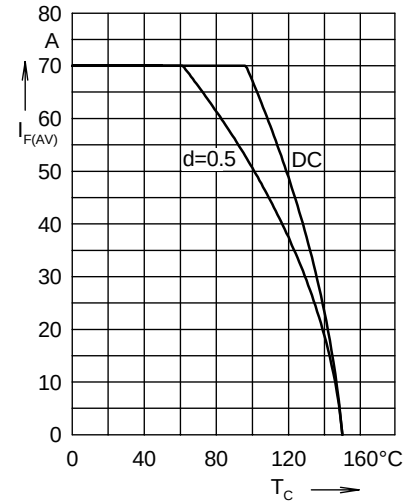


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

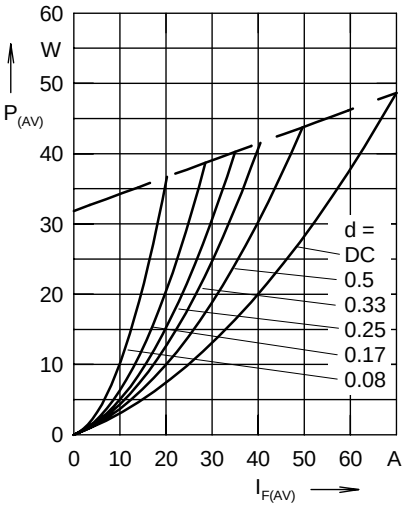


Fig. 5 Forward power loss characteristics

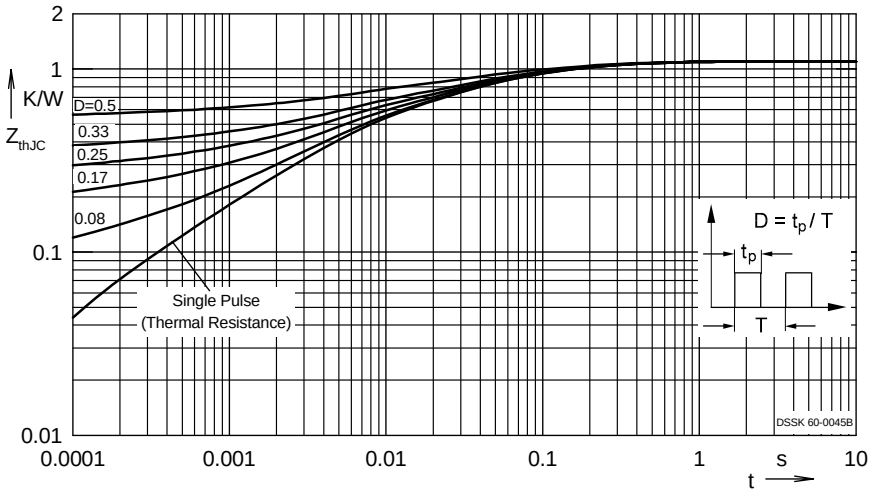


Fig. 6 Transient thermal impedance junction to case at various duty cycles

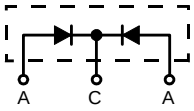
Note: All curves are per diode

007

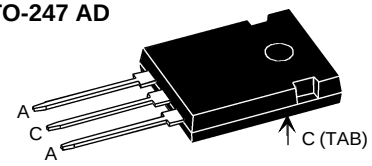
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x40 A
V_{RRM} = 45 V
V_F = 0.45 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSSK 80-0045B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 125°C; rectangular, d = 0.5	40	A
I_{FAV}	T_C = 125°C; rectangular, d = 0.5; per device	80	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	900	A
E_{AS}	I_{AS} = 20 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	57	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	2	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	155	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		10	mA
	T_{VJ} = 100°C V_R = V_{RRM}		250	mA
V_F	I_F = 40 A; T_{VJ} = 125°C		0.45	V
	I_F = 40 A; T_{VJ} = 25°C		0.51	V
	I_F = 80 A; T_{VJ} = 125°C		0.69	V
R_{thJC}			0.8	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

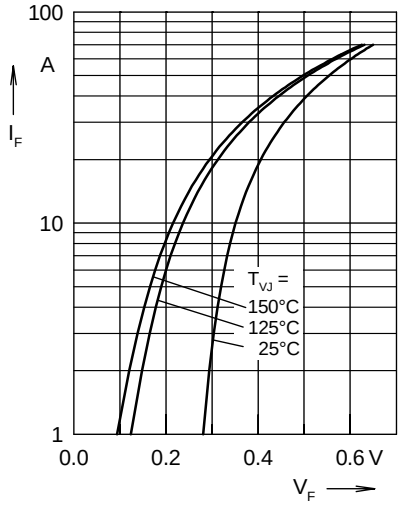


Fig. 1 Maximum forward voltage drop characteristics

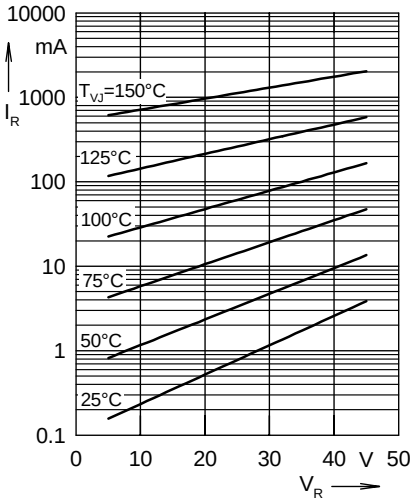


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

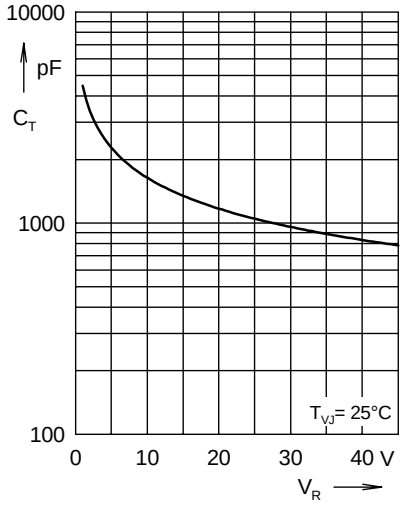


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

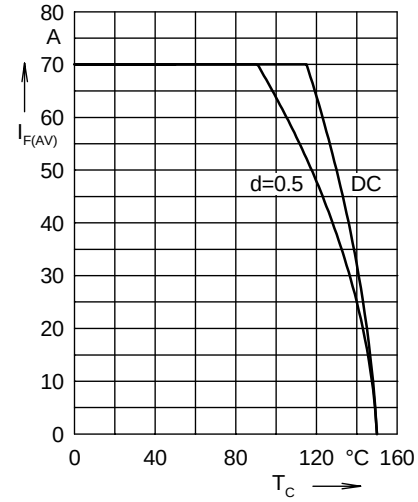


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

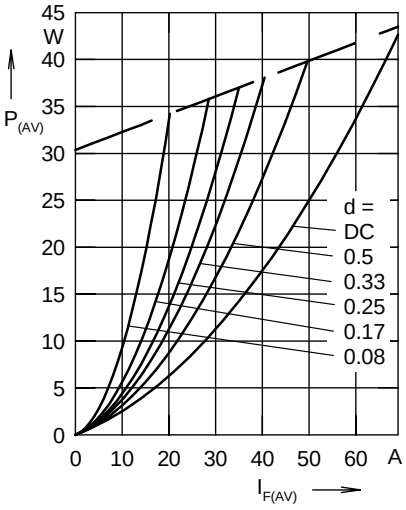


Fig. 5 Forward power loss characteristics

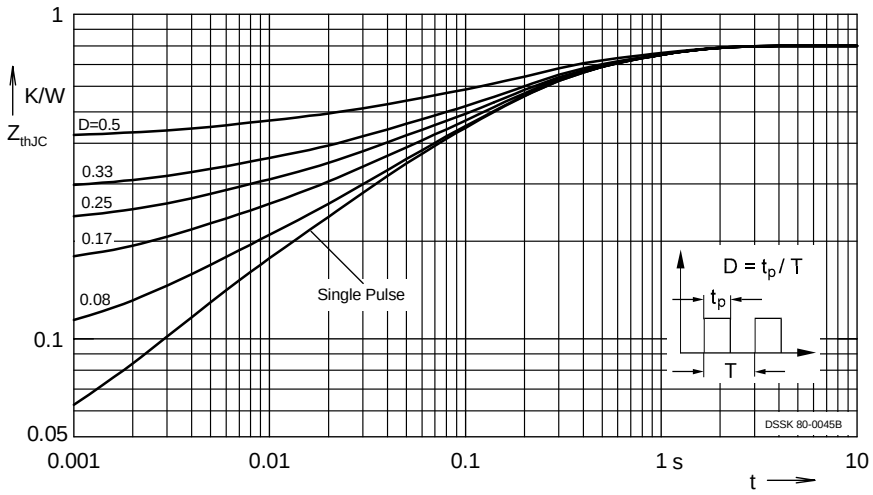


Fig. 6 Transient thermal impedance junction to case at various duty cycles

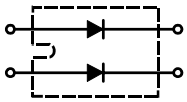
Note: All curves are per diode

007

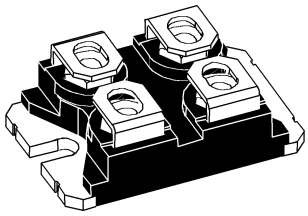
Power Schottky Rectifier

I_{FAV} = 2x60 A
V_{RRM} = 45 V
V_F = 0.66 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 2x61-0045A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		100	A
I_{FAVM}	T_C = 105°C; rectangular, d = 0.5	60	A
I_{FAVM}	T_C = 105°C; rectangular, d = 0.5; per device	120	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	800	A
E_{AS}	I_{AS} = 20 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	57	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	2	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	150	W
V_{ISOL}	50/60 Hz, RMS I_{ISOL} ≤ 1 mA	2500	V~
M_d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		2	mA
	T_{VJ} = 125°C V_R = V_{RRM}		20	mA
V_F	I_F = 60 A; T_{VJ} = 125°C		0.66	V
	I_F = 60 A; T_{VJ} = 25°C		0.74	V
	I_F = 120 A; T_{VJ} = 125°C		0.86	V
R_{thJC}			0.8	K/W
R_{thCH}		0.1		K/W

Features
- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent Schottky diodes in 1 package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

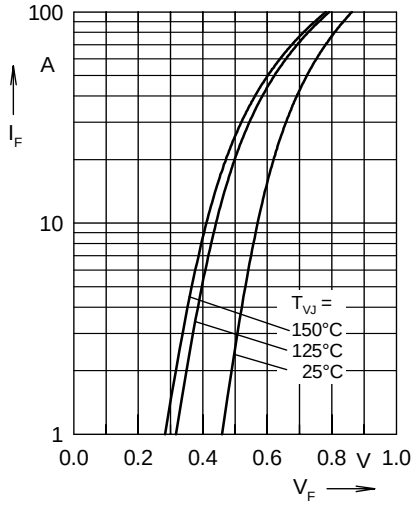


Fig. 1 Maximum forward voltage drop characteristics

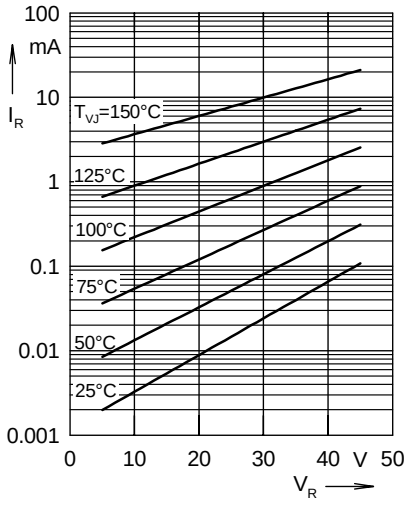


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

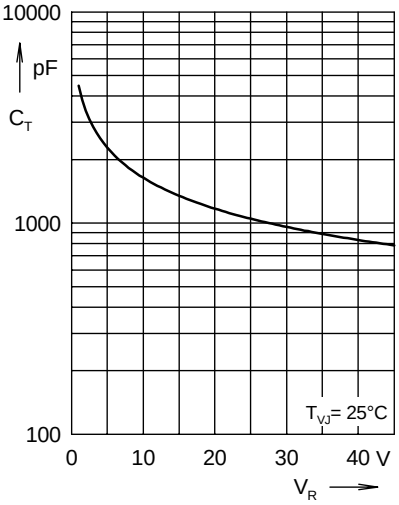


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

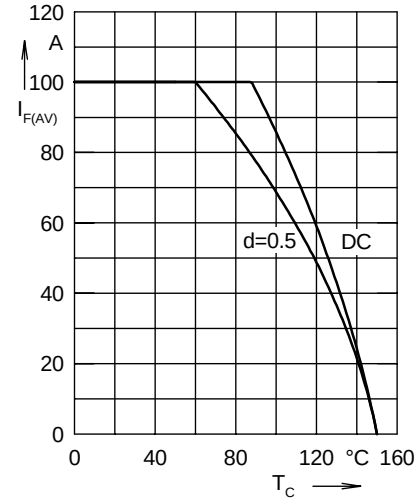


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

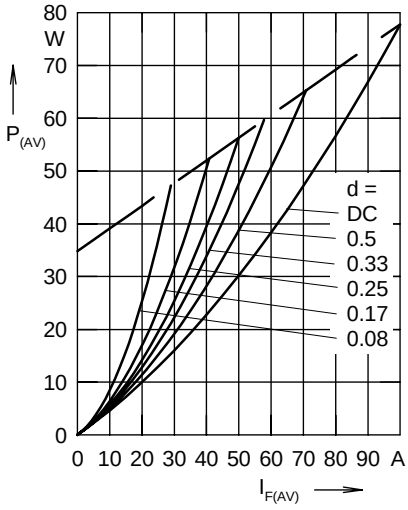


Fig. 5 Forward power loss characteristics

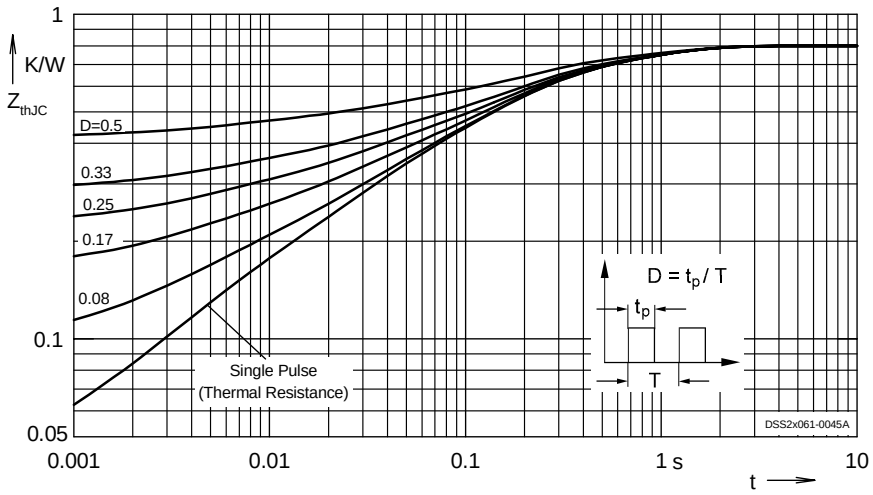


Fig. 6 Transient thermal impedance junction to case at various duty cycles

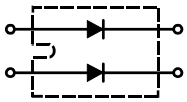
Note: All curves are per diode

007

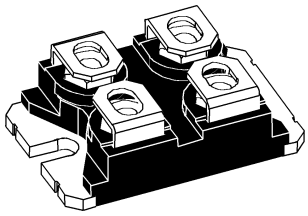
Power Schottky Rectifier

I_{FAV} = 2x80 A
V_{RRM} = 45 V
V_F = 0.64 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 2x81-0045B



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		100	A
I_{FAVM}	T_C = 75°C; rectangular, d = 0.5	80	A
I_{FAVM}	T_C = 75°C; rectangular, d = 0.5; per device	160	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	900	A
E_{AS}	I_{AS} = 20 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	57	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	2	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	150	W
V_{ISOL}	50/60 Hz, RMS I_{ISOL} ≤ 1 mA	2500	V~
M_d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		60	mA
	T_{VJ} = 100°C V_R = V_{RRM}		250	mA
V_F	I_F = 80 A; T_{VJ} = 125°C		0.64	V
	I_F = 80 A; T_{VJ} = 25°C		0.66	V
	I_F = 160 A; T_{VJ} = 125°C		1.07	V
R_{thJC}			0.8	K/W
R_{thCH}		0.1		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

