


## HIGH COMMUTATION TRIAC

<p><b>IPAK (Plastic)</b></p>  <p>MT1 MT2 G</p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><b>On-State Current</b> 4 Amp</td> <td style="width: 50%; border: none;"><b>Gate Trigger Current</b> &lt; 25 mA to &lt; 35 mA</td> </tr> <tr> <td colspan="2" style="border: none; text-align: center;"><b>Off-State Voltage</b> 200 V ÷ 600 V</td> </tr> </table> <p style="margin-top: 20px;">This series of <b>TRIACs</b> uses a high performance PNP technology.</p> <p>These parts are intended for general purpose applications.</p>	<b>On-State Current</b> 4 Amp	<b>Gate Trigger Current</b> < 25 mA to < 35 mA	<b>Off-State Voltage</b> 200 V ÷ 600 V	
<b>On-State Current</b> 4 Amp	<b>Gate Trigger Current</b> < 25 mA to < 35 mA				
<b>Off-State Voltage</b> 200 V ÷ 600 V					

### Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Min.	Max.	Unit
$I_{T(RMS)}$	RMS On-state Current	All Conduction Angle, $T_c = 110\text{ }^\circ\text{C}$		4	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 60 Hz		31	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 50 Hz		30	A
$I^2t$	Fusing Current	$t_p = 10\text{ ms}$ , Half Cycle		5.1	$A^2s$
$I_{GM}$	Peak Gate Current	20 $\mu\text{s}$ max.		4	A
$P_{GM}$	Peak Gate Dissipation	20 $\mu\text{s}$ max.		3	W
$P_{G(AV)}$	Gate Dissipation	20 ms max.		1	W
$di/dt$	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$ Tr 100 ns, F = 120 Hz $T_j = 125\text{ }^\circ\text{C}$		50	A/ $\mu\text{s}$
$T_j$	Operating Temperature		-40	+125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature		-40	+150	$^\circ\text{C}$
$T_{sld}$	Soldering Temperature	4.5 mm from case, 10s max.		260	$^\circ\text{C}$

SYMBOL	PARAMETER	VOLTAGE			Unit
		B	D	M	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak Off State Voltage	200	400	600	V

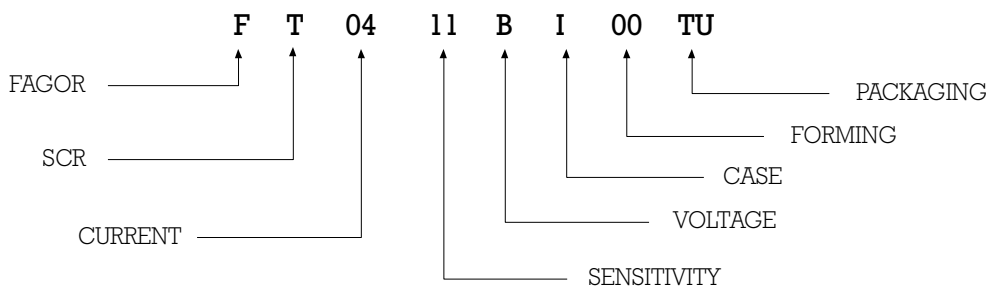
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### Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY		Unit
					11	14	
$I_{GT}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 30 \Omega, T_j = 25^\circ C$	Q1÷Q3	MAX	25	35	mA
$I_{DRM} / I_{RRM}$	Off-State Leakage Current	$V_D = V_{DRM}, T_j = 125^\circ C$		MAX	1		mA
		$V_R = V_{RRM}, T_j = 25^\circ C$		MAX	5		$\mu A$
$V_{to}$	Threshold Voltage	$T_j = 125^\circ C$		MAX	0.9		V
$R_d$	Dynamic Resistance	$T_j = 125^\circ C$		MAX	120		m
$V_{TM}^*$	On-state Voltage	$I_T = 5.5 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		MAX	1.6		V
$V_{GT}$	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 30 \Omega, T_j = 25^\circ C$	Q1÷Q3	MAX	1.3		V
$V_{GD}$	Gate Non Trigger Voltage	$V_D = V_{DRM}, R_L = 3.3K \Omega, T_j = 125^\circ C$	Q1÷Q3	MIN	0.2		V
$I_H^*$	Holding Current	$I_T = 100 \text{ mA}, \text{ Gate Open } T_j = 25^\circ C$		MAX	25	35	mA
$I_L$	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1, Q3	MAX	25	50	mA
			Q2	MAX	50	60	
$dv / dt^*$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{ Gate open } T_j = 110^\circ C$		MIN	200	400	V/ $\mu s$
$R_{th(j-c)}$	Thermal Resistance Junction-Case for AC				2.6		$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				100		$^\circ C/W$

(\*) For either polarity of electrode MT2 voltage with reference to electrode MT1.

### PART NUMBER INFORMATION



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Fig. 1: Maximum RMS power dissipation versus RMS on-state current.

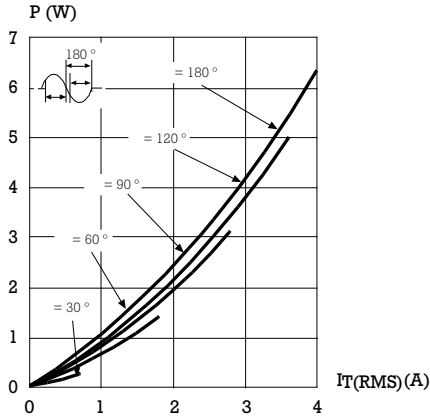


Fig. 3: RMS on-state current versus case temperature.

