

SMBYT03

ELECTRICAL CHARACTERISTICS STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
V_F *	$T_j = 25^\circ\text{C}$	$I_F = 3\text{ A}$			1.5	V
	$T_j = 100^\circ\text{C}$			1.05	1.4	
I_R **	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			10	μA
	$T_j = 100^\circ\text{C}$			0.2	0.6	mA

Pulse test : * $t_p = 380\text{ }\mu\text{s}$, duty cycle < 2 %

** $t_p = 5\text{ ms}$, duty cycle < 2 %

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
trr	$T_j = 25^\circ\text{C}$	$I_F = 0.5\text{ A}$ $I_{RR} = 0.25\text{ A}$ $I_R = 1\text{ A}$			25	ns
		$I_F = 1\text{ A}$ $dI_F/dt = -15\text{ A}/\mu\text{s}$ $V_R = 30\text{ V}$			60	

TURN-OFF SWITCHING CHARACTERISTICS (Without serie inductance)

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

To evaluate the conduction losses use the following equation :

$$P = 1.1 \times I_{F(AV)} + 0.08 \times I_{F(RMS)}^2$$

Voltage (V)	200	300	400
Marking	C2	C3	C4

Laser marking
Logo indicates cathode

Fig.1 : Low frequency power losses versus average current.

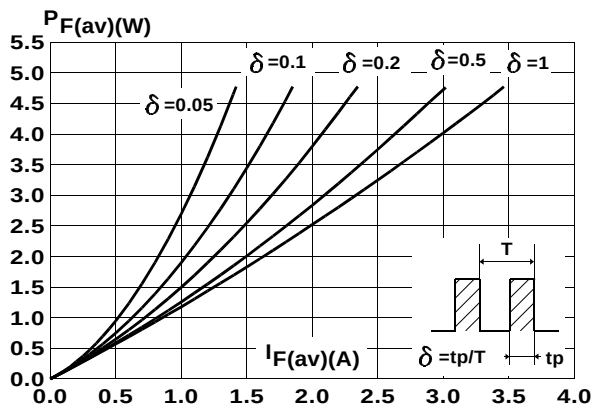


Fig.2 : Peak current versus form factor.

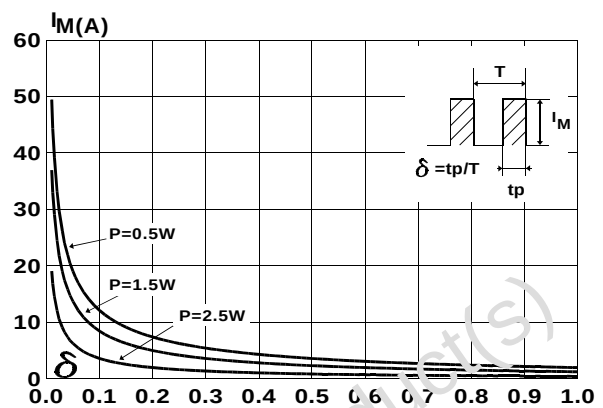


Fig.3 : Non repetitive surge peak forward current versus overload duration.

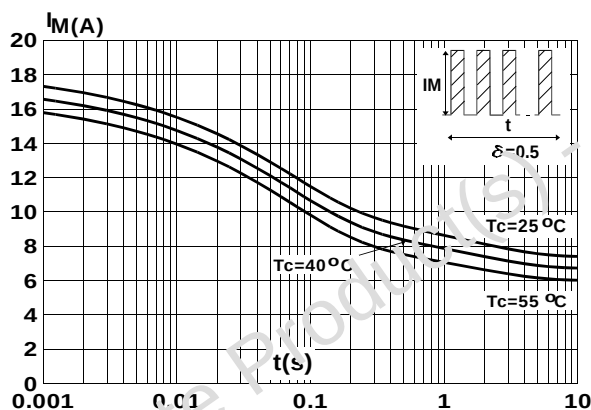


Fig.4 : Relative variation of thermal impedance junction to lead versus pulse duration.