Features
- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent Schottky diodes in 1 package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

025

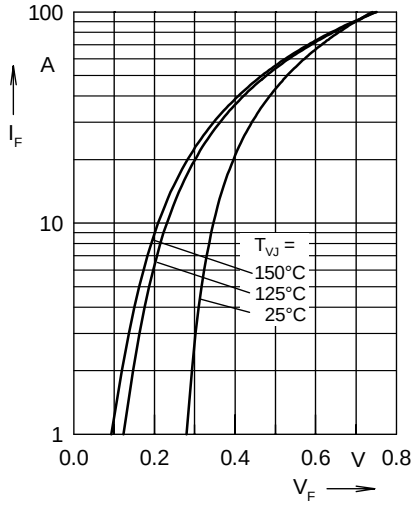


Fig. 1 Maximum forward voltage drop characteristics

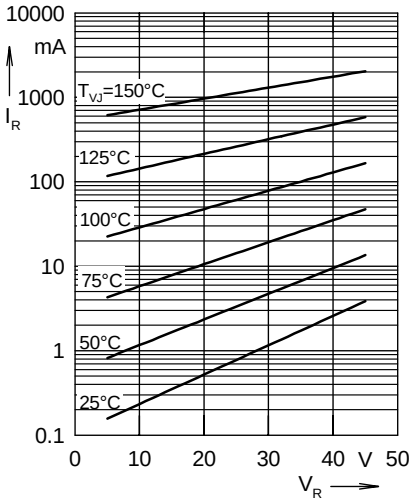


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

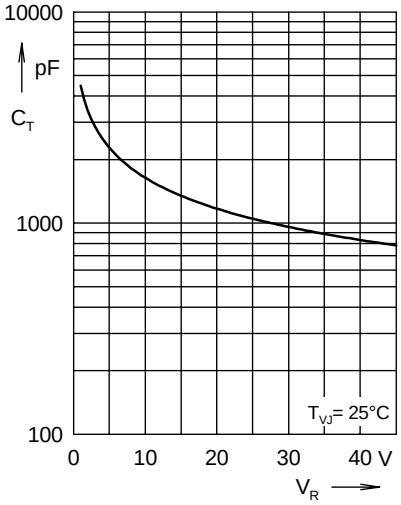


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

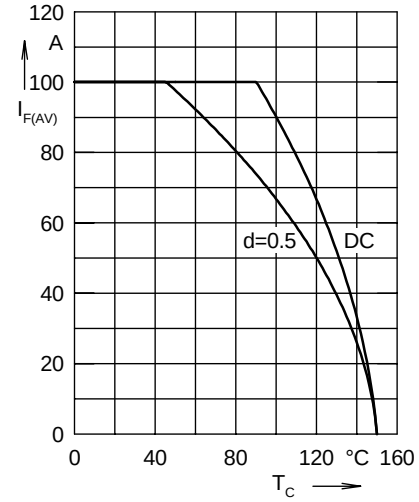


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

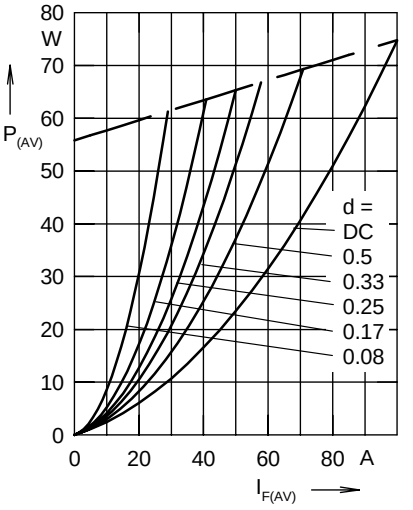


Fig. 5 Forward power loss characteristics

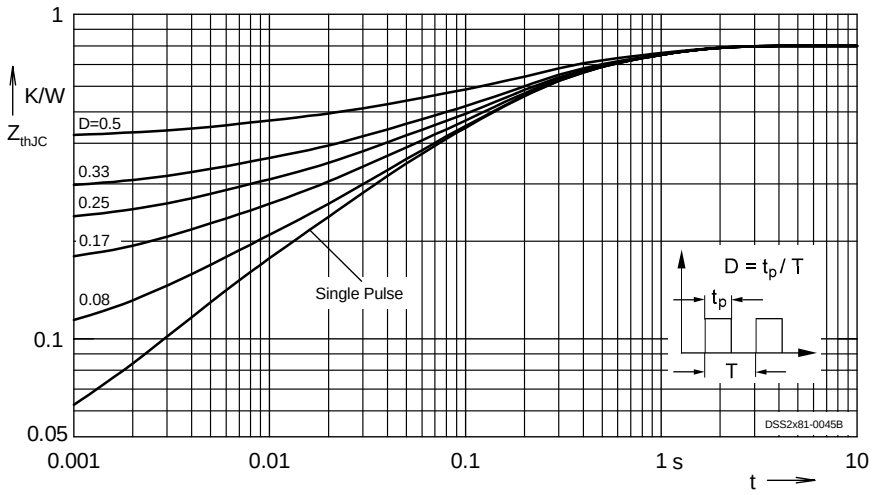


Fig. 6 Transient thermal impedance junction to case at various duty cycles

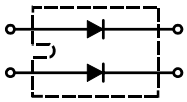
Note: All curves are per diode

007

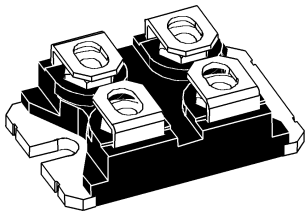
Power Schottky Rectifier

I_{FAV} = 2x120 A
V_{RRM} = 45 V
V_F = 0.59 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 2x121-0045B



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		150	A
I_{FAVM}	T_C = 100°C; rectangular, d = 0.5	120	A
I_{FAVM}	T_C = 100°C; rectangular, d = 0.5; per device	240	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	1800	A
E_{AS}	I_{AS} = 28 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	112	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	2.8	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	310	W
V_{ISOL}	50/60 Hz, RMS I_{ISOL} ≤ 1 mA	2500	V~
M_d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		120	mA
	T_{VJ} = 100°C V_R = V_{RRM}		500	mA
V_F	I_F = 120 A; T_{VJ} = 125°C		0.59	V
	I_F = 120 A; T_{VJ} = 25°C		0.62	V
	I_F = 240 A; T_{VJ} = 125°C		0.97	V
R_{thJC}			0.4	K/W
R_{thCH}		0.1		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

Features
- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent Schottky diodes in 1 package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

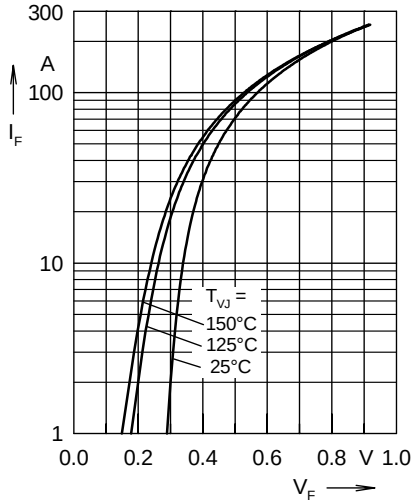


Fig. 1 Maximum forward voltage drop characteristics

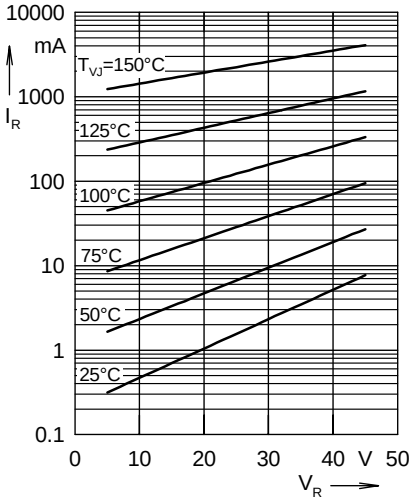


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

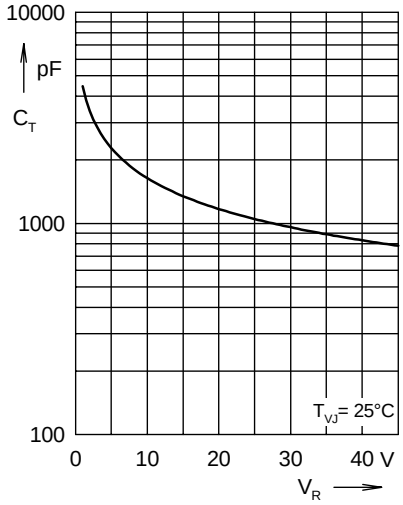


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

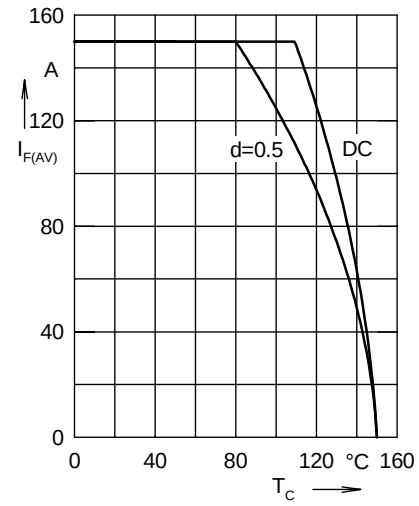


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

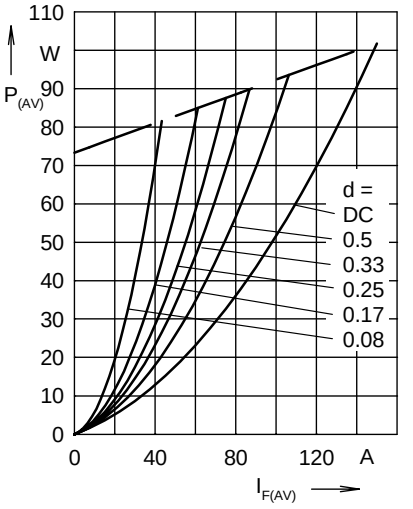


Fig. 5 Forward power loss characteristics

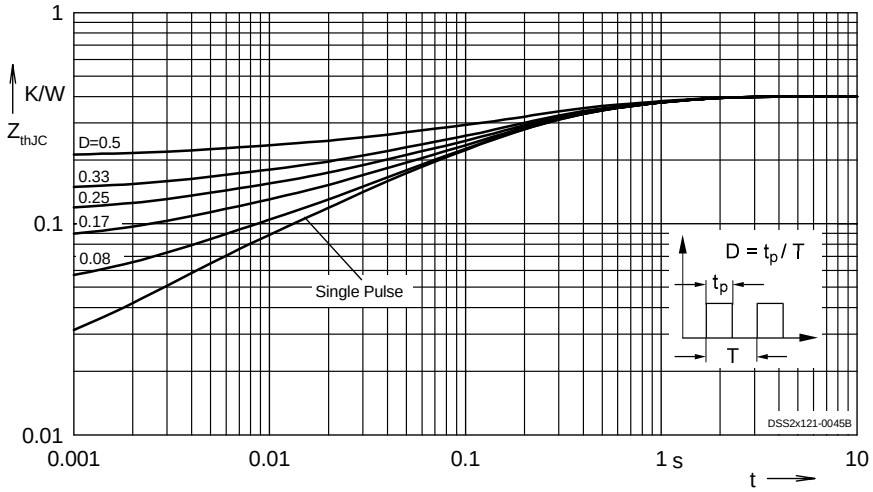


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

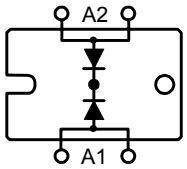
014

Power Schottky Rectifier

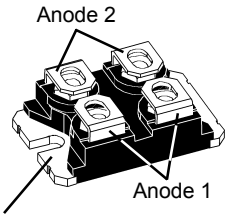
Non isolated

I_{FAVM} = 2x160 A
V_{RRM} = 45 V
V_F = 0.73 V

V_{RSM} V	V_{RRM} V	Type
45	45	DSS 2x160-0045A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		200	A
I_{FAVM}	T_C = 100°C; rectangular, d = 0.5	160	A
I_{FAVM}	T_C = 100°C; rectangular, d = 0.5; per device	320	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	1600	A
E_{AS}	I_{AS} = 28 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	112	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	2.8	A
$(dv/dt)_{cr}$		1000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	410	W
M_d	mounting torque (M4)	1.1-1.5/9-13	Nm/lb.in.
	terminal connection torque (M4)	1.1-1.5/9-13	Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		4	mA
	T_{VJ} = 125°C V_R = V_{RRM}		40	mA
V_F	I_F = 160 A; T_{VJ} =125°C		0.73	V
	T_{VJ} = 25°C		0.80	V
	I_F = 320 A; T_{VJ} =125°C		0.99	V
R_{thJC}			0.3	K/W
R_{thCH}		0.15		K/W

Features
- International standard package miniBLOC
- Epoxy meets UL 94V-0
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

824

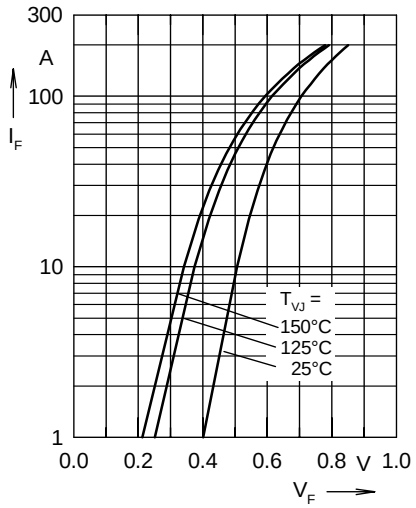


Fig. 1 Maximum forward voltage drop characteristics

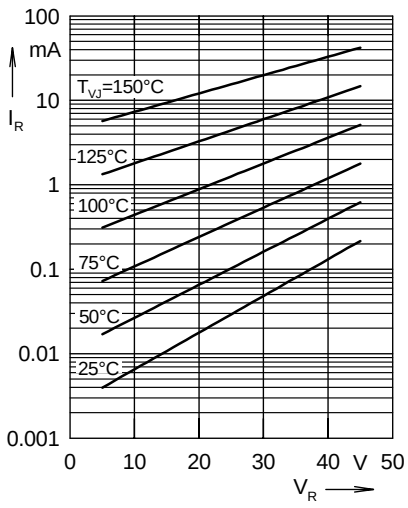


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

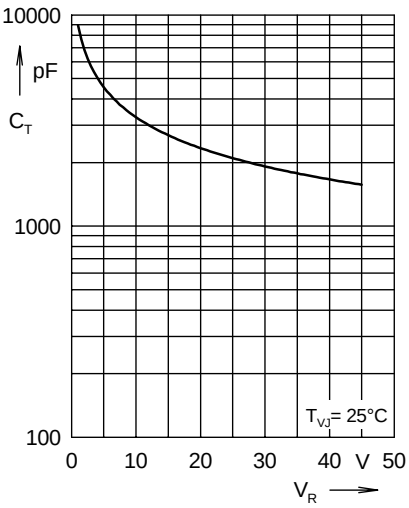


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

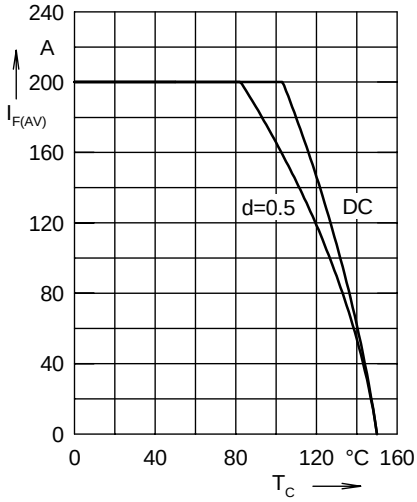


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

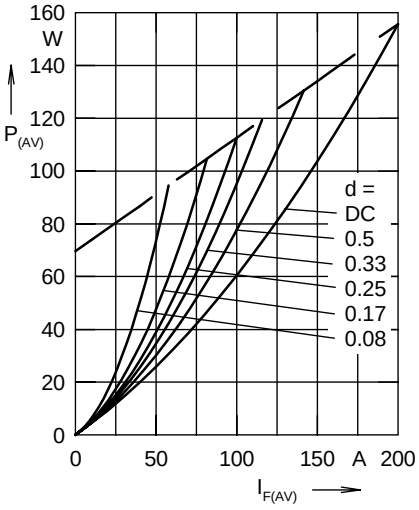


Fig. 5 Forward power loss characteristics

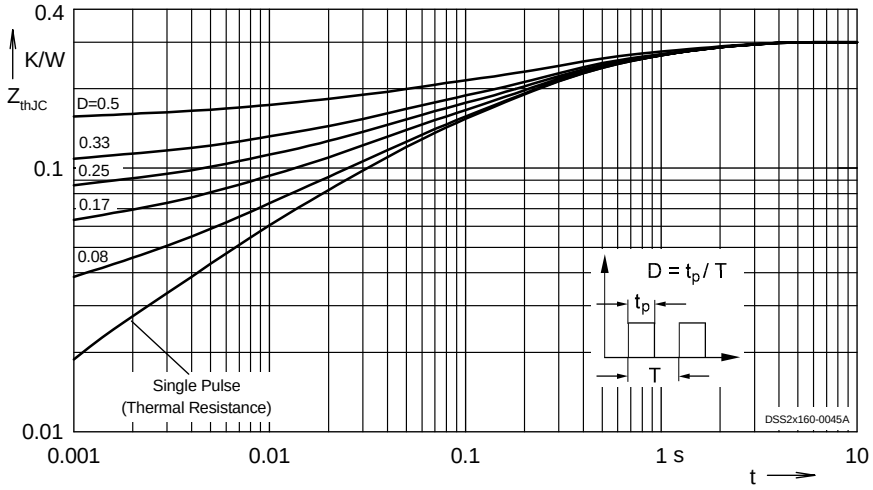


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

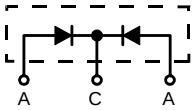
824

Power Schottky Rectifier
with common cathode

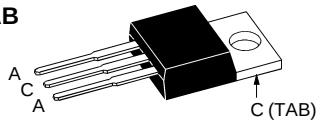
I_{FAV} = 2x15 A
V_{RRM} = 60 V
V_F = 0.52 V

