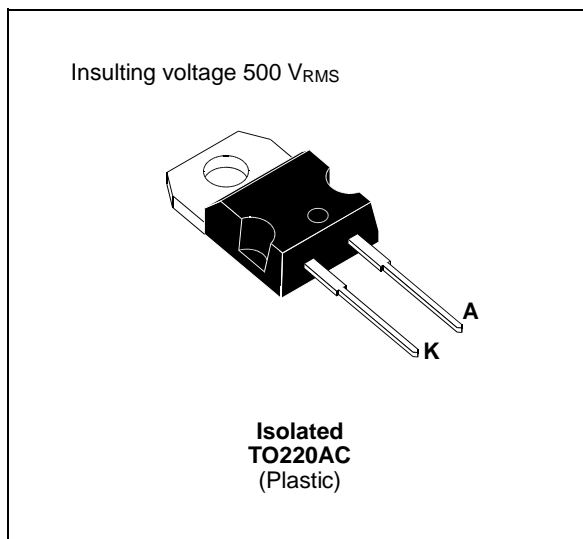


FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED: Capacitance 7pF

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.



ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V _{RRM}	Repetitive Peak Reverse Voltage		1000	V
V _{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I _{FRM}	Repetitive Peak Forward Current	t _p ≤ 10μs	100	A
I _{F (RMS)}	RMS Forward Current		16	A
I _{F (AV)}	Average Forward Current	T _c = 80°C δ = 0.5	8	A
I _{FSM}	Surge Non Repetitive Forward Current	t _p = 10ms Sinusoidal	50	A
P	Power Dissipation	T _c = 80°C	17	W
T _{stg} T _j	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R _{th (j - c)}	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS
STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			35	μA
	$T_j = 100^\circ\text{C}$				2	mA
V_F	$T_j = 25^\circ\text{C}$	$I_F = 8\text{A}$			1.9	V
	$T_j = 100^\circ\text{C}$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25^\circ\text{C}$	$I_F = 1\text{A}$	$di_F/dt = -15\text{A}/\mu\text{s}$	$V_R = 30\text{V}$		155	ns
		$I_F = 0.5\text{A}$	$I_R = 1\text{A}$	$I_{rr} = 0.25\text{A}$		65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

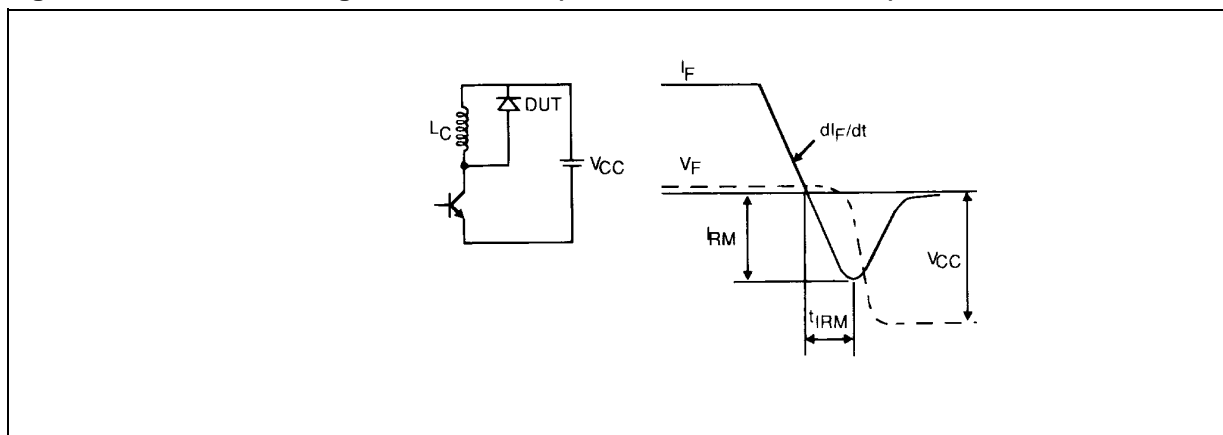
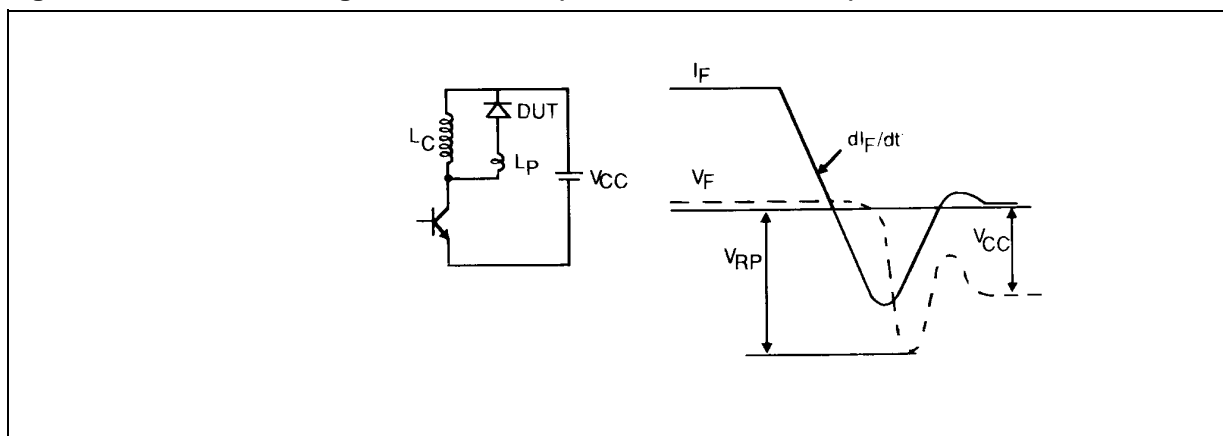
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$di_F/dt = -32\text{A}/\mu\text{s}$	$V_{CC} = 200\text{V}$ $I_F = 8\text{A}$ $L_p \leq 0.05\mu\text{H}$ $T_j = 100^\circ\text{C}$ See Figure 1			200	ns
	$di_F/dt = -64\text{A}/\mu\text{s}$			120		
I_{RM}	$di_F/dt = -32\text{A}/\mu\text{s}$				5.5	A
	$di_F/dt = -64\text{A}/\mu\text{s}$			6		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

