ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 12A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions				Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A	dI_F/dt = - 15A/µs	V_R = 30V			175	ns
		I_F = 0.5A	I_R = 1A	I_{rr} = 0.25A			95	

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 = 12A $L_p \leq 0.05\mu H$ T_j = 100°C See figure 11			200	ns
	dI_F/dt = - 100A/µs			120		
I_{RM}	dI_F/dt = -50A/µs				7.8	A
	dI_F/dt = - 100A/µs			9		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C dI_F/dt = - 12A/µs	V_{CC} = 200V L_p = 12µH	$I_F = I_{F(AV)}$ See figure 12			4.5	

To evaluate the conduction losses use the following equations:

$V_F = 1.47 + 0.026\ I_F$ $\qquad$ $P = 1.47 \times IF_{(AV)} + 0.026\ I_F{}^2{}_{(RMS)}$

Figure 1. Low frequency power losses versus average current

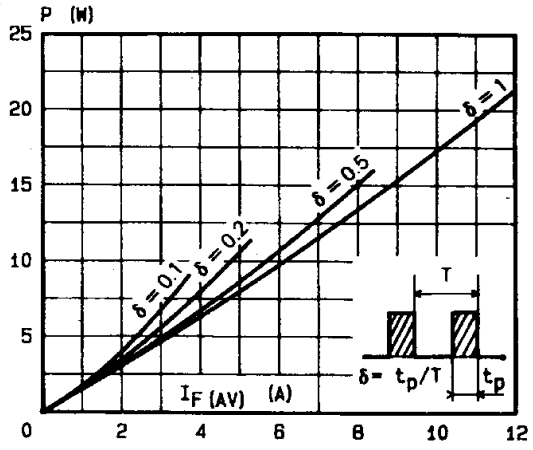


Figure 2. Peak current versus form factor

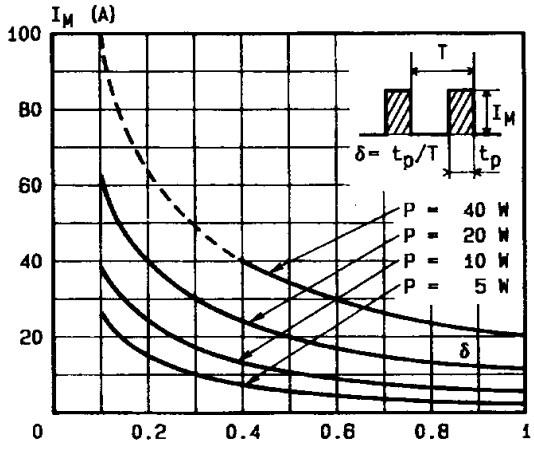


Figure 3. Non repetitive peak surge current versus overload duration

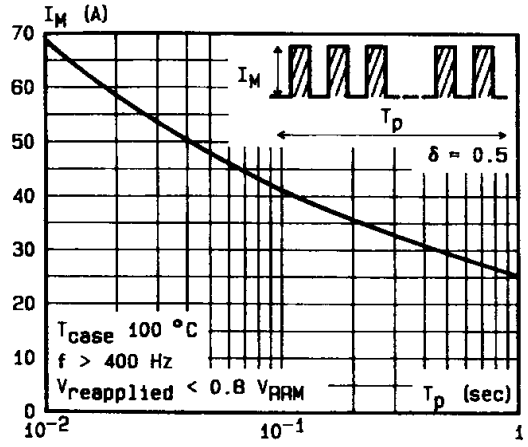


Figure 4. Thermal impedance versus pulse width

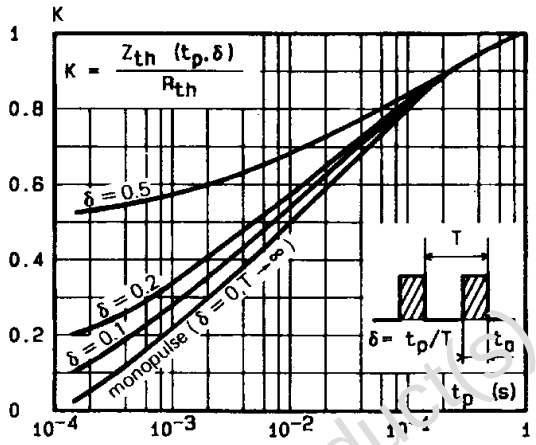


Figure 5. Voltage drop versus forward current

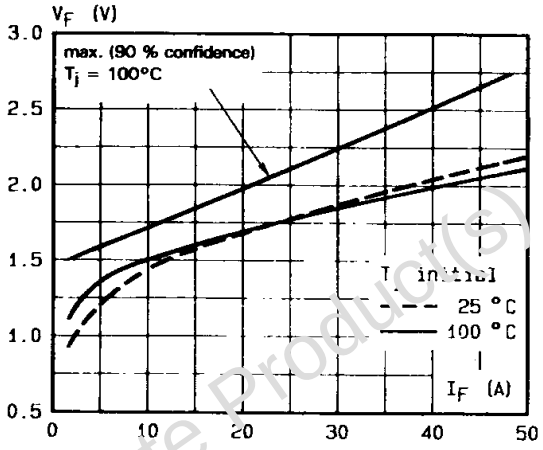


Figure 6. Recovery charge versus di_F/dt

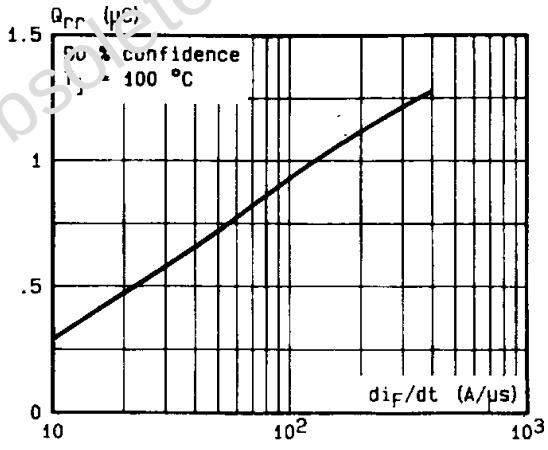


Figure 7. Recovery time versus di_F/dt

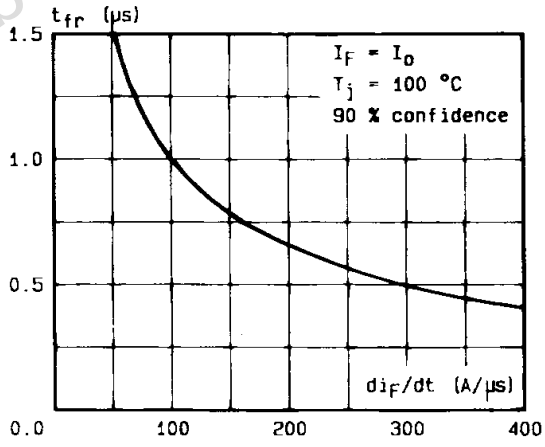


Figure 8. Peak reverse current versus di_F/dt

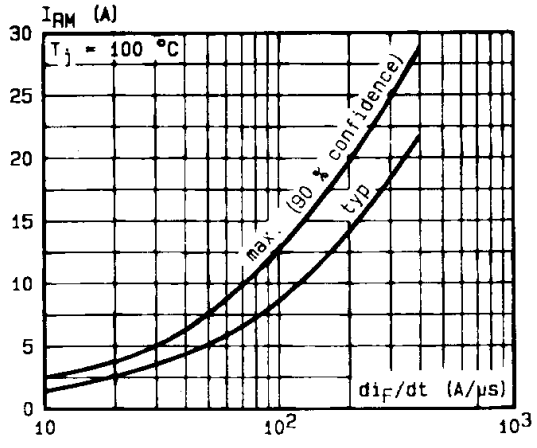


Figure 9. Peak forward voltage versus di_F/d_{tt}

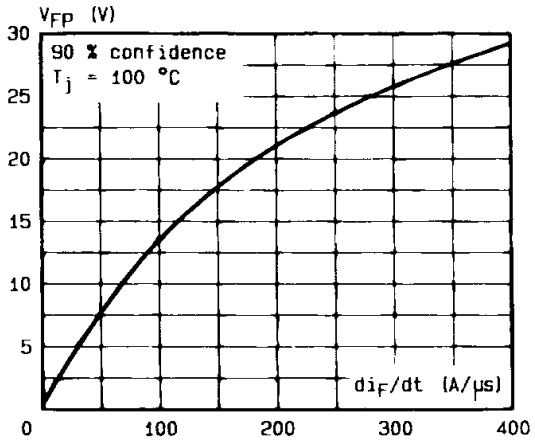


Figure 10. Dynamic parameters versus junction temperature.