Preliminary Data

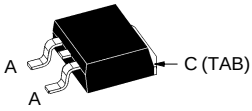
V_{RSM}	V_{RRM}	Type
V	V	
60	60	DSSK 28-006B
60	60	DSSK 28-006BS



TO-220 AB
(B-Type)



TO-263 AB
(BS-Type)



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5	15	A
I_{FAV}	T_C = 135°C; rectangular, d = 0.5; per device	30	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	320	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	115	W
M_d	mounting torque (Version B only)	0.4...0.6	Nm
Weight	typical	2	g

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C; $V_R = V_{RRM}$		20	mA
	T_{VJ} = 100°C; $V_R = V_{RRM}$		50	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.52	V
	I_F = 15 A; T_{VJ} = 25°C		0.56	V
	I_F = 30 A; T_{VJ} = 125°C		0.69	V
R_{thJC}			1.1	K/W
R_{thCH}	(Version B only)	0.5		K/W

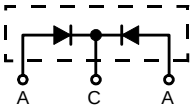
Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0%
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, test conditions and dimensions.

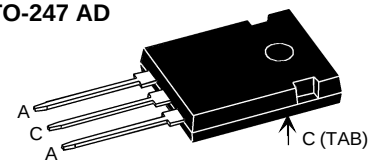
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x20 A
V_{RRM} = 60 V
V_F = 0.50 V

V_{RSM} V	V_{RRM} V	Type
60	60	DSSK 40-006B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	20	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5; per device	40	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	350	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	150	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		20	mA
	T_{VJ} = 100°C V_R = V_{RRM}		175	mA
V_F	I_F = 20 A; T_{VJ} = 125°C		0.50	V
	I_F = 20 A; T_{VJ} = 25°C		0.53	V
	I_F = 40 A; T_{VJ} = 125 °C		0.60	V
R_{thJC}			1.1	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

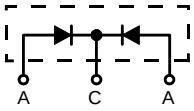
Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

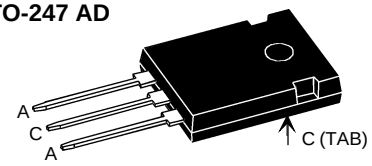
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x40 A
V_{RRM} = 60 V
V_F = 0.51 V

V_{RSM} V	V_{RRM} V	Type
60	60	DSSK 80-006B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 120°C; rectangular, d = 0.5	40	A
I_{FAV}	T_C = 120°C; rectangular, d = 0.5; per device	80	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	900	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A = 1.5 • V_{RRM} typ.; f = 10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	155	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		40	mA
	T_{VJ} = 100°C V_R = V_{RRM}		200	mA
V_F	I_F = 40 A; T_{VJ} = 125°C		0.51	V
	I_F = 40 A; T_{VJ} = 25°C		0.55	V
	I_F = 80 A; T_{VJ} = 125°C		0.74	V
R_{thJC}			0.8	K/W
R_{thCH}		0.25		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

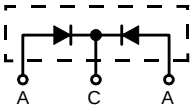
IXYS reserves the right to change limits, Conditions and dimensions.

600

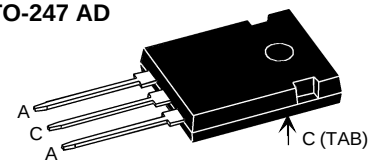
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x20 A
V_{RRM} = 80 V
V_F = 0.57 V

V_{RSM} V	V_{RRM} V	Type
80	80	DSSK 40-008B



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5	20	A
I_{FAV}	T_C = 130°C; rectangular, d = 0.5; per device	40	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	660	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+150	°C
T_{VJM}		150	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	115	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		20	mA
	T_{VJ} = 100°C V_R = V_{RRM}		150	mA
V_F	I_F = 20 A; T_{VJ} = 125°C		0.57	V
	I_F = 20 A; T_{VJ} = 25°C		0.62	V
	I_F = 40 A; T_{VJ} = 125 °C		0.67	V
R_{thJC}			1.1	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

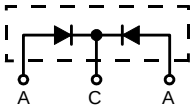
IXYS reserves the right to change limits, Conditions and dimensions.

007

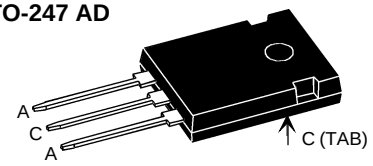
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x35 A
V_{RRM} = 80 V
V_F = 0.66 V

V_{RSM} V	V_{RRM} V	Type
80	80	DSSK 70-008A



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 150°C; rectangular, d = 0.5	35	A
I_{FAV}	T_C = 150°C; rectangular, d = 0.5; per device	70	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	700	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	190	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		4	mA
	T_{VJ} = 125°C V_R = V_{RRM}		10	mA
V_F	I_F = 35 A; T_{VJ} = 125°C		0.66	V
	I_F = 35 A; T_{VJ} = 25°C		0.77	V
	I_F = 70 A; T_{VJ} = 125 °C		0.79	V
R_{thJC}			0.8	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

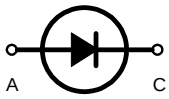
Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

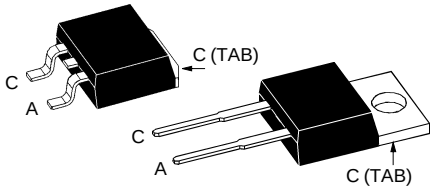
Power Schottky Rectifier

I_{FAV} = 10 A
V_{RRM} = 100 V
V_F = 0.65 V

V_{RSM} V	V_{RRM} V	Type	
100	100	DSS 10-01A	DSS 10-01AS



TO-263 AB (AS-Type)
TO-220 AC (A-Type)



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	10	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	120	A
E_{AS}	I_{AS} = 8 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	7	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	0.8	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque (A-Type only)	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 125°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.65	V
	I_F = 10 A; T_{VJ} = 25°C		0.80	V
	I_F = 20 A; T_{VJ} = 125 °C		0.77	V
R_{thJC}			1.7	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

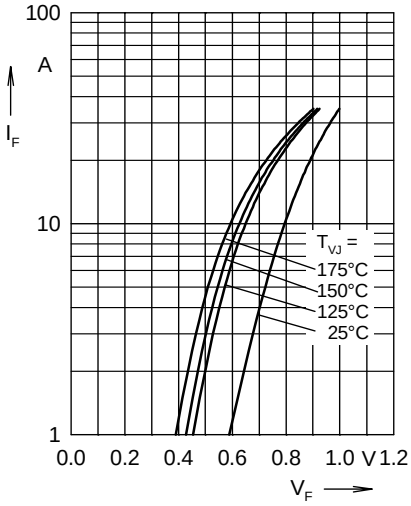


Fig. 1 Maximum forward voltage drop characteristics

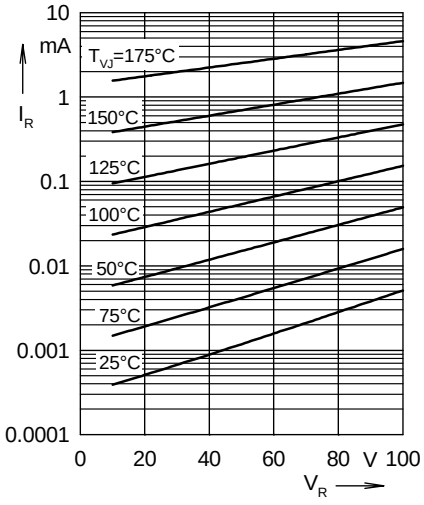


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

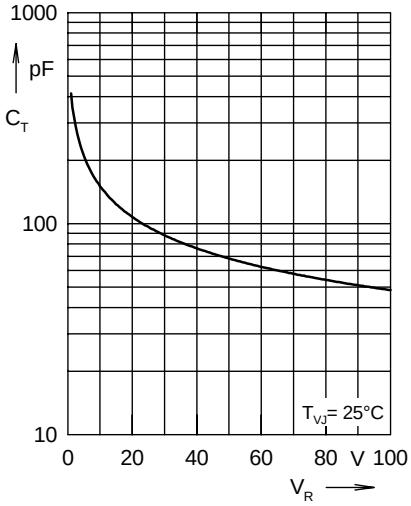


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

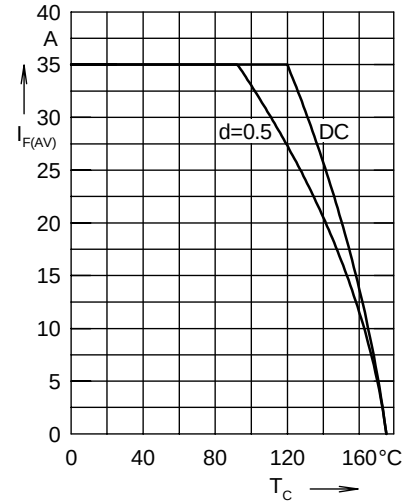


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

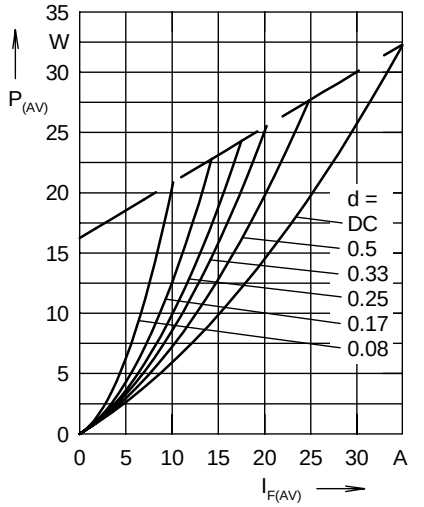


Fig. 5 Forward power loss characteristics

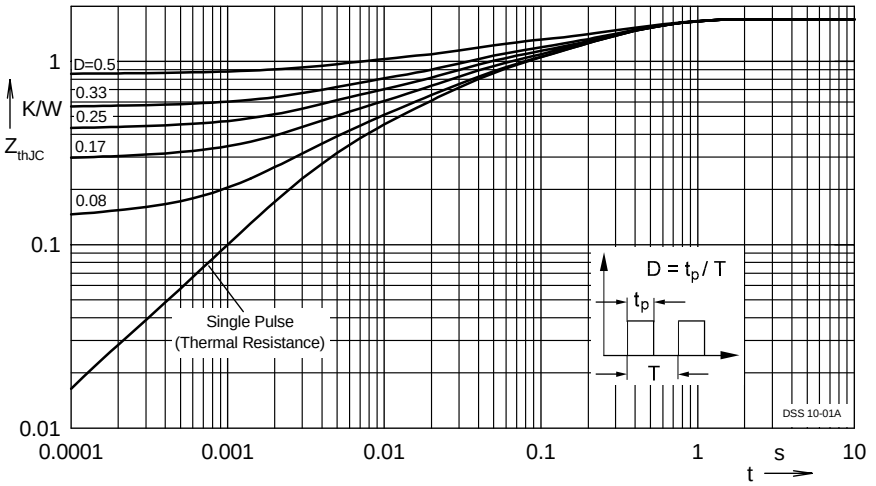


Fig. 6 Transient thermal impedance junction to case at various duty cycles

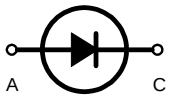
Note: All curves are per diode

007

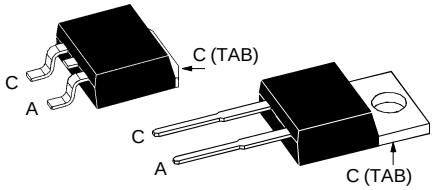
Power Schottky Rectifier

I_{FAV} = 16 A
V_{RRM} = 100 V
V_F = 0.64 V

V_{RSM} V	V_{RRM} V	Type	
100	100	DSS 16-01A	DSS 16-01AS



TO-263 AB (AS-Type)
TO-220 AC (A-Type)



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5	16	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sinev	230	A
E_{AS}	I_{AS} = 9.5 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	10	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque (A-Type only)	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.64	V
	I_F = 15 A; T_{VJ} = 25°C		0.79	V
	I_F = 30 A; T_{VJ} = 125 °C		0.76	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