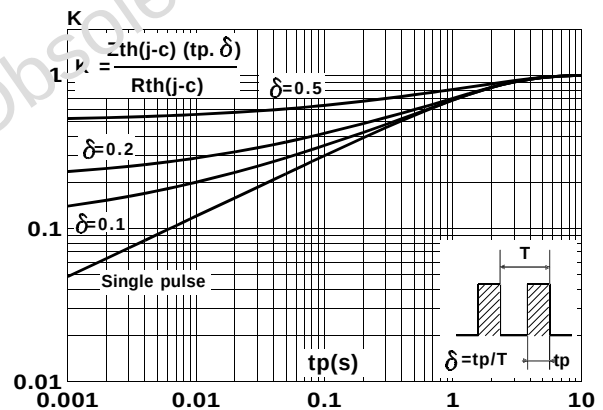


Fig.5 : Voltage drop versus forward current. (Maximum values)

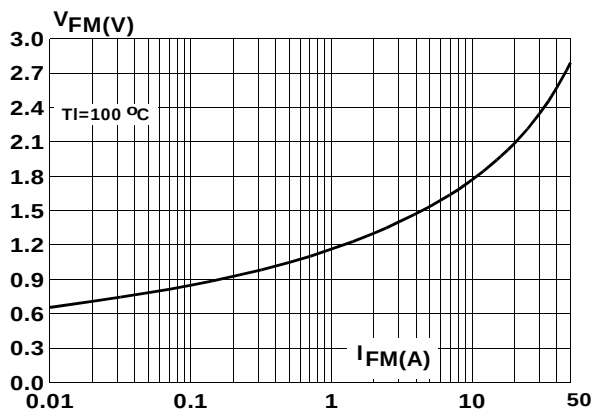


Fig.6 : Average current versus ambient temperature. (duty cycle : 0.5)

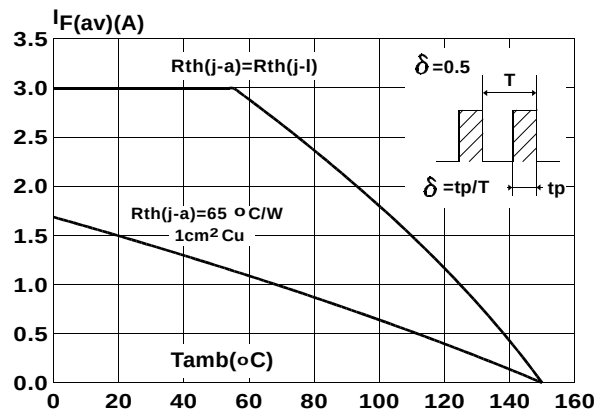


Fig.7 : Recovery time versus di_F/dt .

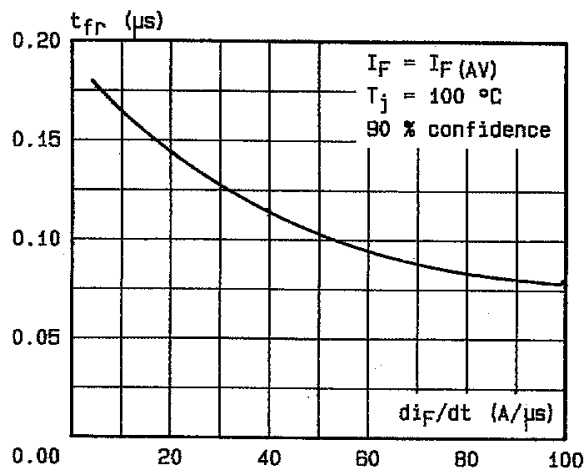


Fig.9 : Peak reverse current versus di_F/dt .