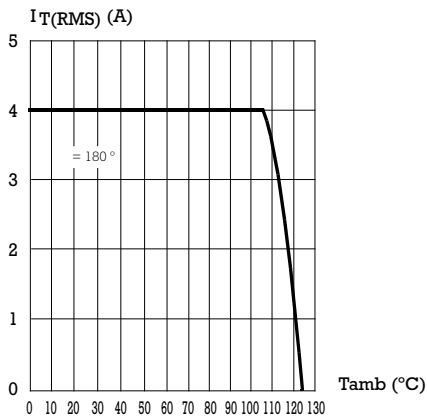


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

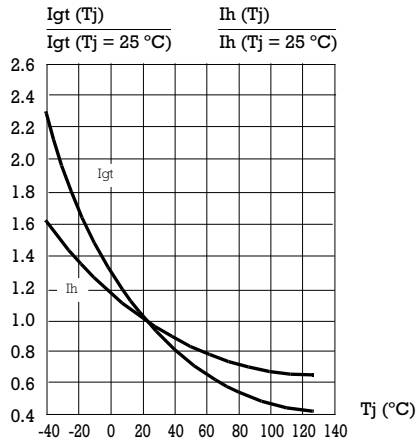


Fig. 2: Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and T case).

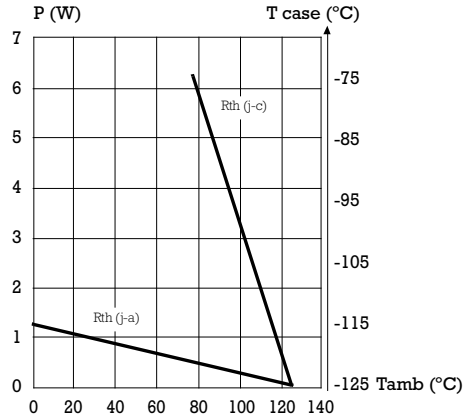


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

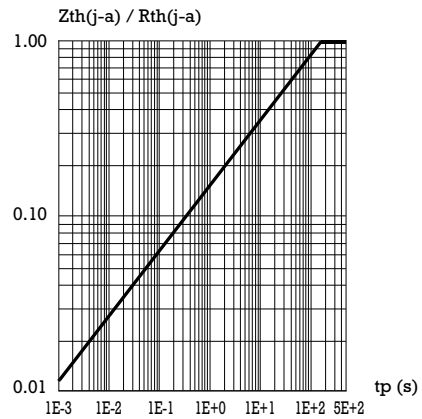
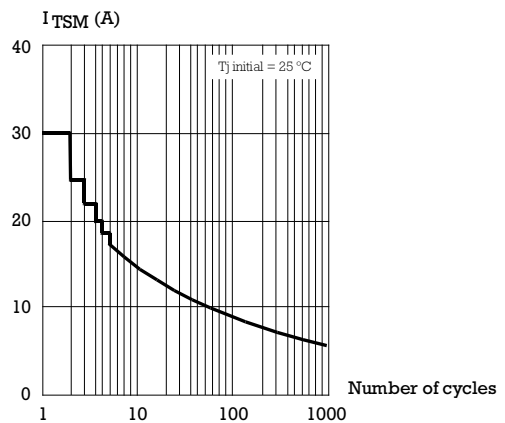


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



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Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p = 10$  ms, and corresponding value of  $I^2t$ .

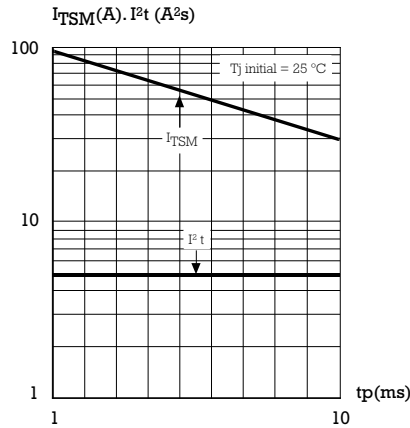
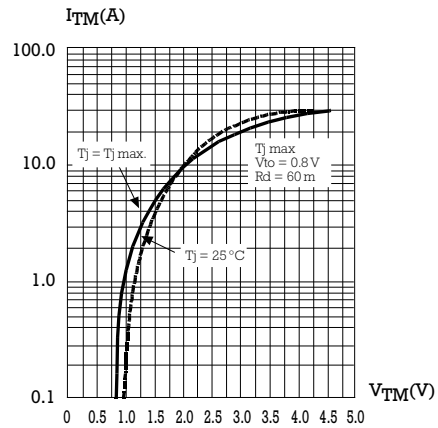


Fig. 8: On-state characteristics (maximum values).



**PACKAGE MECHANICAL DATA** IPAK TO 251-AA

REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	2.19	2.3±0.08	2.38
A1	0.89	1.067±0.01	1.14
b	0.64	0.75±0.1	0.89
b1	0.76	0.95	1.14
c	0.46		0.58
c2		0.8±0.013	
D	5.97	6.1±0.1	6.22
D1	5.21		5.52
E	6.35	6.58±0.14	6.73
E1	5.21	5.36±0.1	5.46
e		2.28BSC	
L	8.89	9.2±0.2	9.65
L1	1.91	2±0.1	2.28
L3	0.89		1.27

Marking: type number  
Weight: 0.2 g