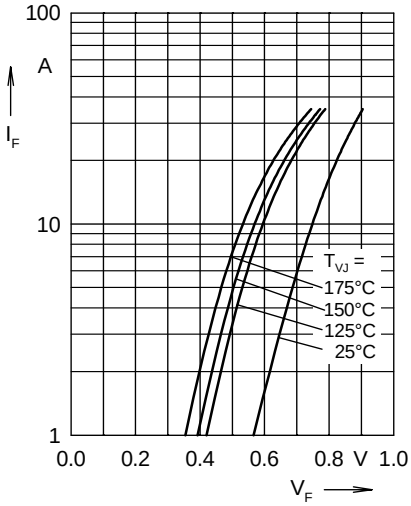


Fig. 1 Maximum forward voltage drop characteristics

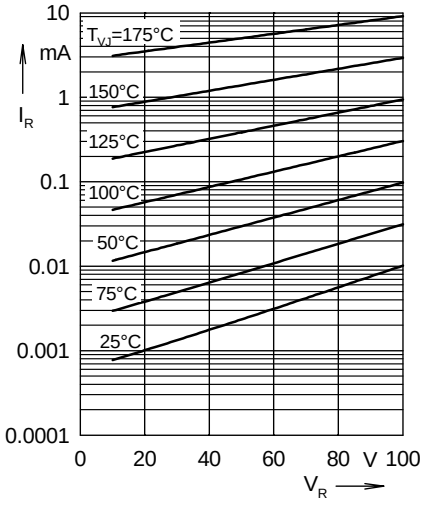


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

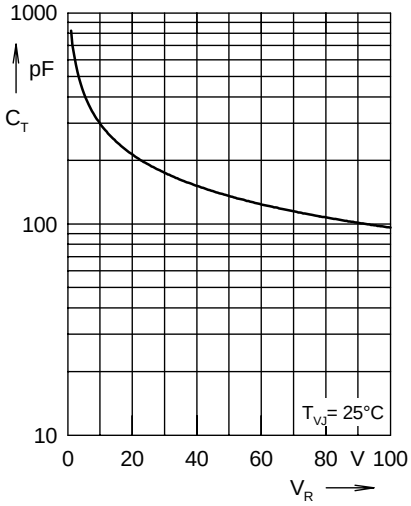


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

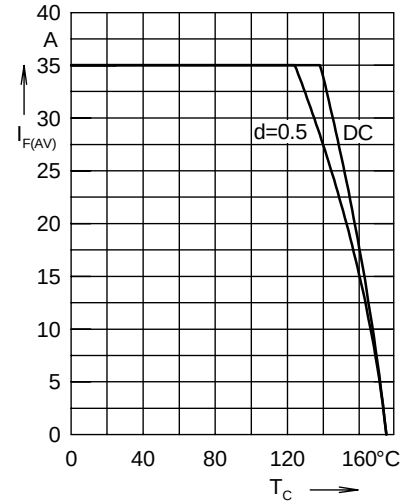


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

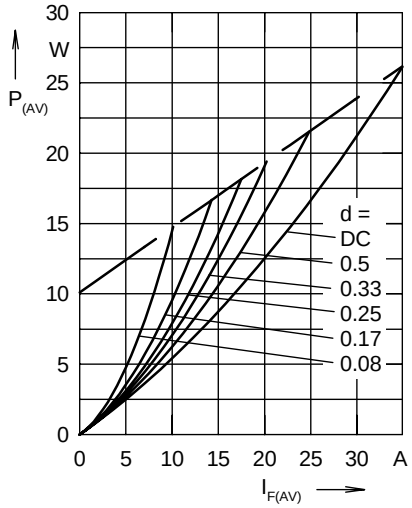


Fig. 5 Forward power loss characteristics

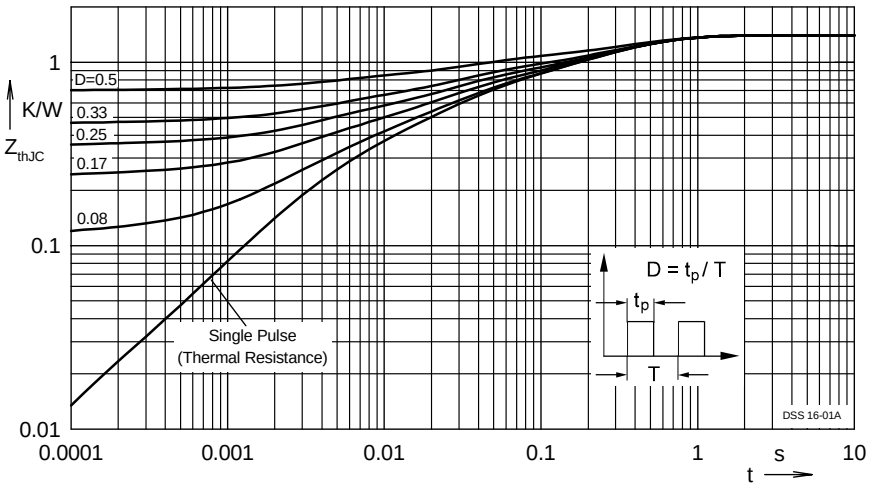


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

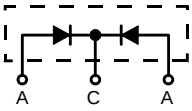
007

Power Schottky Rectifier
with common cathode

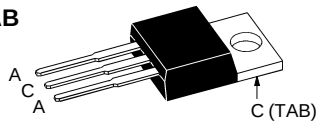
I_{FAV} = 2x8 A
V_{RRM} = 100 V
V_F = 0.65 V

Preliminary Data

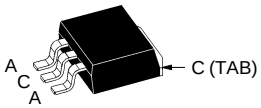
V_{RSM} V	V_{RRM} V	Type
100	100	DSSK 16-01A
100	100	DSSK 16-01AS



TO-220 AB
(A-Type)



TO-263 AB
(AS-Type)



A = Anode, C = Cathode , TAB = Cathode

Symbol	Test Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 165°C; rectangular, d = 0.5	8	A
I_{FAV}	T_C = 165°C; rectangular, d = 0.5; per device	16	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	120	A
E_{AS}	I_{AS} = 8 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	7	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	0.8	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque (Version A only)	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Test Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 125°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.65	V
	I_F = 10 A; T_{VJ} = 25°C		0.80	V
	I_F = 20 A; T_{VJ} = 125 °C		0.77	V
R_{thJC}			1.7	K/W
R_{thCH}	(Version A only)	0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, test conditions and dimensions.

024

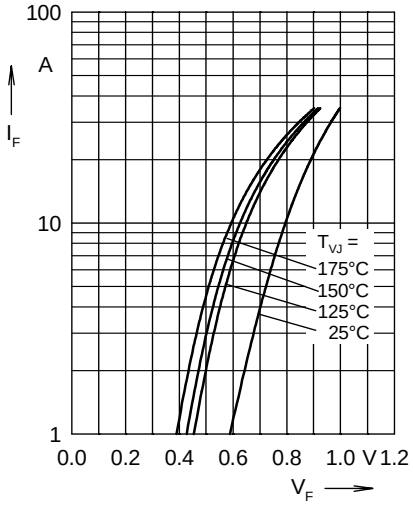


Fig. 1 Maximum forward voltage drop characteristics

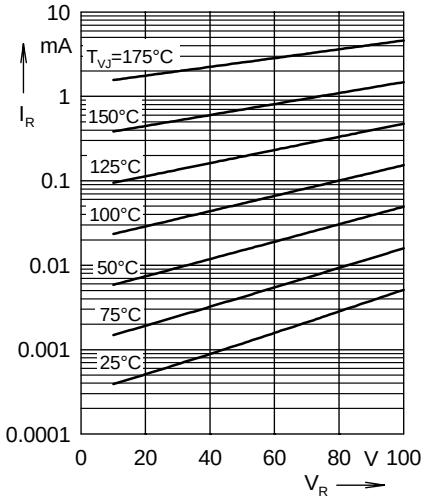


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

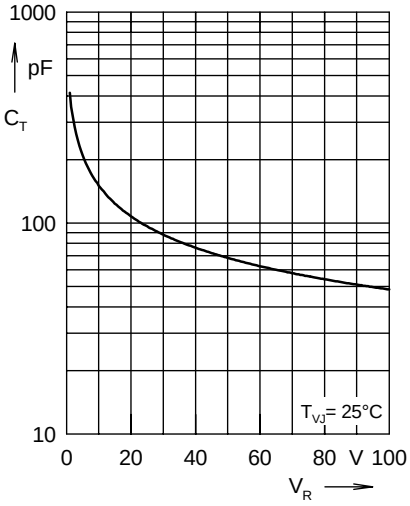


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

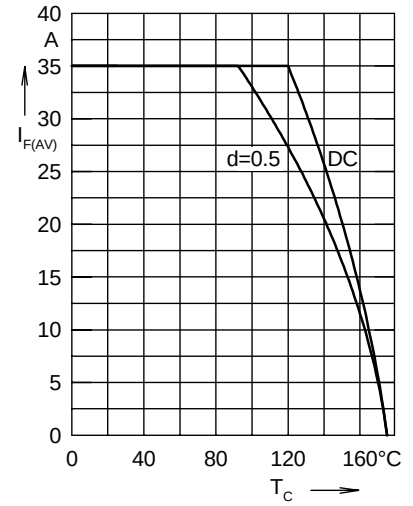


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

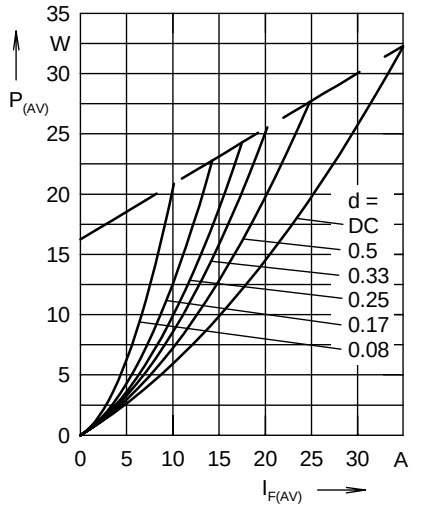


Fig. 5 Forward power loss characteristics

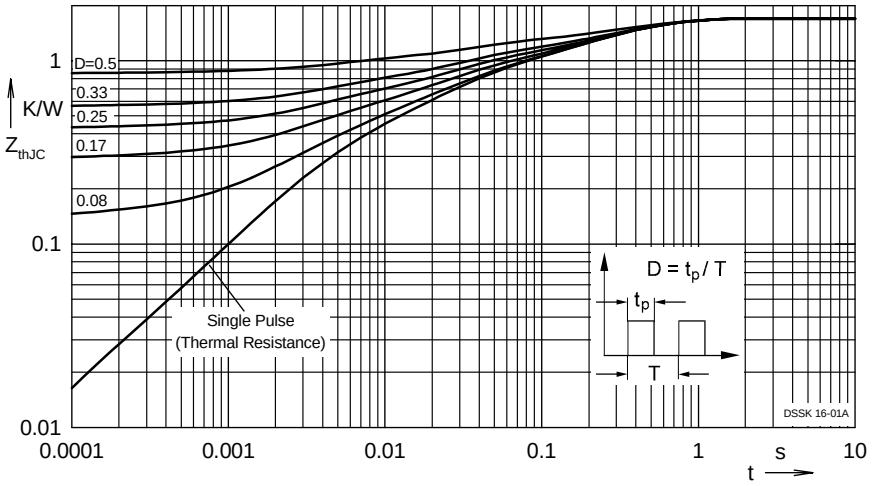


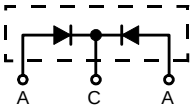
Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per Diode

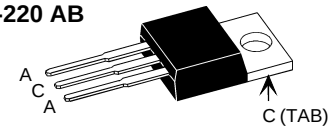
Power Schottky Rectifier
with common cathode

I_{FAV} = 15 A
V_{RRM} = 100 V
V_F = 0.64 V

V_{RSM} V	V_{RRM} V	Type	
100	100	DSSK 28-01A	DSSK 28-01AS



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5	2x15	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sinev	230	A
E_{AS}	I_{AS} = 9.5 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	10	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.64	V
	I_F = 15 A; T_{VJ} = 25°C		0.79	V
	I_F = 30 A; T_{VJ} = 125 °C		0.76	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

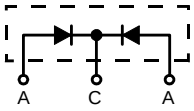
IXYS reserves the right to change limits, Conditions and dimensions.

007

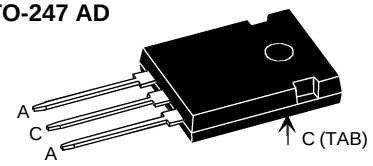
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x15 A
V_{RRM} = 100 V
V_F = 0.64 V

V_{RSM} V	V_{RRM} V	Type
100	100	DSSK 30-01A



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		50	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5	15	A
I_{FAV}	T_C = 160°C; rectangular, d = 0.5; per device	30	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	230	A
E_{AS}	I_{AS} = 9.5 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	10	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.64	V
	I_F = 15 A; T_{VJ} = 25°C		0.78	V
	I_F = 30 A; T_{VJ} = 125°C		0.74	V
R_{thJC}			1.4	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

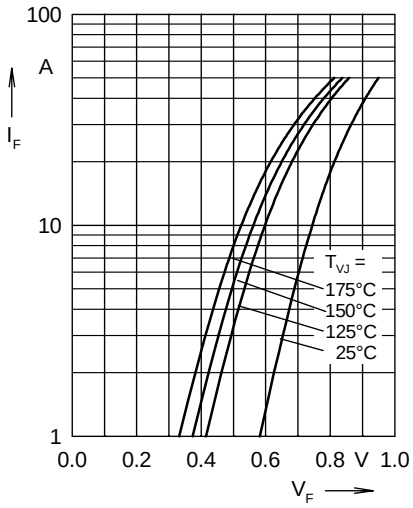


Fig. 1 Maximum forward voltage drop characteristics

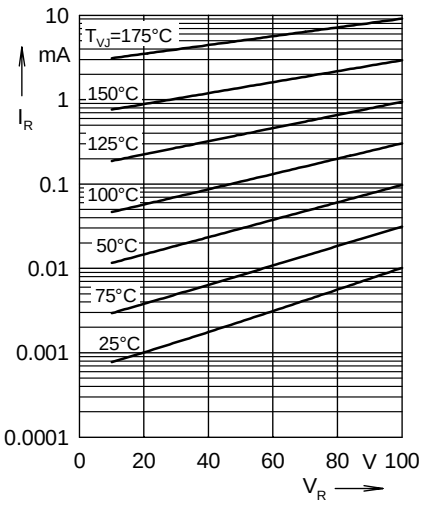


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

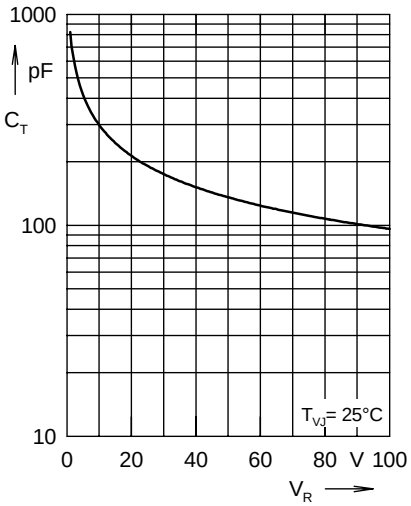


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

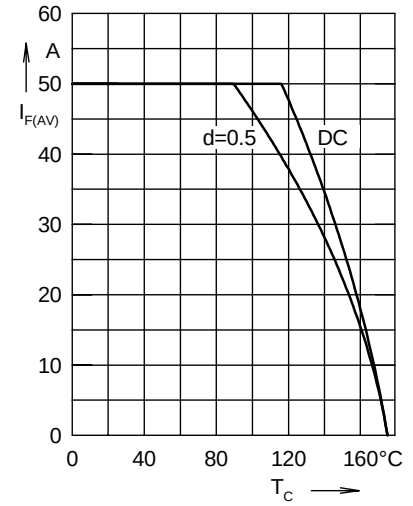


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

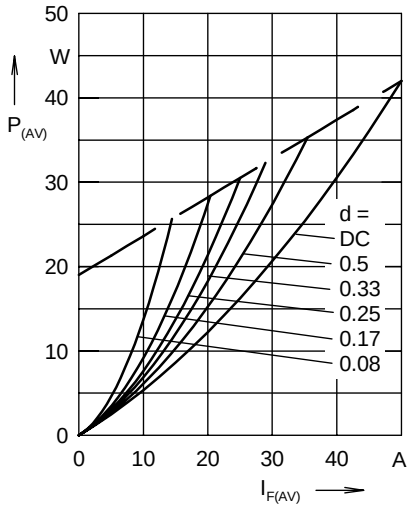


Fig. 5 Forward power loss characteristics

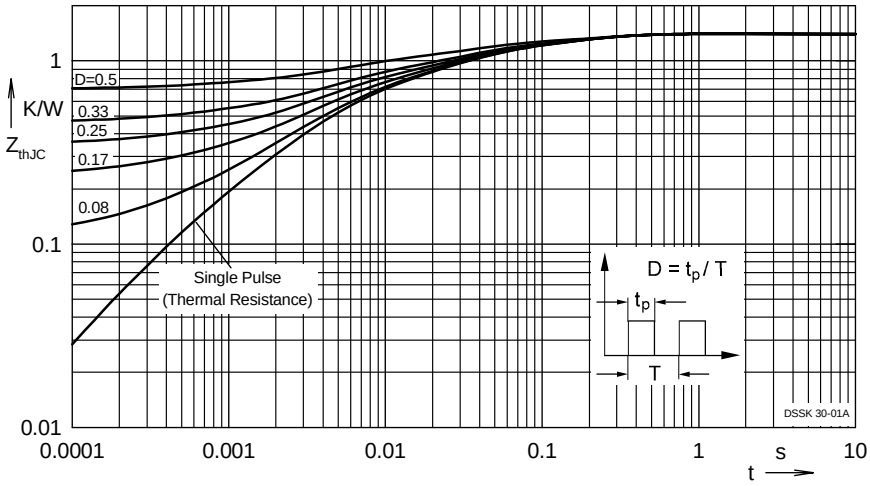


Fig. 6 Transient thermal impedance junction to case at various duty cycles

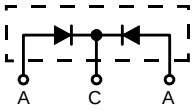
Note: All curves are per diode

007

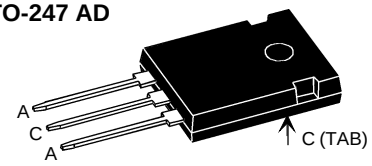
Power Schottky Rectifier
with common cathode