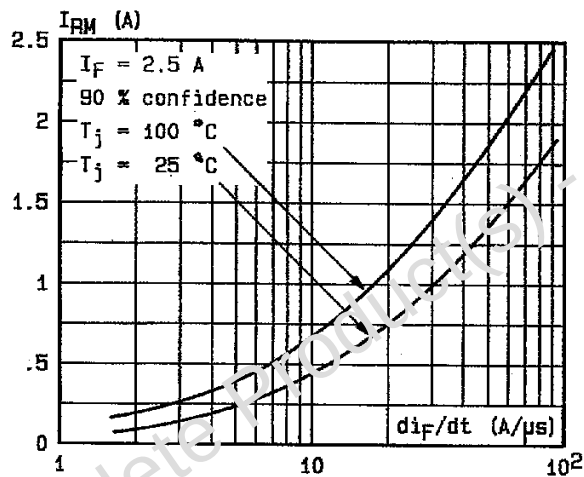


Fig.11 : Dynamic parameters versus junction temperature.

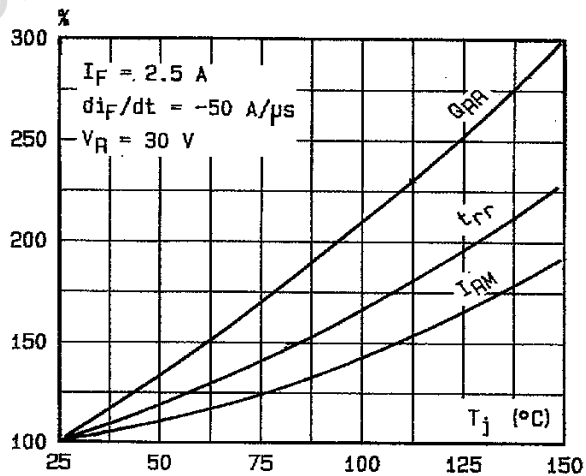


Fig.8 : Peak forward voltage versus di_F/dt .

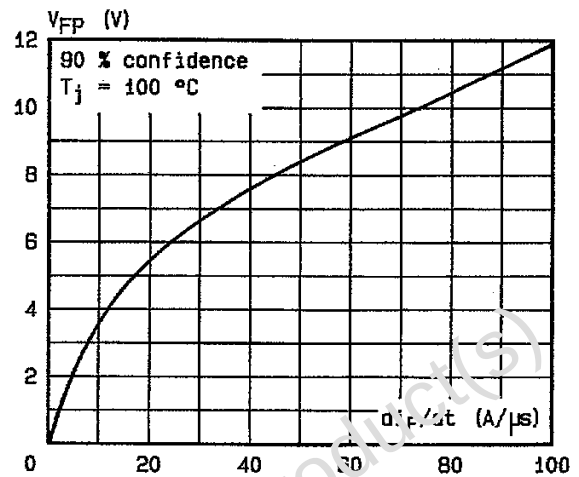


Fig.10 : Recovery charge versus di_F/dt . (typical values)

