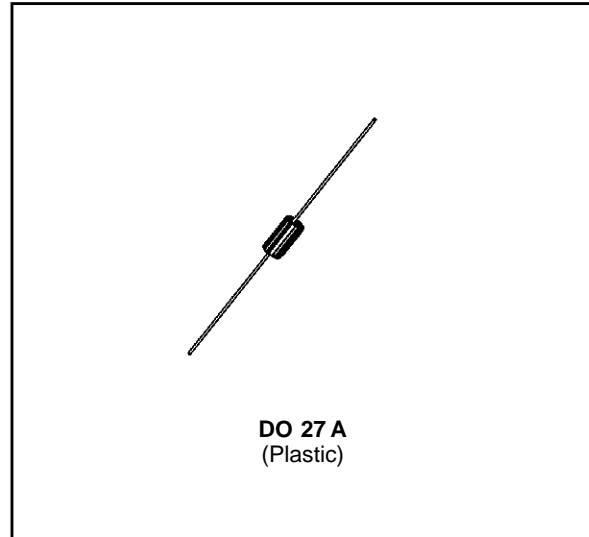


## FAST RECOVERY RECTIFIER DIODES

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



### 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
$I_{FRM}$	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	60	A
$I_{F(AV)}$	Average Forward Current*	$T_a = 65^\circ C$ $\delta = 0.5$	3	A
$I_{FSM}$	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	60	A
$P_{tot}$	Power Dissipation *	$T_a = 65^\circ C$	4.2	W
$T_{stg}$ $T_j$	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	$^\circ C$

Symbol	Parameter	BYT 03-			Unit
		200	300	400	
$V_{RRM}$	Repetitive Peak Reverse Voltage	200	300	400	V
$V_{RSM}$	Non Repetitive Peak Reverse Voltage	220	330	440	V

### THERMAL RESISTANCE

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

\* On infinite heatsink with 10mm lead length.

**ELECTRICAL CHARACTERISTICS**

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub>	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RRM</sub>			20	μA
	T <sub>j</sub> = 100°C				0.5	mA
V <sub>F</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 3A			1.5	V
	T <sub>j</sub> = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t <sub>rr</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1A	di <sub>F</sub> /dt = - 15A/μs	V <sub>R</sub> = 30V		55	ns
		I <sub>F</sub> = 0.5A	I <sub>R</sub> = 1 A	t <sub>rr</sub> = 0.25A		25	

TURN-OFF SWITCHING CHARACTERISTICS - Without Series Inductance

Symbol	Test Conditions			Min.	Typ.	Max.	Unit	
t <sub>IRM</sub>	di <sub>F</sub> /dt = -50A/μs	T <sub>j</sub> = 100 °C	V <sub>CC</sub> = 200V	I <sub>F</sub> = 3A		35	50	ns
I <sub>RM</sub>	di <sub>F</sub> /dt = - 50A/μs	L <sub>P</sub> ≤ 0.05μH				1.5	2	A

To evaluate the conduction losses use the following equations:

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

Figure 1. Maximum average power dissipation versus average forward current.

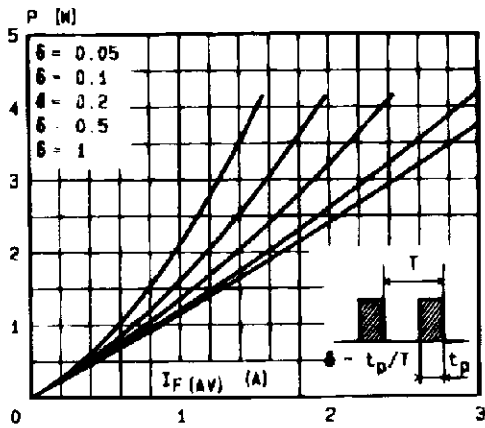


Figure 2. Average forward current versus ambient temperature.

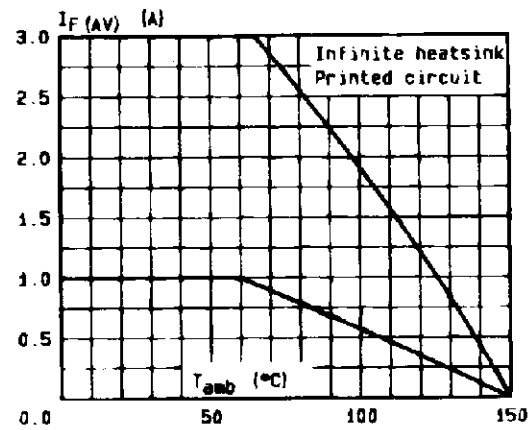
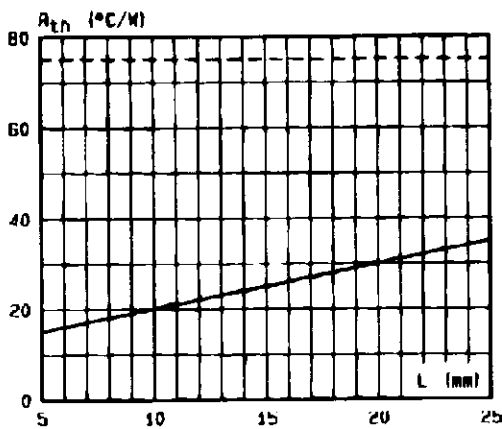


Figure 3. Thermal resistance versus lead length.