I_{FAV} = 2x25 A
V_{RRM} = 100 V
V_F = 0.65 V

V_{RSM} V	V_{RRM} V	Type
100	100	DSSK 50-01A



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5	25	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5; per device	50	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	450	A
E_{AS}	I_{AS} = 11 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	13	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.1	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	135	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		1	mA
	T_{VJ} = 125°C V_R = V_{RRM}		10	mA
V_F	I_F = 25 A; T_{VJ} = 125°C		0.65	V
	I_F = 25 A; T_{VJ} = 25°C		0.80	V
	I_F = 50 A; T_{VJ} = 125°C		0.77	V
R_{thJC}			1.1	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

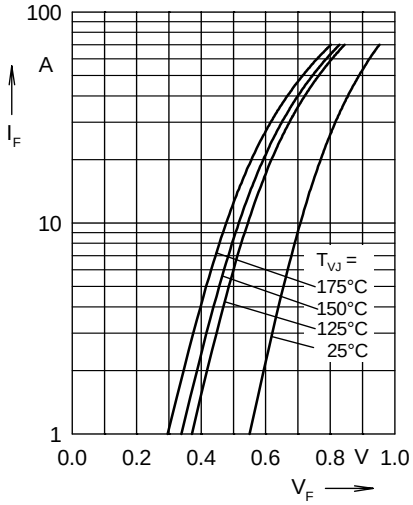


Fig. 1 Maximum forward voltage drop characteristics

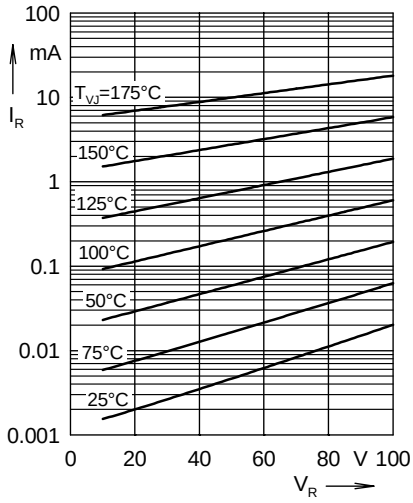


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

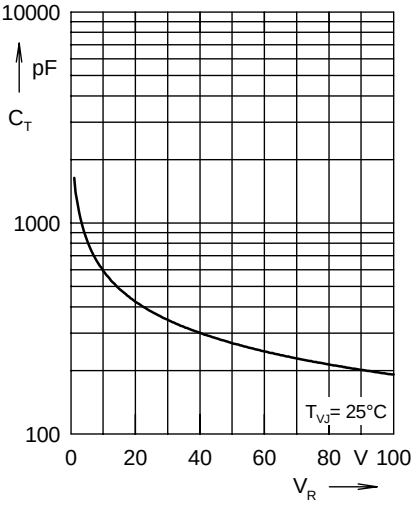


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

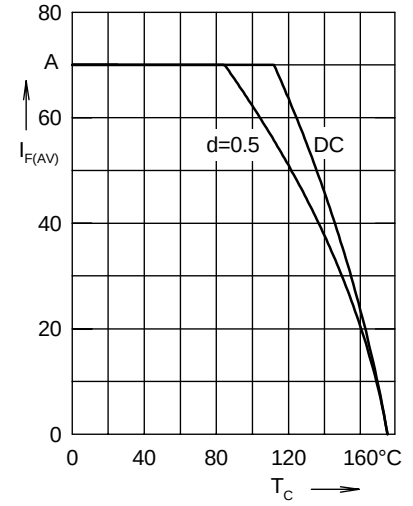


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

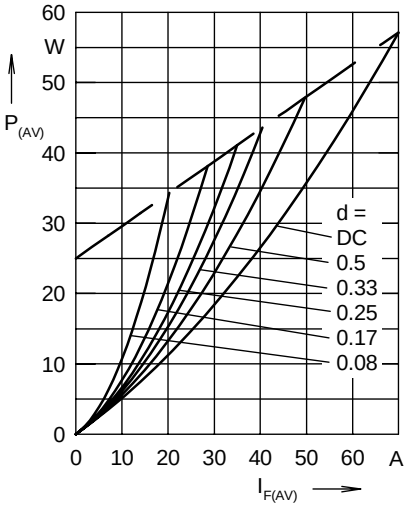


Fig. 5 Forward power loss characteristics

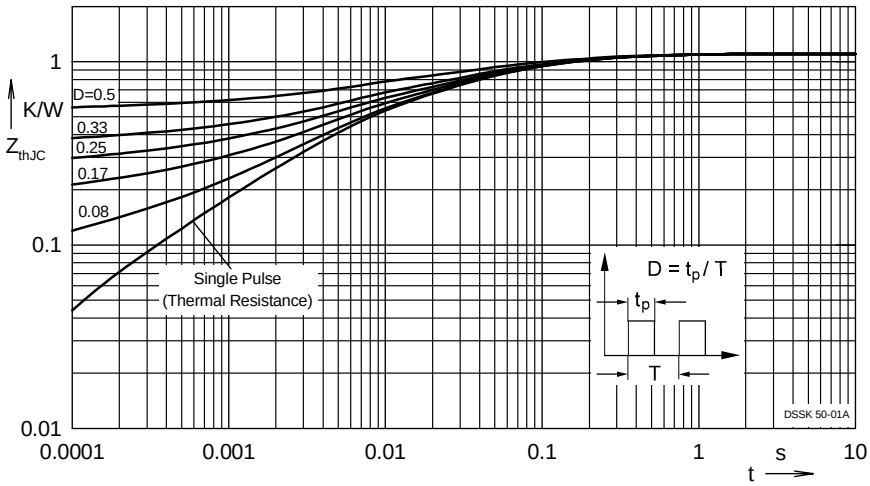


Fig. 6 Transient thermal impedance junction to case at various duty cycles

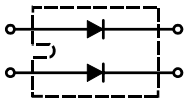
Note: All curves are per diode

007

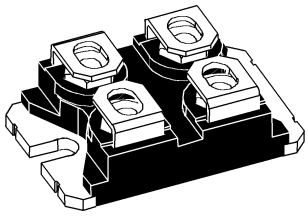
Power Schottky Rectifier

I_{FAV} = 2x40 A
V_{RRM} = 100 V
V_F = 0.70 V

V_{RSM} V	V_{RRM} V	Type
100	100	DSS 2x41-01A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAVM}	T_C = 110°C; rectangular, d = 0.5	40	A
I_{FAVM}	T_C = 110°C; rectangular, d = 0.5; per device	80	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	450	A
E_{AS}	I_{AS} = 11 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	13	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.1	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	115	W
V_{ISOL}	50/60 Hz, RMS I_{ISOL} ≤ 1 mA	2500	V~
M_d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		1	mA
	T_{VJ} = 125°C V_R = V_{RRM}		10	mA
V_F	I_F = 40 A; T_{VJ} = 125°C		0.70	V
	I_F = 40 A; T_{VJ} = 25°C		0.83	V
	I_F = 80 A; T_{VJ} = 125°C		0.86	V
R_{thJC}			1.1	K/W
R_{thCH}		0.1		K/W

Features
- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent Schottky diodes in 1 package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

824

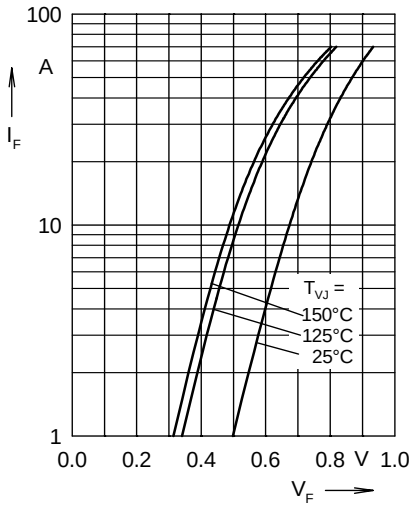


Fig. 1 Maximum forward voltage drop characteristics

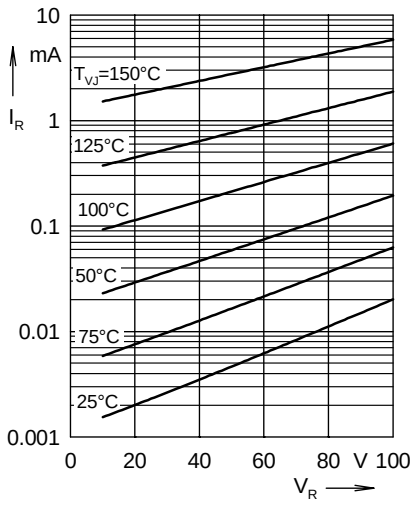


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

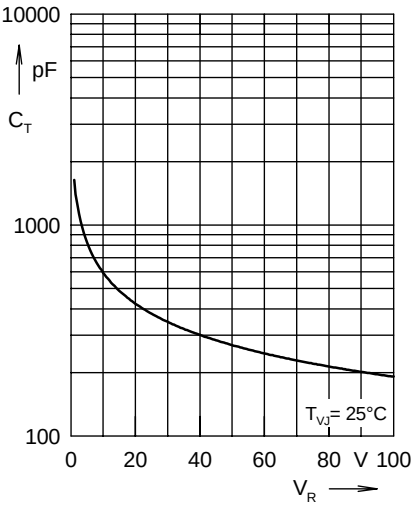


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

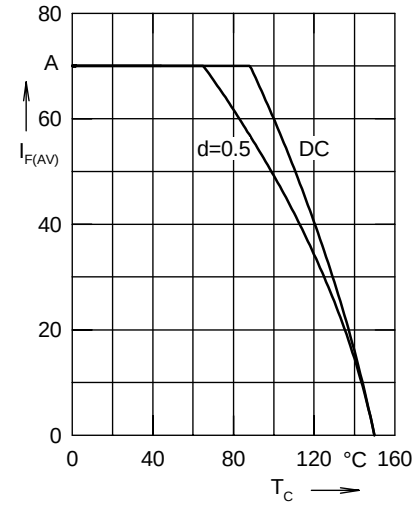


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

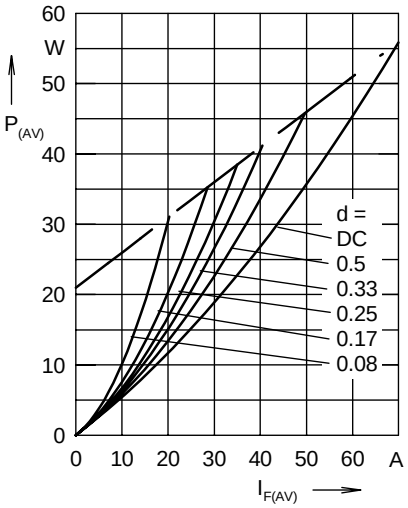


Fig. 5 Forward power loss characteristics

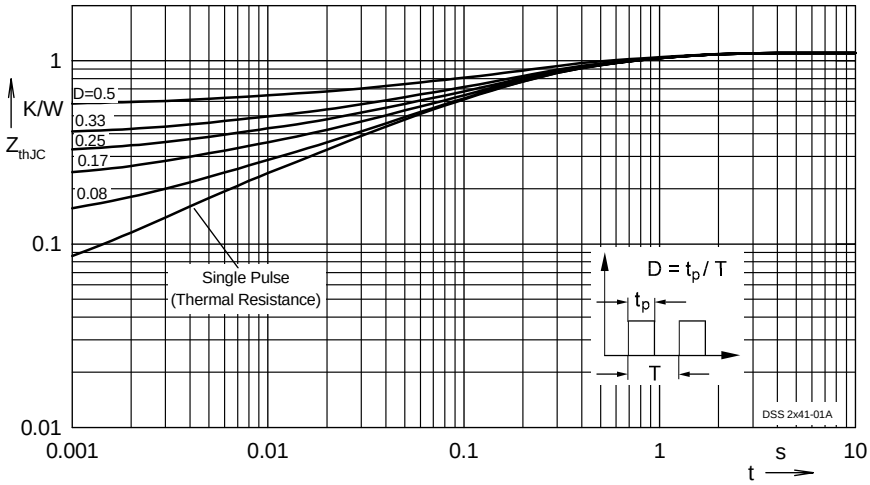


Fig. 6 Transient thermal impedance junction to case at various duty cycles

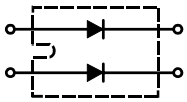
Note: All curves are per diode

824

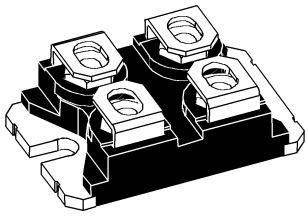
Power Schottky Rectifier

I_{FAV} = 2x60 A
V_{RRM} = 100 V
V_F = 0.73 V

V_{RSM} V	V_{RRM} V	Type
100	100	DSS 2x61-01A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		100	A
I_{FAVM}	T_C = 105°C; rectangular, d = 0.5	60	A
I_{FAVM}	T_C = 105°C; rectangular, d = 0.5; per device	120	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	700	A
E_{AS}	I_{AS} = 12 A; L = 180 µH; TVJ = 25°C; non repetitive	16	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.2	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	150	W
V_{ISOL}	50/60 Hz, RMS I_{ISOL} ≤ 1 mA	2500	V~
M_d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		2	mA
	T_{VJ} = 125°C V_R = V_{RRM}		20	mA
V_F	I_F = 60 A; T_{VJ} = 125°C		0.73	V
	I_F = 60 A; T_{VJ} = 25°C		0.86	V
	I_F = 120 A; T_{VJ} = 125°C		0.93	V
R_{thJC}			0.8	K/W
R_{thCH}		0.1		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

Features
- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent Schottky diodes in 1 package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