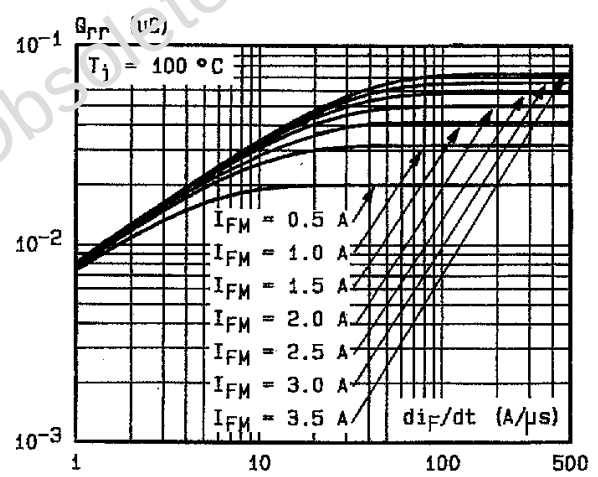
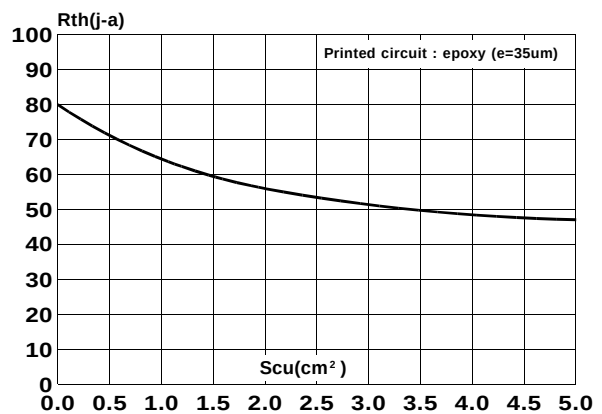
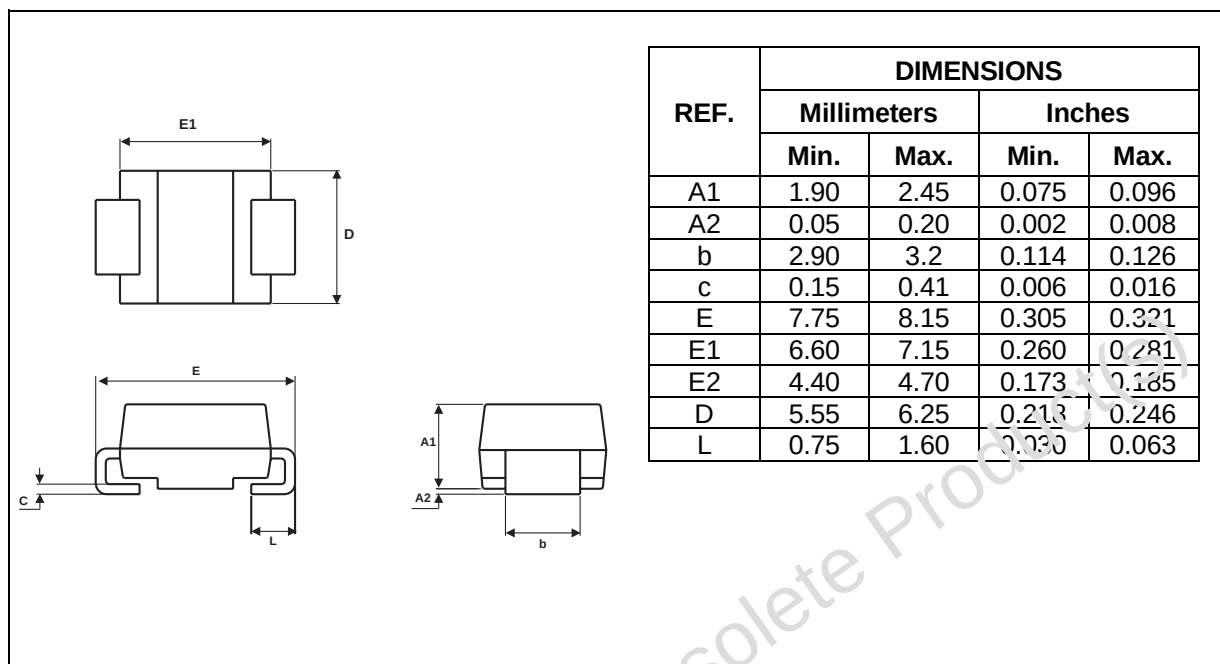


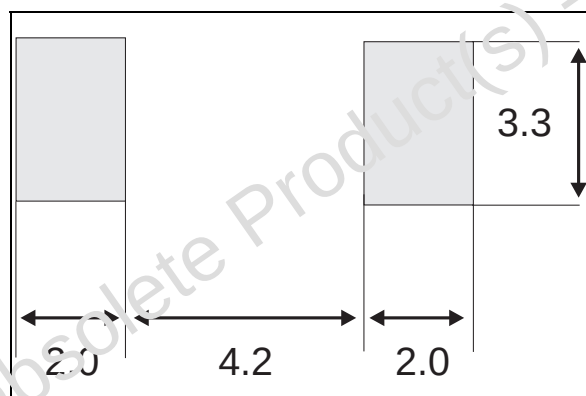
Fig.12 : Thermal resistance junction to ambient versus copper surface under each lead.



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