Mounting n°1 INFINITE HEATSINK      Mounting n°2 PRINTED CIRCUIT

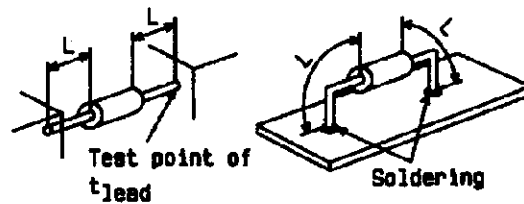


Figure 4. Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

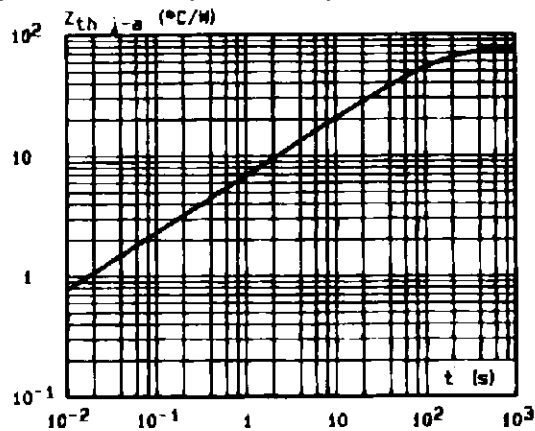


Figure 5. Peak forward current versus peak forward voltage drop (maximum values).

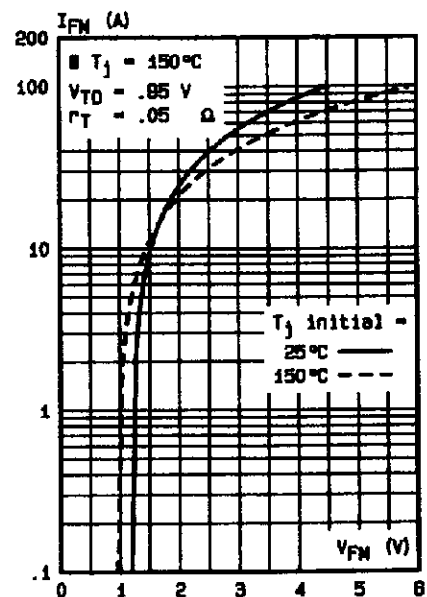


Figure 7. Recovery time versus  $di_F/dt$ .

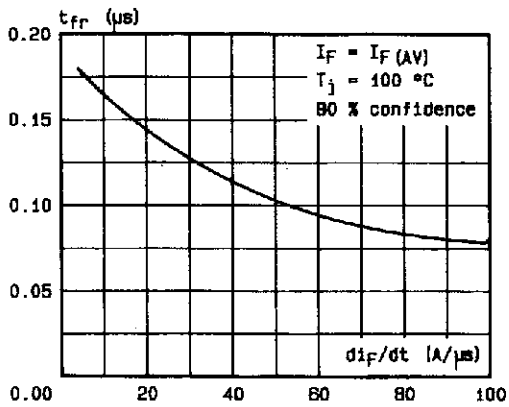


Figure 8. Peak forward voltage versus  $di_F/dt$ .

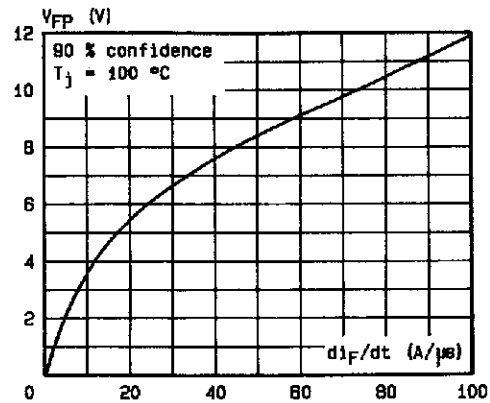


Figure 9. Peak forward voltage versus  $di_F/dt$ .

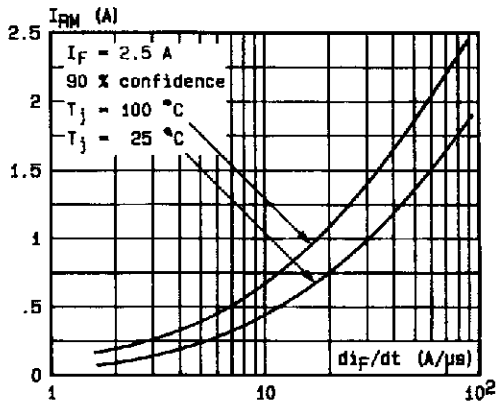


Figure 10. Recovery charge versus  $di_F/dt$  (typical values).