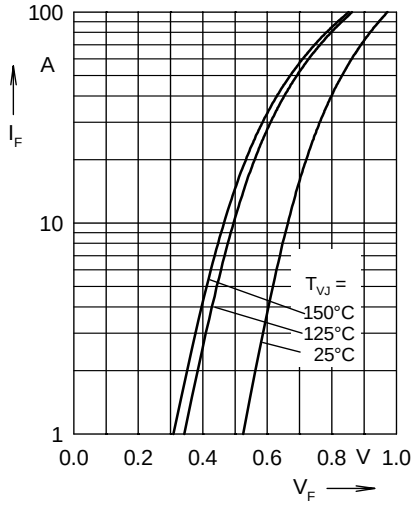


Fig. 1 Maximum forward voltage drop characteristics

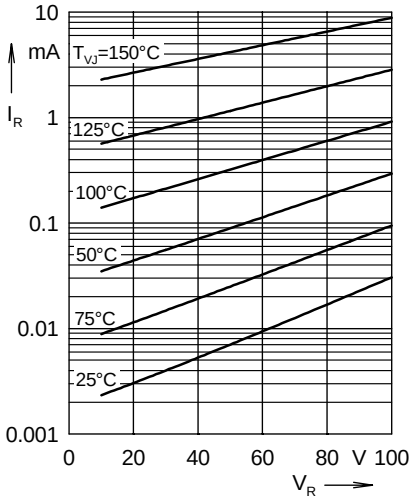


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

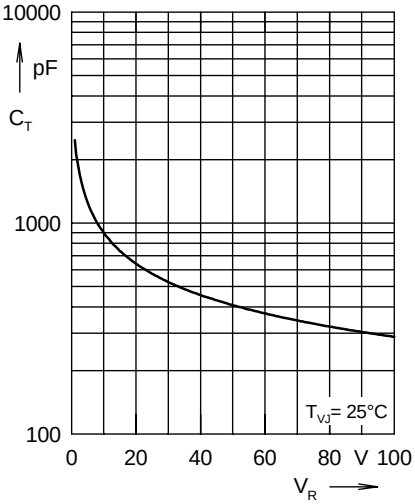


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

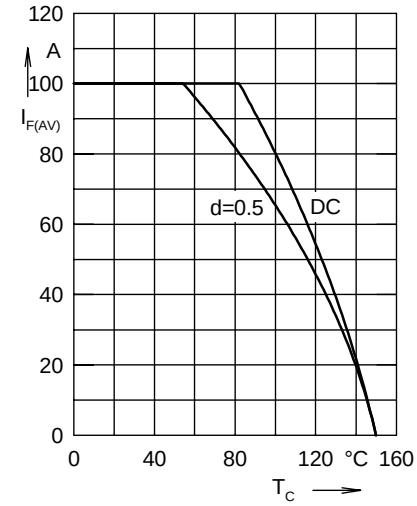


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

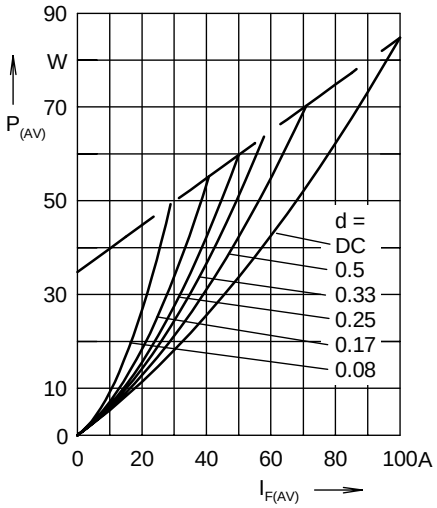


Fig. 5 Forward power loss characteristics

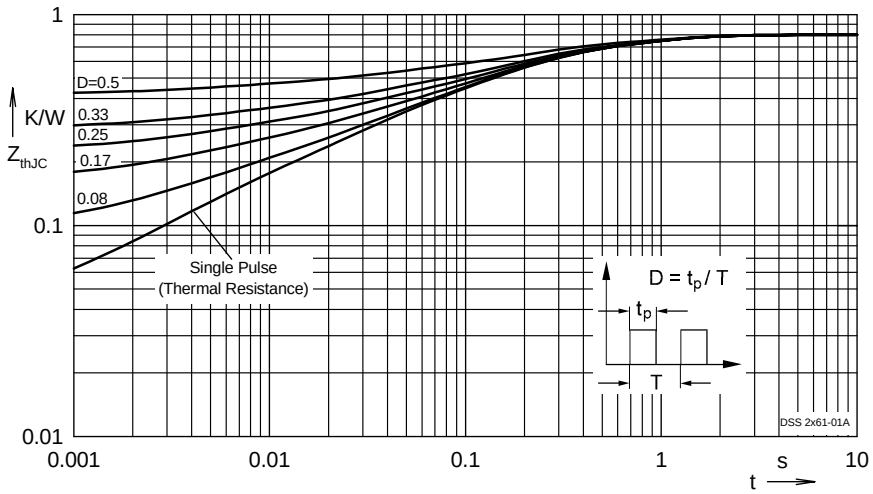


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

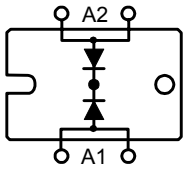
824

Power Schottky Rectifier

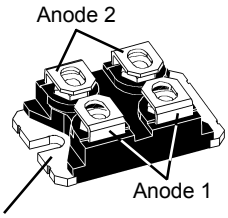
Non isolated

I_{FAVM} = 2x160 A
V_{RRM} = 100 V
V_F = 0.80 V

V_{RSM} V	V_{RRM} V	Type
100	100	DSS 2x160-01A



miniBLOC, SOT-227 B



Common cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		200	A
I_{FAVM}	T_C = 95°C; rectangular, d = 0.5	160	A
I_{FAVM}	T_C = 95°C; rectangular, d = 0.5; per device	320	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	1400	A
E_{AS}	I_{AS} = 17 A; L = 180 µH; T_{VJ} = 25°C; non repetitive	31	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	1.7	A
$(dv/dt)_{cr}$		5000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	410	W
M_d	mounting torque (M4)	1.1-1.5/9-13	Nm/lb.in.
	terminal connection torque (M4)	1.1-1.5/9-13	Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		4	mA
	T_{VJ} = 125°C V_R = V_{RRM}		40	mA
V_F	I_F = 160 A; T_{VJ} =125°C		0.80	V
	T_{VJ} = 25°C		0.92	V
	I_F = 320 A; T_{VJ} =125°C		1.06	V
R_{thJC}			0.30	K/W
R_{thCH}		0.15		K/W

Features
- International standard package miniBLOC
- Epoxy meets UL 94V-0
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

824

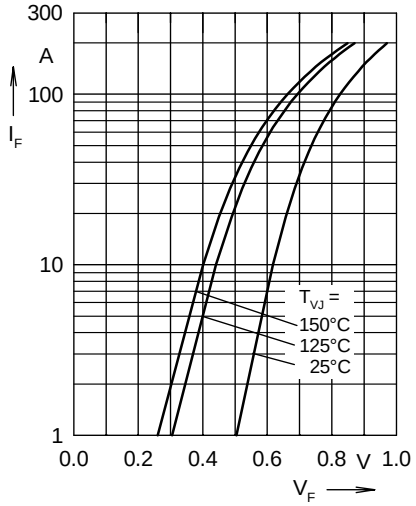


Fig. 1 Maximum forward voltage drop characteristics

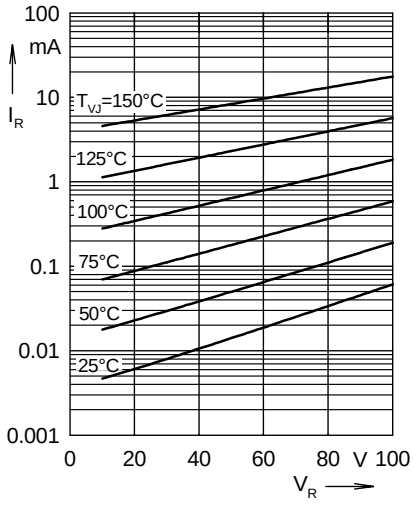


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

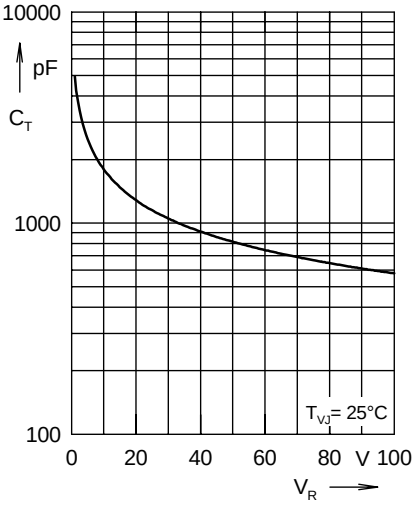


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

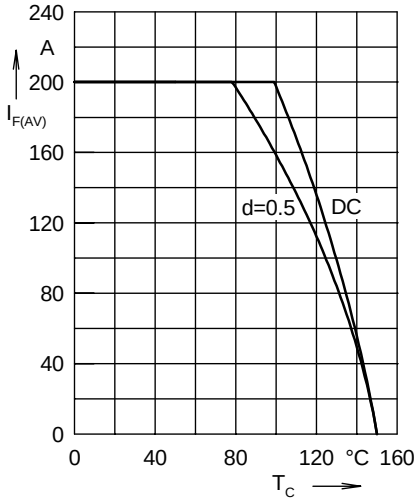


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

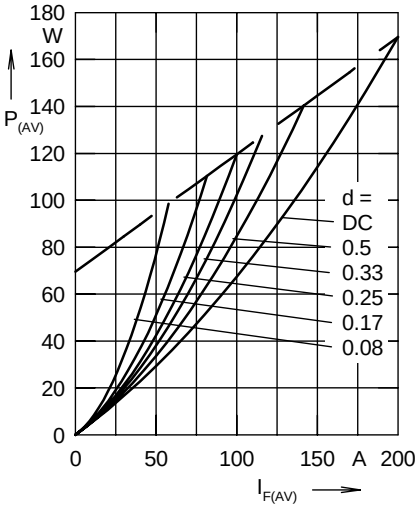


Fig. 5 Forward power loss characteristics

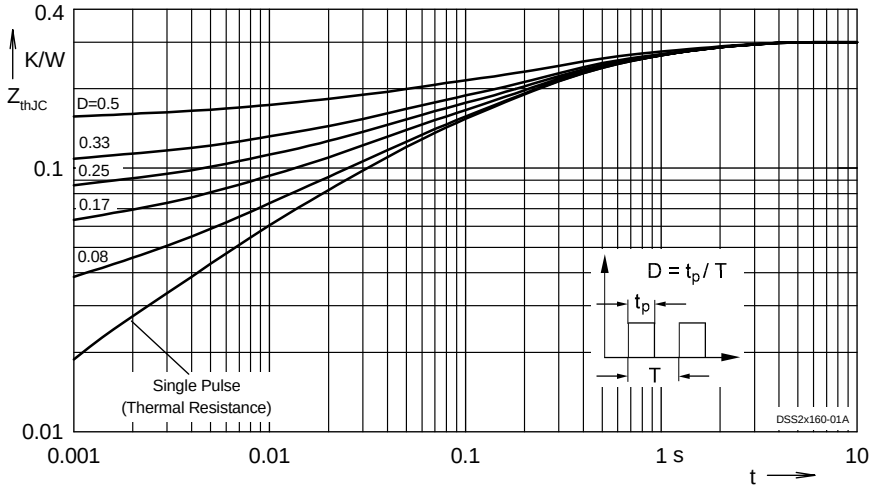


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

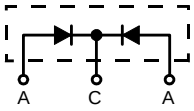
829

Power Schottky Rectifier
with common cathode

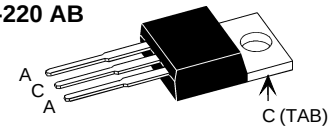
I_{FAV} = 2x10 A
V_{RRM} = 130 V
V_F = 0.65 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
130	130	DSSK 20-013A
150	150	DSSK 20-015A



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 165°C; rectangular, d = 0.5	10	A
I_{FAV}	T_C = 165°C; rectangular, d = 0.5; per device	20	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	200	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		18000	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	105	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.5	mA
	T_{VJ} = 125°C V_R = V_{RRM}		5.0	mA
V_F	I_F = 10 A; T_{VJ} = 125°C		0.65	V
	I_F = 10 A; T_{VJ} = 25°C		0.79	V
	I_F = 20 A; T_{VJ} = 125 °C		0.72	V
R_{thJC}			1.4	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

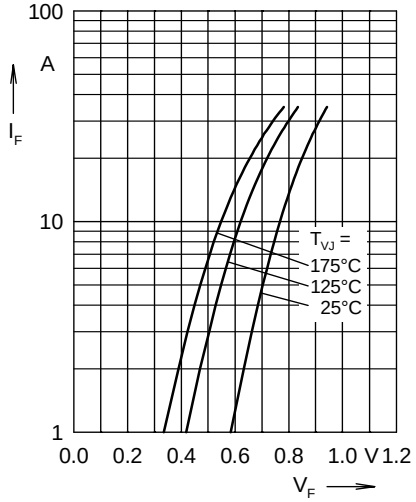


Fig. 1 Maximum forward voltage drop characteristics

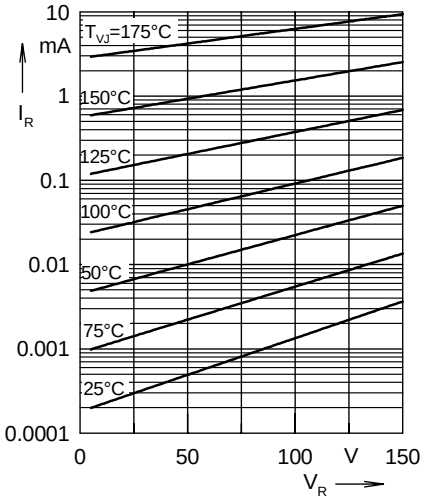


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

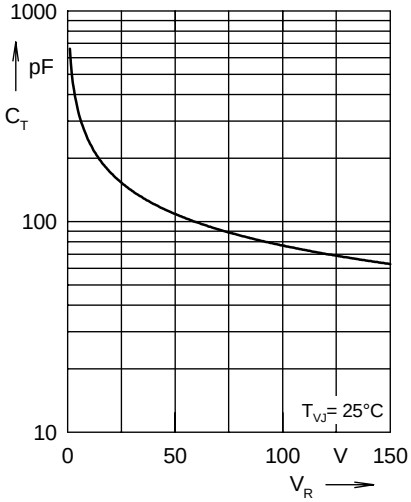


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

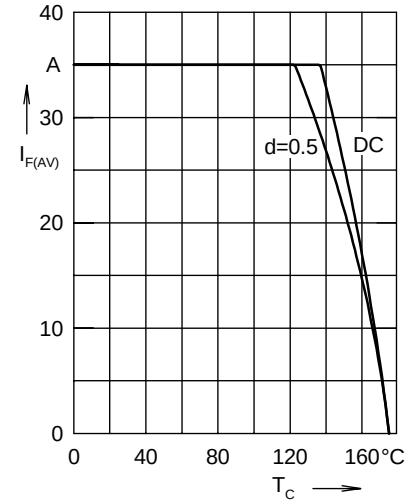


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

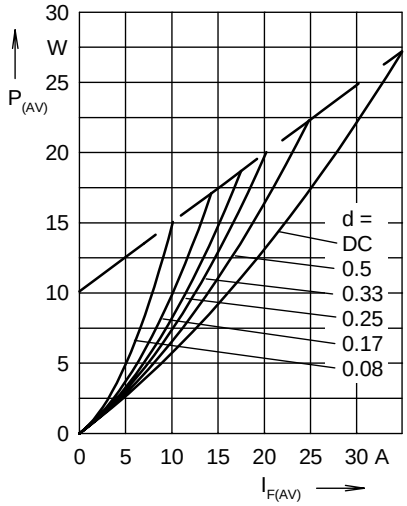


Fig. 5 Forward power loss characteristics

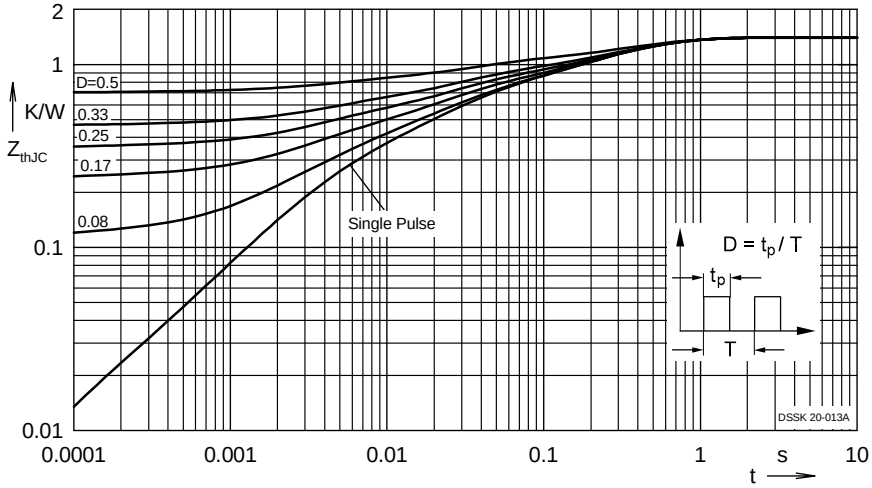


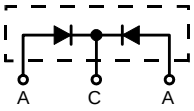
Fig. 6 Transient thermal impedance junction to case at various duty cycles

Power Schottky Rectifier
with common cathode

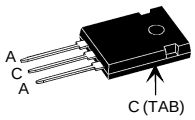
I_{FAV} = 2x30 A
V_{RRM} = 130 / 150 V
V_F = 0.69 V

Preliminary Data

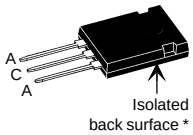
V_{RSM} V	V_{RRM} V	Type
130	130	DSSK 60-013A
150	150	DSSK 60-015A
150	150	DSSK 60-015AR



TO-247 AD
Version A



ISOPLUS 247™
Version AR



* Patent pending

C = Cathode, A = Anode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5	30	A
I_{FAV}	T_C = 155°C; rectangular, d = 0.5; per device	60	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	600	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		18000	V/ms
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	190	W
M_d	Version A: mounting torque M3	0.8...1.2	Nm
F_C	Version AR: mounting force with clip	20...120	N
V_{ISOL} *	50/60 Hz, RMS, t = 1 minute, leads-to-tab	2500	V~
Weight	typical	6	g

* Version AR only

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		2	mA
	T_{VJ} = 125°C V_R = V_{RRM}		20	mA
V_F	I_F = 30 A; T_{VJ} = 125°C		0.69	V
	I_F = 30 A; T_{VJ} = 25°C		0.83	V
	I_F = 60 A; T_{VJ} = 125°C		0.80	V
R_{thJC}			0.8	K/W
R_{thCH}		0.25		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

018

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0
- Version ..R isolated and UL registered E153432

