BYT03-400

FAST RECOVERY RECTIFIER DIODE

MAJOR PRODUCTS CHARACTERISTICS

$I_{F(AV)}$	**3 A**
V_{RRM}	**400 V**
t_{rr}	**25 ns**
V_F **(max)**	**1.4 V**

DO-201AD
(Plastic)

FEATURES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

DESCRIPTION

Free wheeling diode in converters and motor control circuits.

Rectifiers in S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		400	V
V_{RSM}	Non repetitive peak reverse voltage		400	V
I_{FRM}	Repetive peak forward current	t_p 10µs	60	A
$I_{F(AV)}$	Average forward current*	$T_a = 65°C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non repetitive forward current	t_p = 10ms Sinusoidal	60	A
P	Power dissipation *	$T_a = 65°C$	4.2	W
T_{stg}	Storage temperature range		- 40 to + 150	°C
T_j	Maximum operating junction temperature		+ 150	

* On infinite heatsink with 10mm lead lengh.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	20	°C/W

* On infinite heatsink with 10mm lead lengh.

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25C	$V_R = V_{RRM}$			20	µA
	T_j = 100C				0.5	mA
V_F	T_j = 25C	I_F = 3A			1.5	V
	T_j = 100C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25C	I_F = 1A di_F/dt = - 15A/µs V_R = 30V			55	ns
		I_F = 0.5A I_R = 1 A I_{rr} = 0.25A			25	

TURN-OFF SWITCHING CHARACTERISTICS - Without series inductance

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = - 50A/µs	V_{CC} = 200 V I_F = 3A $L_p \leq 0.05\mu H$ T_j = 100°C		35	50	ns
I_{RM}	di_F/dt = -50A/µs			1.5	2	A

To evaluate the conduction losse use the following equations :

$V_F = 1.1 + 0.050\ I_F$ $\quad P = 1.1 \times I_{F(AV)} + 0.050\ I^2_{F\ (RMS)}$

Fig. 1: Maximum average power dissipation versus average forward current.

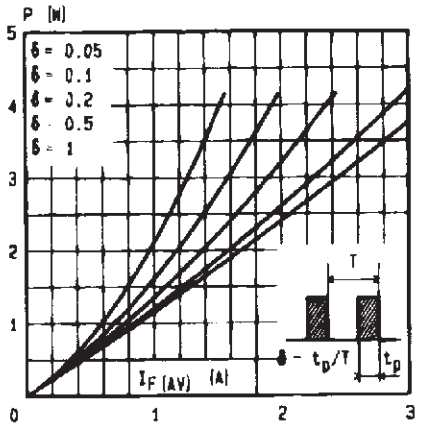


Fig. 2: Average forward current versus ambient temperature.

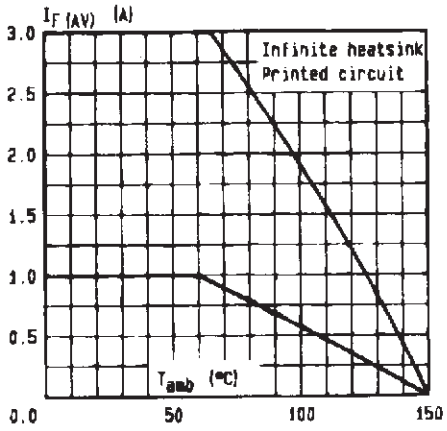
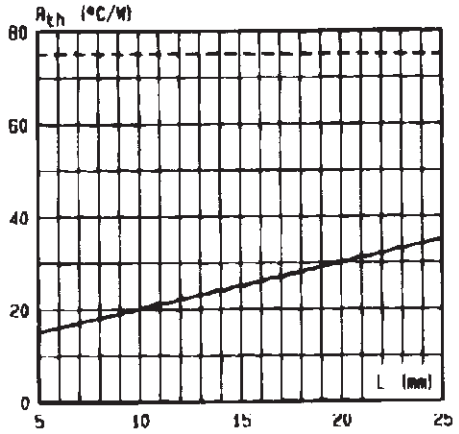


Fig.3 : Thermal resistance versus lead length.



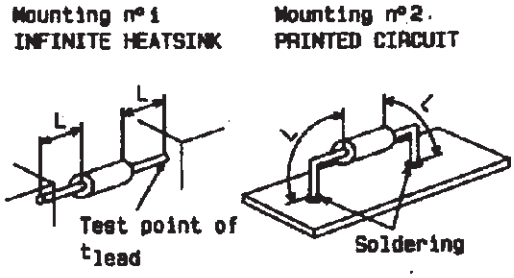


Fig. 4: Transient thermal impedance junction ambient for mounting n° 2 versus pulse duration (L = 10 mm).