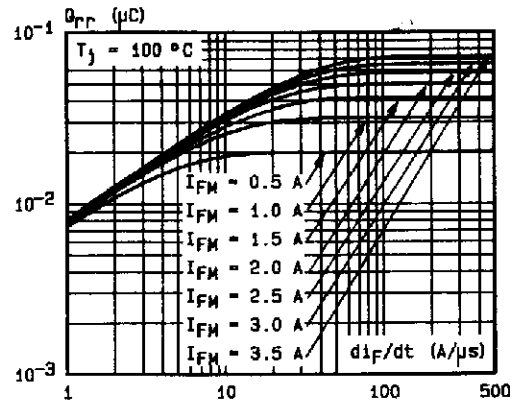


Figure 11. Dynamic parameters versus junction temperature.

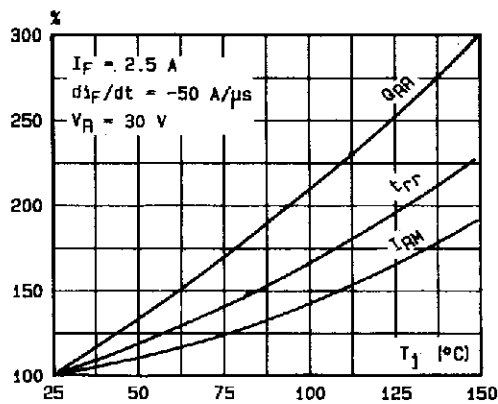
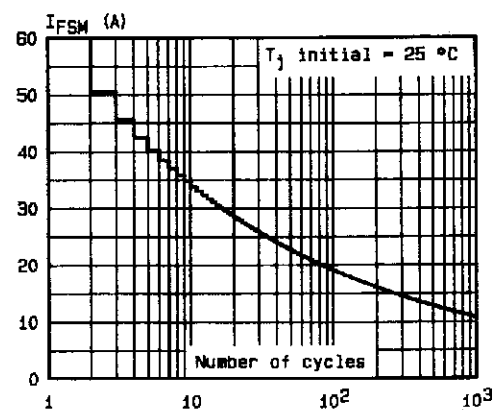
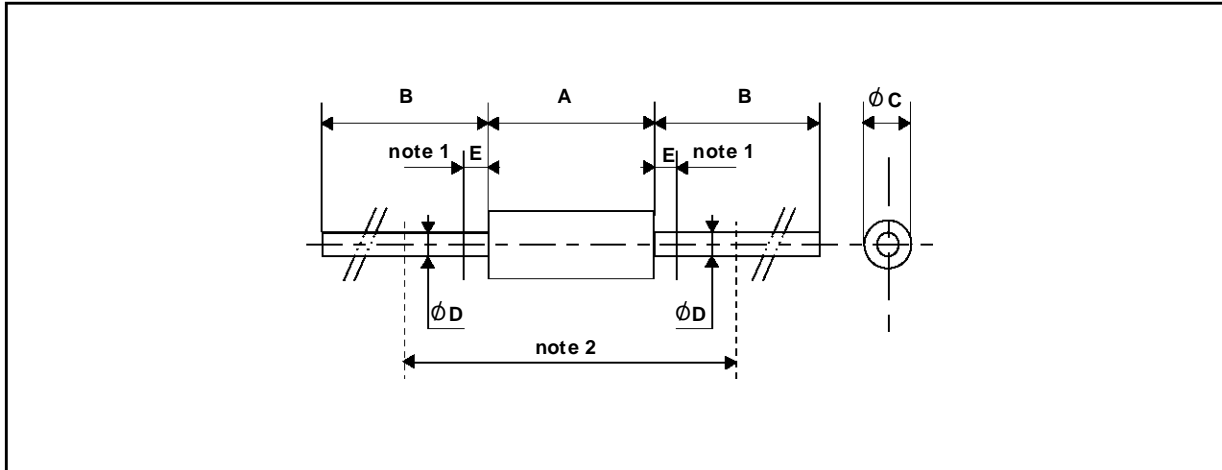


Figure 12. Non repetitive surge peak current versus number of cycles.



**PACKAGE MECHANICAL DATA**

DO 27A (Plastic)



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9.80		0.385	1 - The lead diameter $\varnothing D$ 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	26		1.024		
$\varnothing C$		5.10		0.200	
$\varnothing D$		1.28		0.050	
E		1.25		0.049	

Cooling method: by convection (method A)  
 Marking: type number; white band indicates cathode  
 Weight: 1g

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