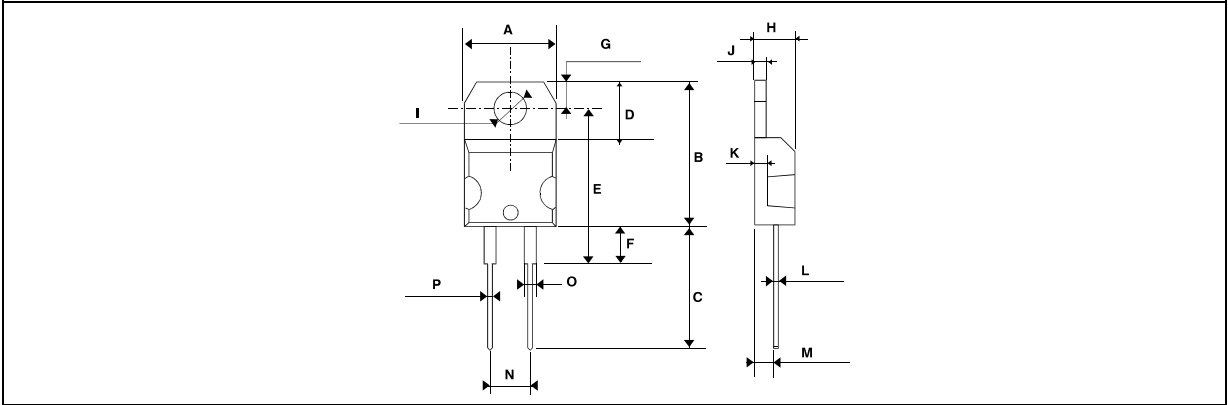
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100^\circ\text{C}$ $di_F/dt = -8\text{A}/\mu\text{s}$	$V_{CC} = 200\text{V}$ $L_p = 2\mu\text{H}$			4.5	

To evaluate the conduction losses use the following equation:

$$V_F = 1.47 + 0.04 I_F \quad P = 1.47 \times I_{F(AV)} + 0.04 I_F^2(RMS)$$

Figure 1. Turn-off switching characteristics (without series inductance).**Figure 2. Turn-off switching characteristics (with series inductance).**

PACKAGE MECHANICAL DATA : TO220AC Plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	10.0	10.4	0.393	0.409
B	15.2	15.9	0.598	0.626
C	13	14	0.511	0.551
D	6.2	6.6	0.244	0.260
E	16.4 typ.		0.645 typ.	
F	3.5	4.2	0.137	0.165
G	2.65	2.95	0.104	0.116
H	4.4	4.6	0.173	0.181
I	3.75	3.85	0.147	0.151
J	1.23	1.32	0.048	0.051
K	1.27 typ.		0.050 typ.	
L	0.49	0.70	0.019	0.027
M	2.4	2.72	0.094	0.107
N	4.95	5.15	0.194	0.203
O	1.14	1.70	0.044	0.067
P	0.61	0.88	0.024	0.034

Cooling method: by conduction (method C)
Marking: type number
Weight: 2.1g
Recommended torque value: 80cm. N
Maximum torque value: 100cm. N

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