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

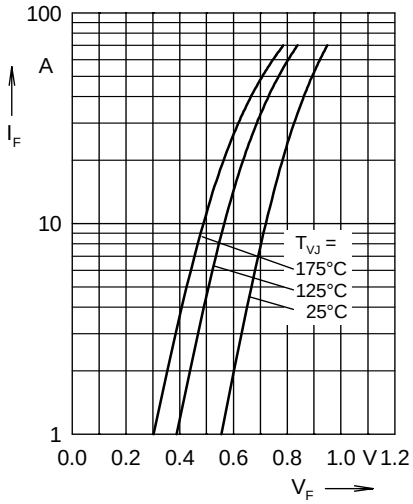


Fig. 1 Maximum forward voltage drop characteristics

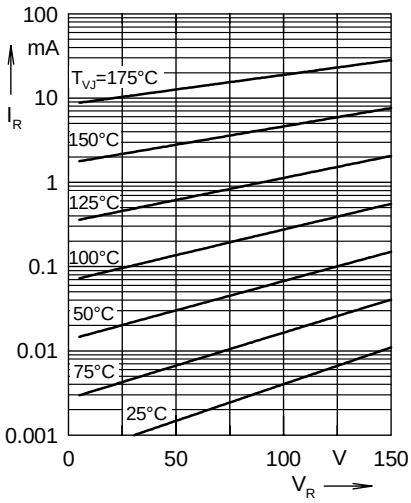


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

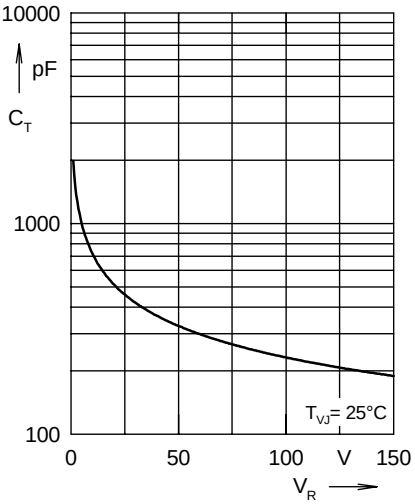


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

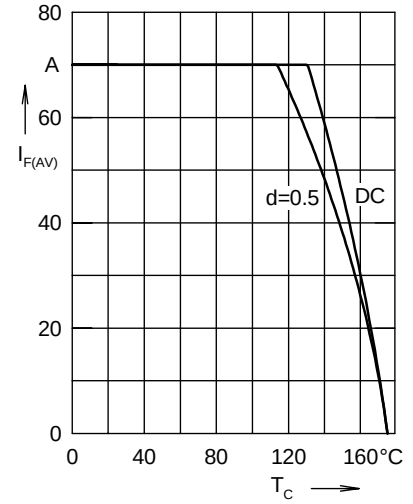


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

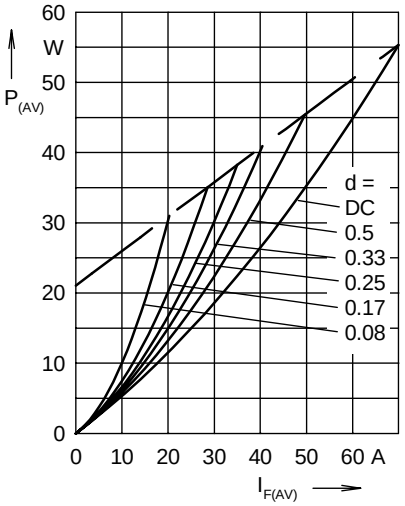


Fig. 5 Forward power loss characteristics

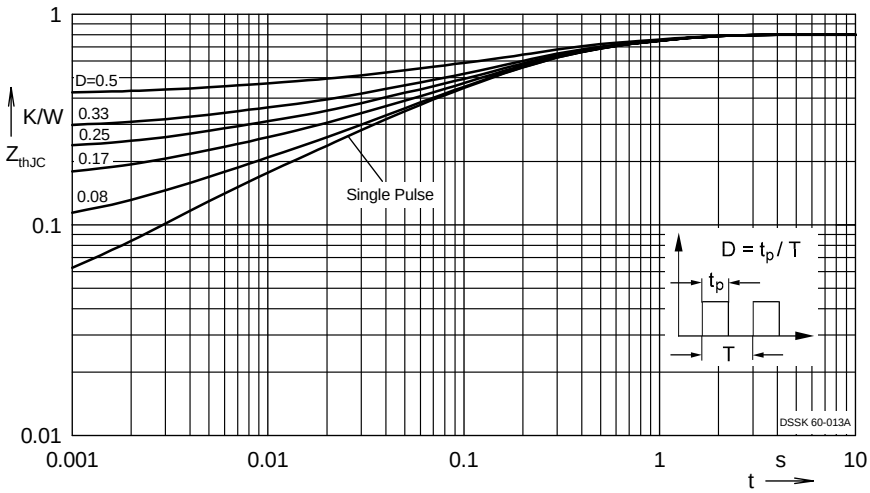


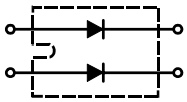
Fig. 6 Transient thermal impedance junction to case at various duty cycles

Power Schottky Rectifier

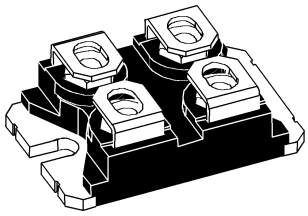
I_{FAV} = 2x100 A
V_{RRM} = 150 V
V_F = 0.78 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
150	150	DSS 2x101-015A



miniBLOC, SOT-227 B



Symbol	Conditions	Maximum Ratings	
I_{FRMS}		150	A
I_{FAVM}	T_C = 110°C; rectangular, d = 0.5	100	A
I_{FAVM}	T_C = 110°C; rectangular, d = 0.5; per device	200	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	1200	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		18000	V/µs
T_{VJ}		-40...+150	°C
T_{VJM}		150	°C
T_{stg}		-40...+150	°C
P_{tot}	T_C = 25°C	310	W
V_{ISOL}	50/60 Hz, RMS I_{ISOL} ≤ 1 mA	2500	V~
M_d	mounting torque (M4) terminal connection torque (M4)	1.1-1.5/9-13 1.1-1.5/9-13	Nm/lb.in. Nm/lb.in.
Weight	typical	30	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		4	mA
	T_{VJ} = 125°C V_R = V_{RRM}		40	mA
V_F	I_F = 100 A; T_{VJ} = 125°C		0.78	V
	I_F = 100 A; T_{VJ} = 25°C		0.90	V
	I_F = 200 A; T_{VJ} = 125°C		0.99	V
R_{thJC}			0.4	K/W
R_{thCH}		0.1		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

922

Features
- International standard package miniBLOC
- Isolation voltage 2500 V~
- UL registered E 72873
- 2 independent Schottky diodes in 1 package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

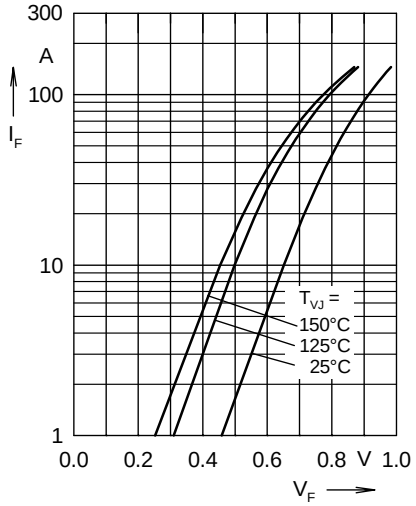


Fig. 1 Maximum forward voltage drop characteristics

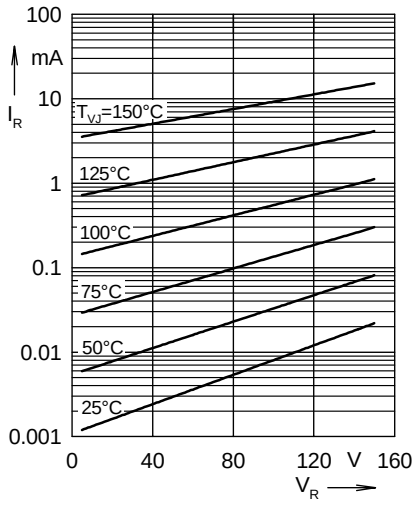


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

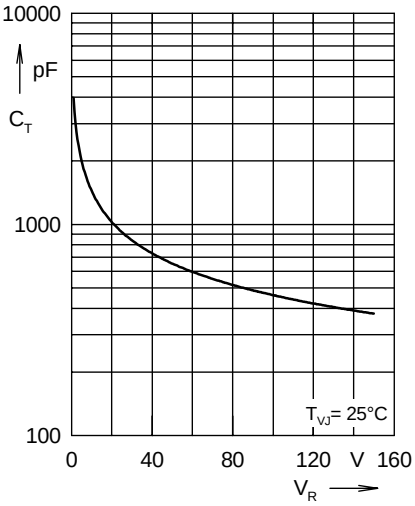


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

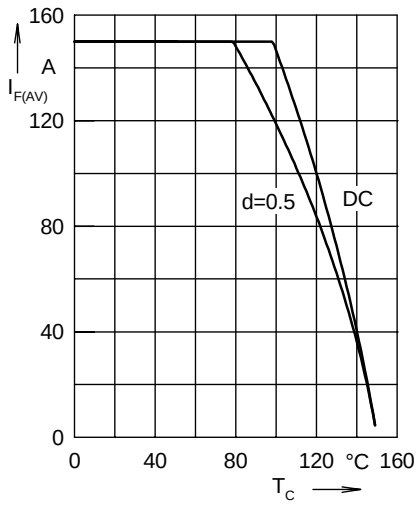


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

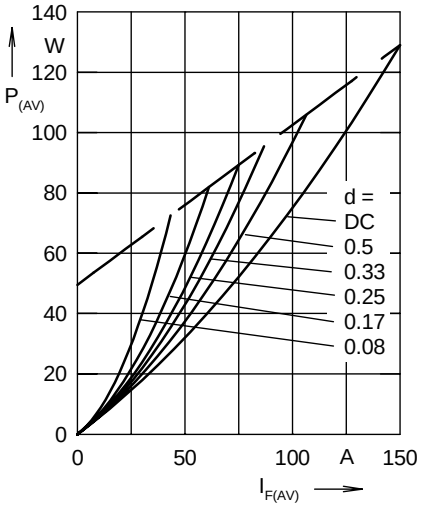


Fig. 5 Forward power loss characteristics

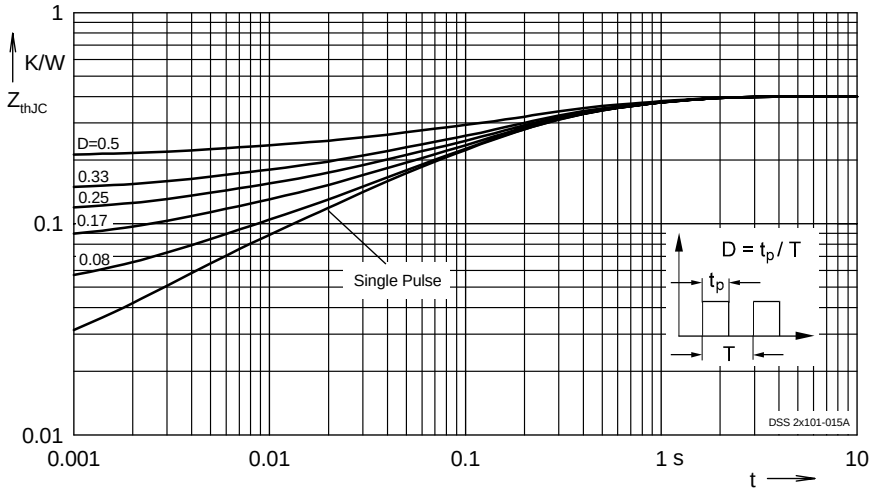


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

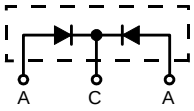
922

Power Schottky Rectifier
with common cathode

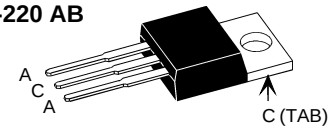
I_{FAV} = 2x5 A
V_{RRM} = 180 V
V_F = 0.62 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
180	180	DSSK 10-018A



TO-220 AB



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAV}	T_C = 165°C; rectangular, d = 0.5	5	A
I_{FAV}	T_C = 165°C; rectangular, d = 0.5; per device	10	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	120	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 100°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 5 A; T_{VJ} = 125°C		0.62	V
	I_F = 5 A; T_{VJ} = 25°C		0.78	V
	I_F = 10 A; T_{VJ} = 125°C		0.68	V
R_{thJC}			1.7	K/W
R_{thCH}		0.5		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

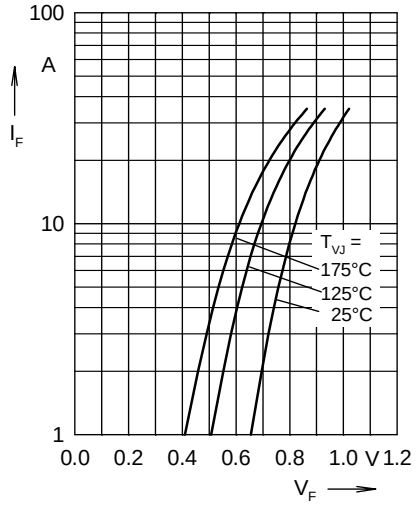


Fig. 1 Maximum forward voltage drop characteristics

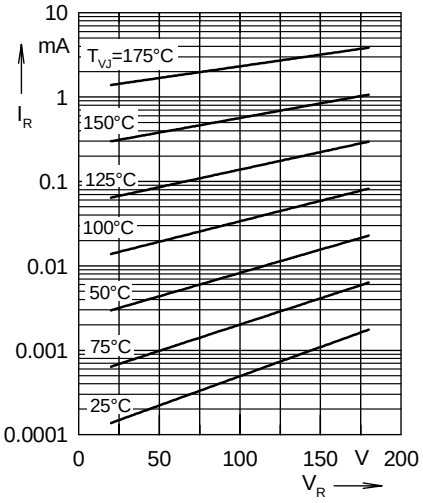


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

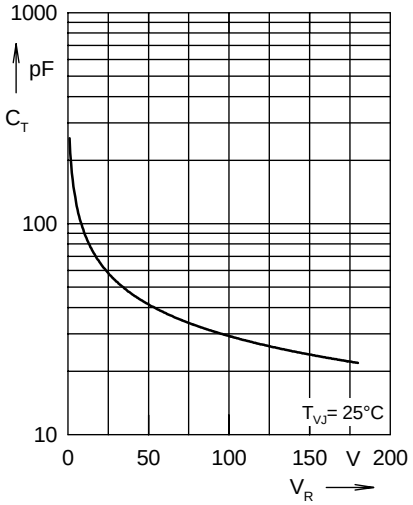


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

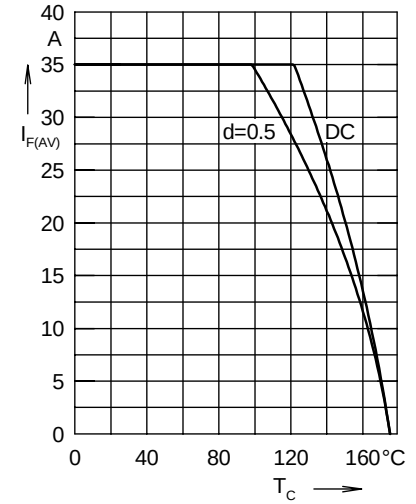


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

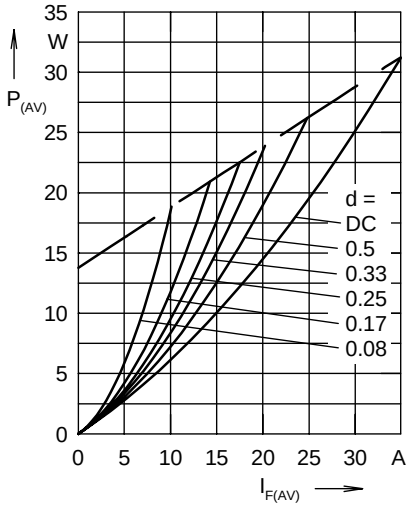


Fig. 5 Forward power loss characteristics

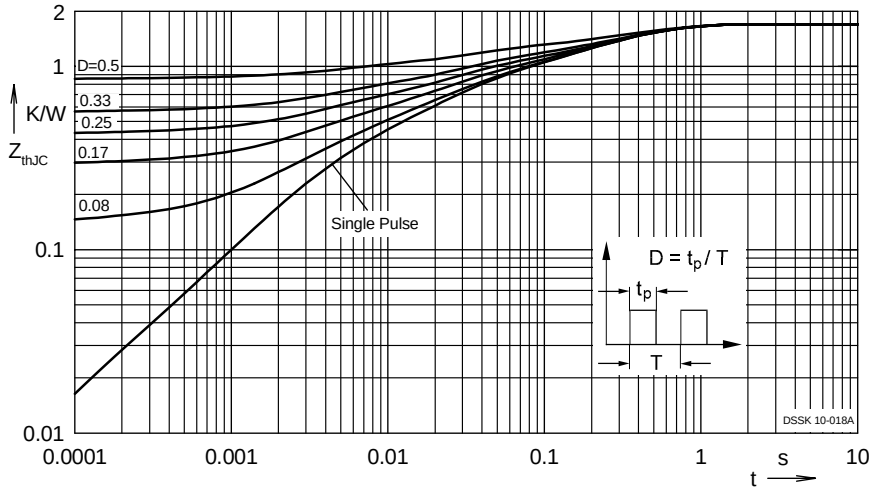


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

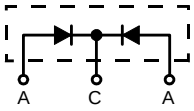
007

Power Schottky Rectifier
with common cathode

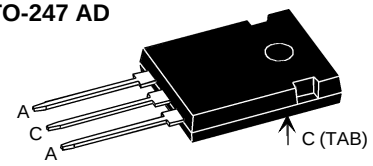
I_{FAV} = 2x15 A
V_{RRM} = 180 V
V_F = 0.72 V