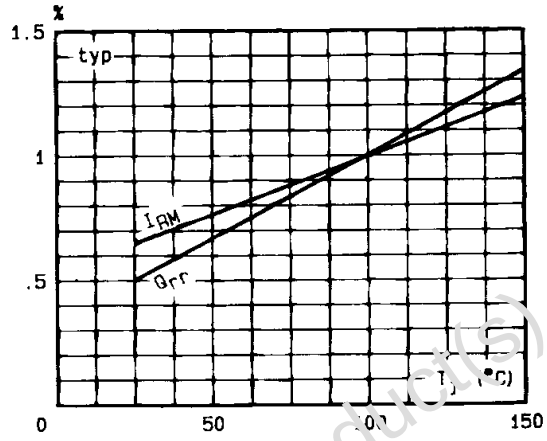


Figure 11. Turn-off switching characteristics (without series inductance).

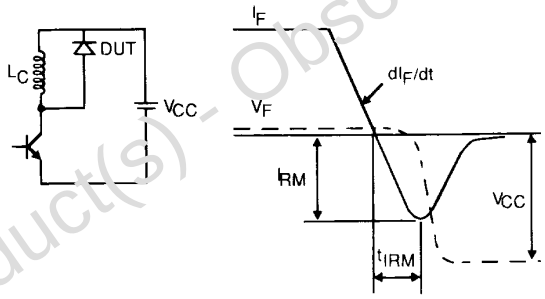
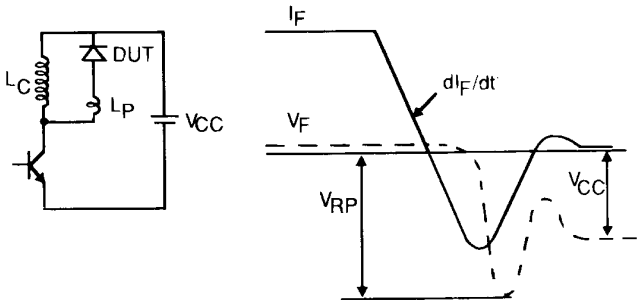
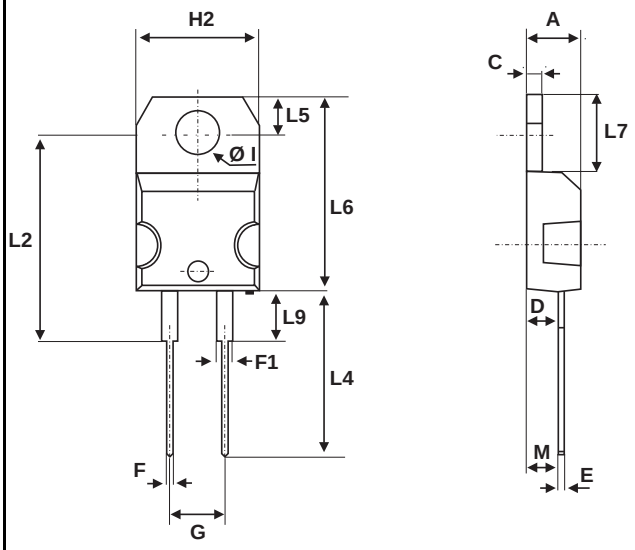


Figure 12. Turn-off switching characteristics (with series inductance)



PACKAGE MECHANICAL DATA :
TO220AC Plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
C	1.23	1.32	0.048	0.051
D	2.40	2.72	0.094	0.107
E	0.49	0.70	0.019	0.027
F	0.61	0.88	0.024	0.034
F1	1.14	1.70	0.044	0.066
G	4.95	5.15	0.194	0.202
H2	10.00	10.40	0.393	0.409
L2	16.40 typ.		0.645 typ.	
L4	13.00	14.00	0.511	0.551
L5	2.65	2.95	0.104	0.116
L6	15.25	15.75	0.600	0.620
L7	6.20	6.60	0.244	0.259
L9	3.50	3.93	0.137	0.154
M	2.6 typ.		0.102 typ.	
Diam. I	3.75	3.85	0.147	0.151

- **Marking:** type number
- Cooling method: by conduction (method C)
- Weight : 1.86g
- Recommended torque value : 80cm. N
- Maximum torque value : 100cm. N