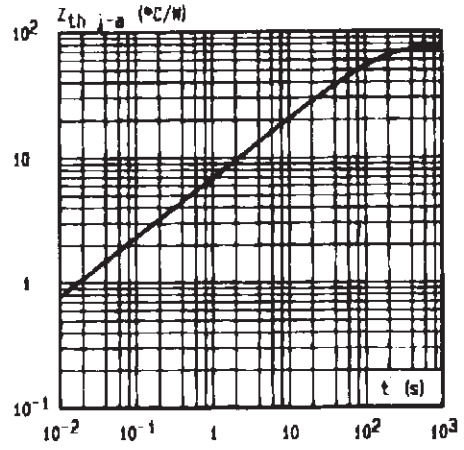


Fig. 5: Peak forward current versus peak forward voltage drop (maximum values).

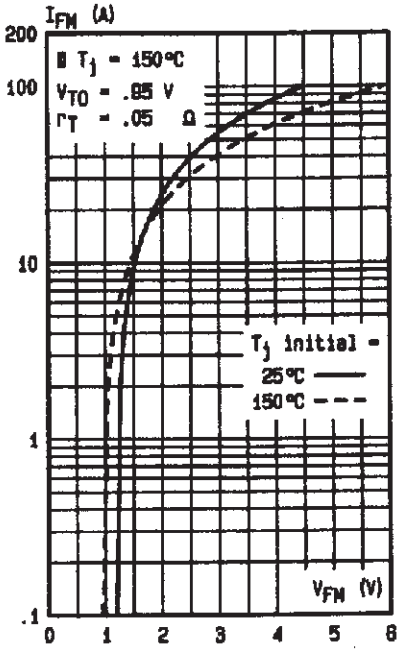


Fig. 7: Recovery time versus dI_F/dt.

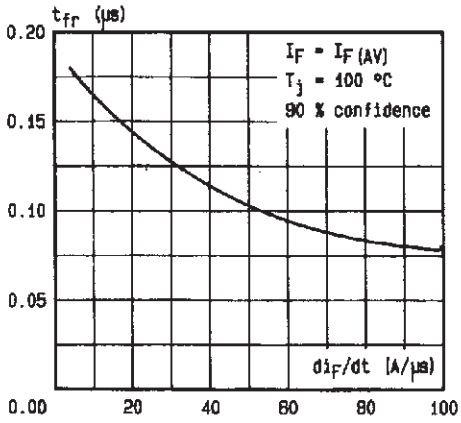


Fig. 8: Peak forward voltage versus dI_F/dt.

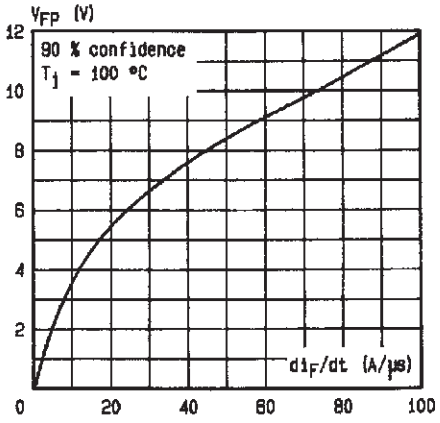


Fig. 9: Peak reverse current versus dI_F/dt.

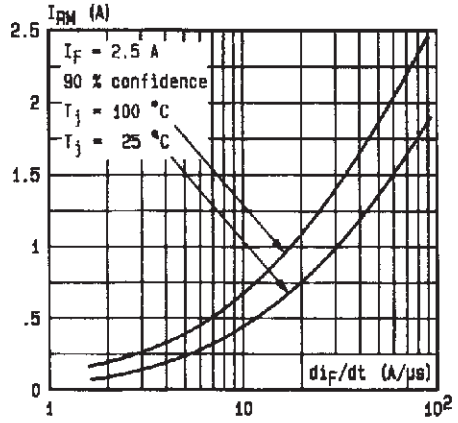


Fig. 10: Recovery charge versus dI_F/dt (typical values).

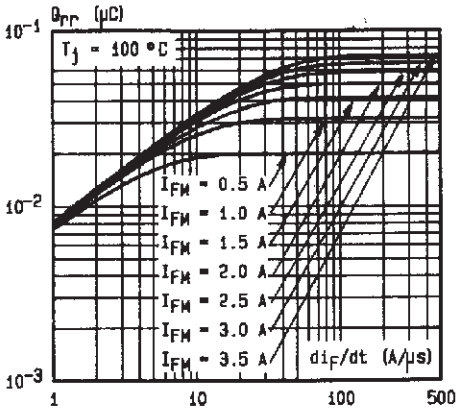


Fig. 11: Dynamic parameters versus junction temperature.