Preliminary Data

V_{RSM} V	V_{RRM} V	Type
180	180	DSSK 30-018A



TO-247 AD



A = Anode, C = Cathode , TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		50	A
I_{FAV}	T_C = 150°C; rectangular, d = 0.5	15	A
I_{FAV}	T_C = 150°C; rectangular, d = 0.5; per device	30	A
I_{FSM}	T_{VJ} = 45°C; t_p = 10 ms (50 Hz), sine	120	A
E_{AS}	I_{AS} = tbd A; L = 180 µH; T_{VJ} = 25°C; non repetitive	tbd	mJ
I_{AR}	V_A =1.5 • V_{RRM} typ.; f=10 kHz; repetitive	tbd	A
$(dv/dt)_{cr}$		tbd	V/µs
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	90	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C V_R = V_{RRM}		0.3	mA
	T_{VJ} = 100°C V_R = V_{RRM}		2.5	mA
V_F	I_F = 15 A; T_{VJ} = 125°C		0.72	V
	I_F = 15 A; T_{VJ} = 25°C		0.86	V
	I_F = 30 A; T_{VJ} = 125°C		0.87	V
R_{thJC}			1.7	K/W
R_{thCH}		0.25		K/W

Features
- International standard package
- Very low V_F
- Extremely low switching losses
- Low I_{RM}-values
- Epoxy meets UL 94V-0

Applications
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Advantages
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits[1] [2] [3]
- Low noise switching
- Low losses

Dimensions see pages D2 - 87-88

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %
Data according to IEC 60747 and per diode unless otherwise specified

IXYS reserves the right to change limits, Conditions and dimensions.

007

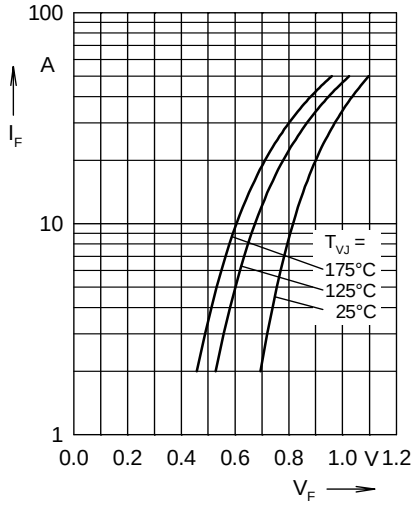


Fig. 1 Maximum forward voltage drop characteristics

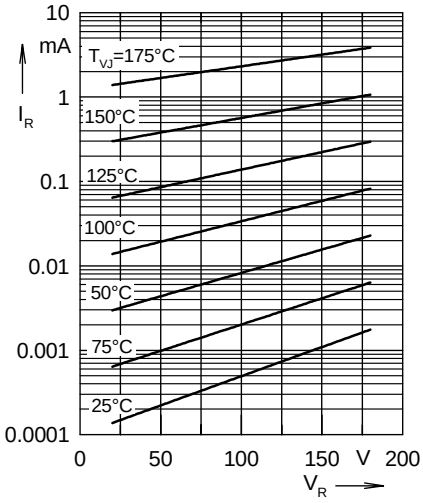


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

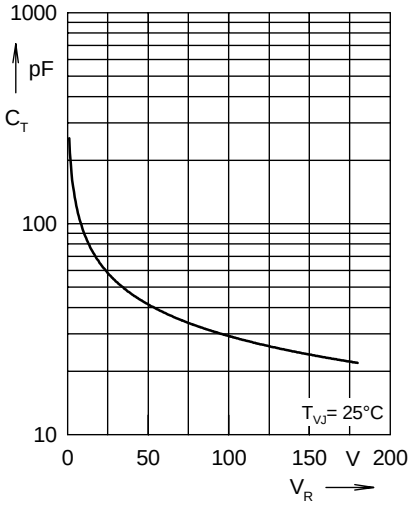


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

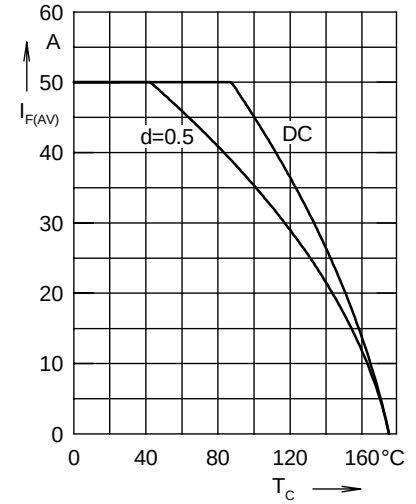


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_C

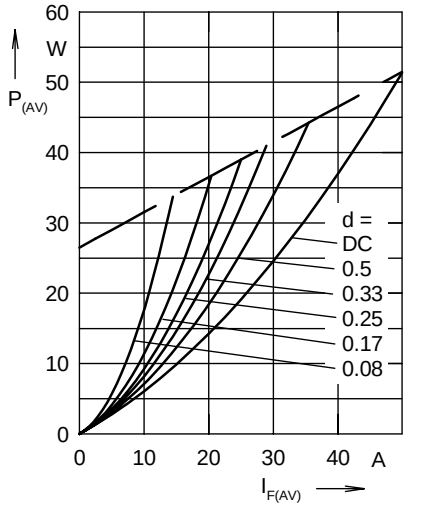


Fig. 5 Forward power loss characteristics

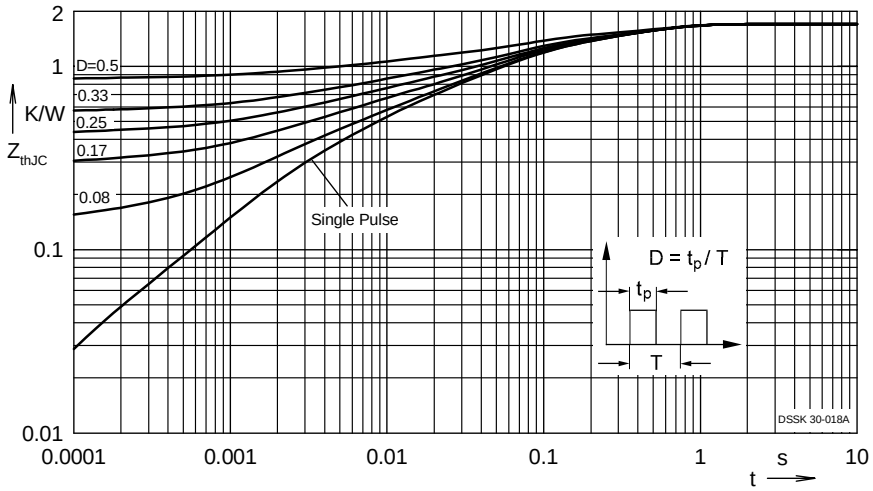
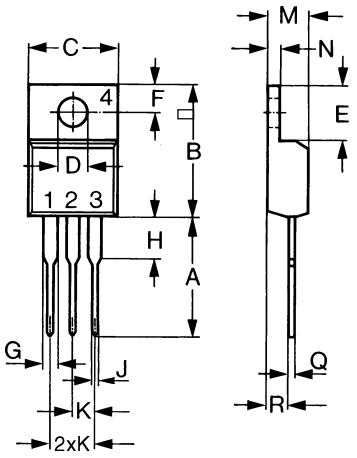


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

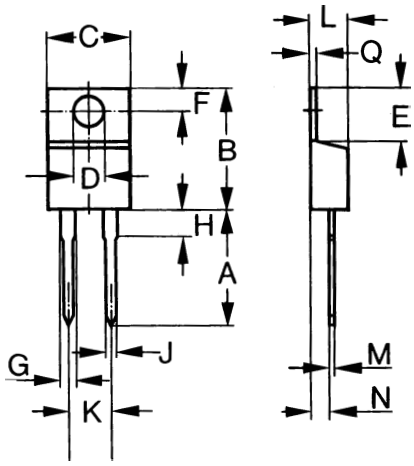
Dimensions

TO-220 AB



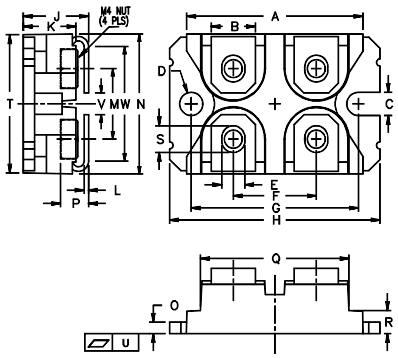
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.38	0.56	0.015	0.022
R	2.29	2.79	0.090	0.110

TO-220 AC



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	14.73	0.500	0.580
B	14.23	16.51	0.560	0.650
C	9.66	10.66	0.380	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.420
F	2.54	3.42	0.100	0.135
G	1.15	1.77	0.045	0.070
H	-	6.35	-	0.250
J	0.64	0.89	0.025	0.035
K	4.83	5.33	0.190	0.210
L	3.56	4.82	0.140	0.190
M	0.38	0.56	0.015	0.022
N	2.04	2.49	0.080	0.115
Q	0.64	1.39	0.025	0.055

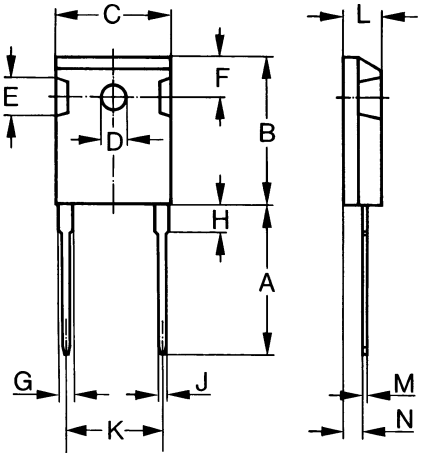
miniBLOC, SOT-227 B



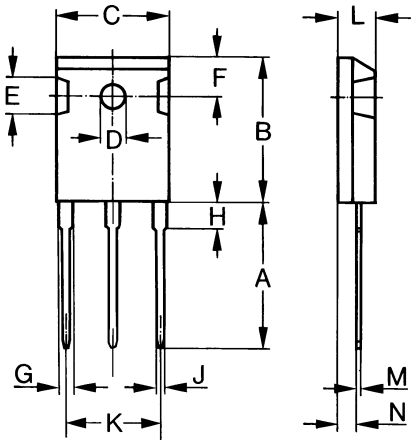
M4 screws (4x) supplied

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.20	1.489	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004
V	3.30	4.57	0.130	0.180
W	0.780	0.830	19.81	21.08

TO-247 AD and ISOPLUS 247™



TO-247 AD and ISOPLUS 247™



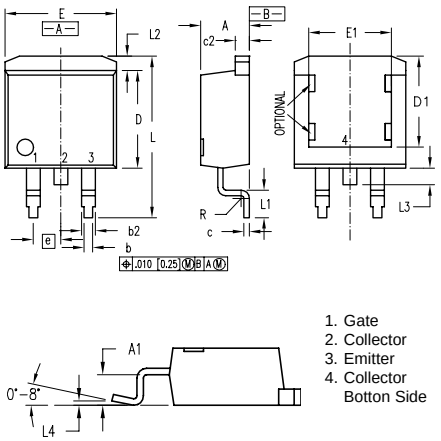
Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	19.81	20.32	0.780	0.800
B	20.80	21.46	0.819	0.845
C	15.75	16.26	0.610	0.640
D*	3.55	3.65	0.140	0.144
E	4.32	5.49	0.170	0.216
F	5.4	6.2	0.212	0.244
G	1.65	2.13	0.065	0.084
H	-	4.5	-	0.177
J	1.0	1.4	0.040	0.055
K	10.8	11.0	0.426	0.433
L	4.7	5.3	0.185	0.209
M	0.4	0.8	0.016	0.031
N	1.5	2.49	0.087	0.102

* ISOPLUS 247™ without hole

033

Dimensions

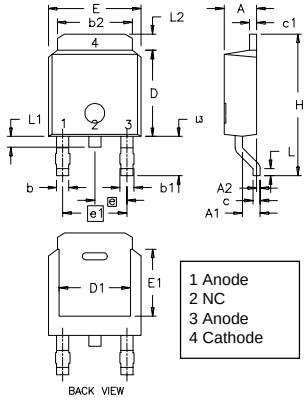
TO-263 AB



1. Gate
2. Collector
3. Emitter
4. Collector
   Botton Side

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	8.00	8.89	.315	.350
E	9.65	10.29	.380	.405
E1	6.22	8.13	.245	.320
e	2.54 BSC		.100 BSC	
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.20	0	.008
R	0.46	0.74	.018	.029

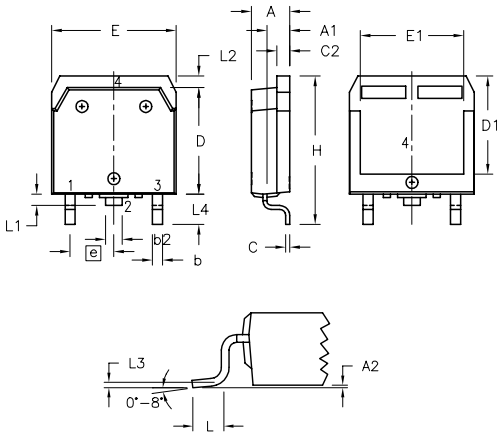
TO-252 AA



1 Anode
2 NC
3 Anode
4 Cathode

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.19	2.38	0.086	0.094
A1	0.89	1.14	0.035	0.045
A2	0	0.13	0	0.005
b	0.64	0.89	0.025	0.035
b1	0.76	1.14	0.030	0.045
b2	5.21	5.46	0.205	0.215
c	0.46	0.58	0.018	0.023
c1	0.46	0.58	0.018	0.023
D	5.97	6.22	0.235	0.245
D1	4.32	5.21	0.170	0.205
E	6.35	6.73	0.250	0.265
E1	4.32	5.21	0.170	0.205
e	2.28 BSC		0.090 BSC	
e1	4.57 BSC		0.180 BSC	
H	9.40	10.42	0.370	0.410
L	0.51	1.02	0.020	0.040
L1	0.64	1.02	0.025	0.040
L2	0.89	1.27	0.035	0.050
L3	2.54	2.92	0.100	0.115

TO-268 AA



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.9	5.1	.193	.201
A_1	2.7	2.9	.106	.114
A_2	.02	.25	.001	.010
b	1.15	1.45	.045	.057
b_2	1.9	2.1	.75	.83
C	.4	.65	.016	.026
D	13.80	14.00	.543	.551
E	15.85	16.05	.624	.632
E_1	13.3	13.6	.524	.535
e	5.45 BSC		.215 BSC	
H	18.70	19.10	.736	.752
L	2.40	2.70	.094	.106
L1	1.20	1.40	.047	.055
L2	1.00	1.15	.039	.045
L3	0.25 BSC		.010 BSC	
L4	3.80	4.10	.150	.161