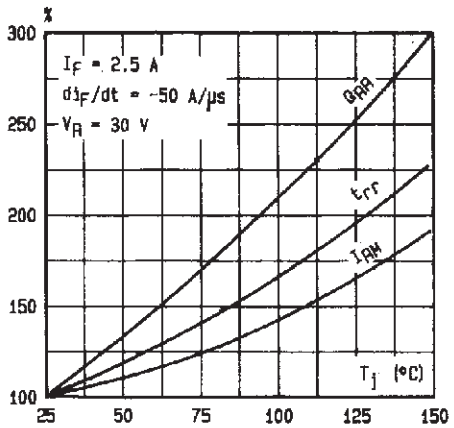
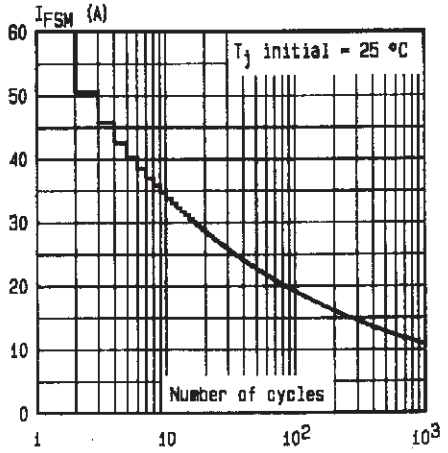
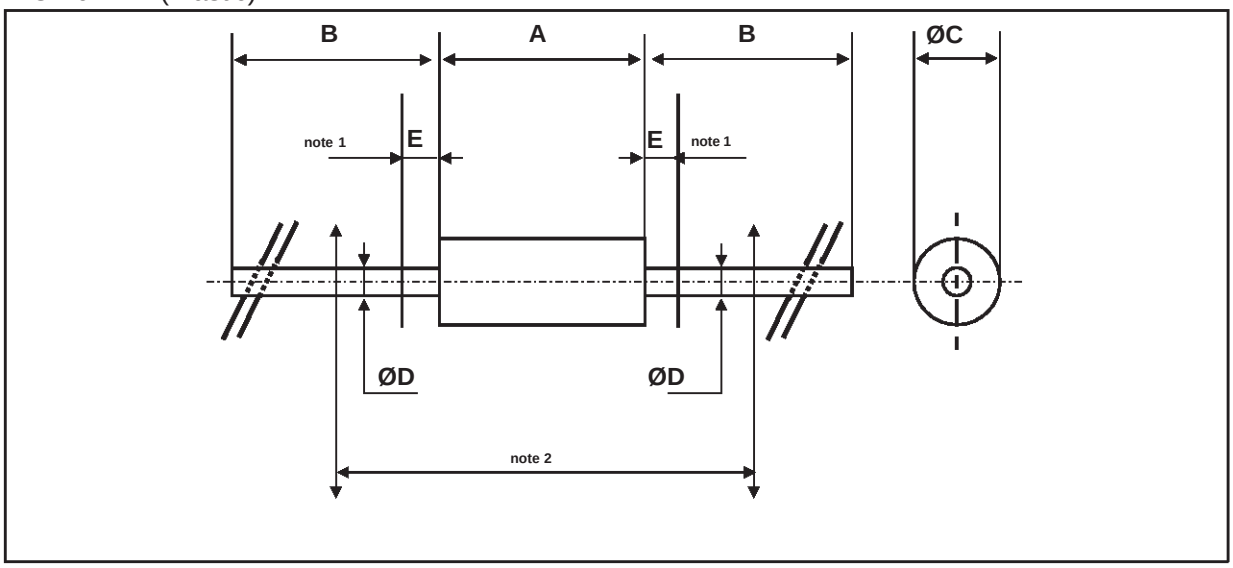


Fig. 12: Non repetitive surge peak current versus number of cycle.



PACKAGE MECHANICAL DATA

DO-201AD (Plastic)



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.50		0.374	1 - The lead diameter ∅ D is not controlled over zone E 2 - The minimum axial length within which the device may be placed with its leads bent at right angles is 0.59"(15 mm)
B	25.40		1.000		
∅ C		5.30		0.209	
∅ D		1.30		0.051	
E		1.25		0.049	