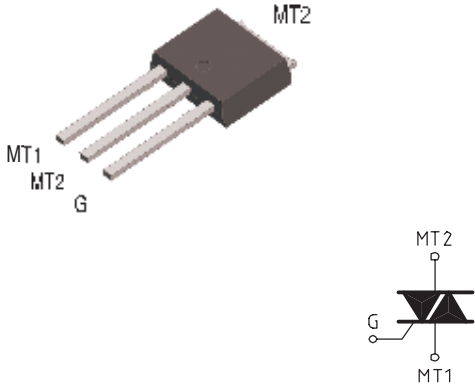


HIGH COMMUTATION TRIAC

<p style="text-align: center;">IPAK (Plastic)</p> 	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">On-State Current</td> <td style="text-align: center;">Gate Trigger Current</td> </tr> <tr> <td style="text-align: center;">4 Amp</td> <td style="text-align: center;">$\leq 35 \text{ mA}$</td> </tr> <tr> <td colspan="2" style="text-align: center;">Off-State Voltage</td> </tr> <tr> <td colspan="2" style="text-align: center;">200 V ÷ 800 V</td> </tr> </table> <p style="margin-top: 20px;">This series of TRIACs uses a high performance PNPN technology.</p> <p>These parts are intended for general purpose AC switching applications with highly inductive loads.</p>	On-State Current	Gate Trigger Current	4 Amp	$\leq 35 \text{ mA}$	Off-State Voltage		200 V ÷ 800 V	
On-State Current	Gate Trigger Current								
4 Amp	$\leq 35 \text{ mA}$								
Off-State Voltage									
200 V ÷ 800 V									

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (full sine wave)	All Conduction Angle, $T_C = 95^\circ\text{C}$	4	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7 \text{ ms}$)	33	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20 \text{ ms}$)	30	A
I^2t	Fusing Current	$t_p = 10 \text{ ms}$, Half Cycle	4.5	A^2s
I_{GM}	Peak Gate Current	$20 \mu\text{s max.}$ $T_j = 125^\circ\text{C}$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ\text{C}$	1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ns}$ $f = 120 \text{ Hz}$, $T_j = 125^\circ\text{C}$	50	$\text{A}/\mu\text{s}$
T_j	Operating Temperature		(-40 +125)	$^\circ\text{C}$
T_{stg}	Storage Temperature		(-40 +150)	$^\circ\text{C}$
T_{slid}	Soldering Temperature	10s max	260	$^\circ\text{C}$

SYMBOL	PARAMETER	VOLTAGE					Unit
		B	D	M	S	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	200	400	600	700	800	V

HIGH COMMUTATION TRIAC

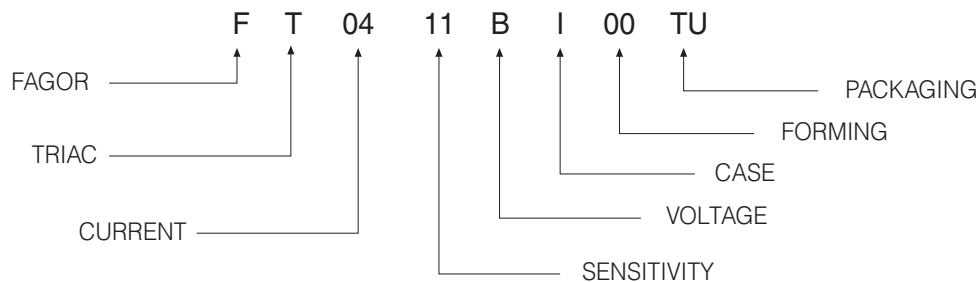
Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY		Unit
					11	14	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}$, $R_L = 33\Omega$, $T_j = 25^\circ C$	Q1÷Q3	MAX	25	35	mA
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}$, $R_L = 33\Omega$, $T_j = 25^\circ C$	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
$I_H^{(2)}$	Holding Current	$I_T = 100$ mA, 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 Q2	MAX MAX	40 50	50 60	mA
$dV/dt^{(2)}$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$, Gate open $T_j = 125^\circ C$		MIN	200	500	V/ μ s
$(dI/dt)_c^{(2)}$	Critical Rate of Current Rise	$(dv/dt)_c = 0.1$ V/ μ s $T_j = 125^\circ C$ $(dv/dt)_c = 10$ V/ μ s $T_j = 125^\circ C$ without snubber $T_j = 125^\circ C$		MIN MIN MIN	- - 2.5	- - 3.5	A/ms
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 5.5$ Amp, $t_p = 380$ μ s, $T_j = 25^\circ C$		MAX	1.6		V
$V_{t(o)}^{(2)}$	Threshold Voltage	$T_j = 125^\circ C$		MAX	0.9		V
$r_d^{(2)}$	Dynamic Resistance	$T_j = 125^\circ C$		MAX	140		m Ω
I_{DRM}/I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}$, $T_j = 125^\circ C$ $V_R = V_{RRM}$, $T_j = 25^\circ C$		MAX MAX	0.5 5		mA μ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			1.6		$^\circ C/W$
$R_{th(j-a)}$					100		$^\circ C/W$

(1) Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

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

PART NUMBER INFORMATION



HIGH COMMUTATION TRIAC

Fig. 1: Maximum power dissipation versus RMS on-state current (full cycle).

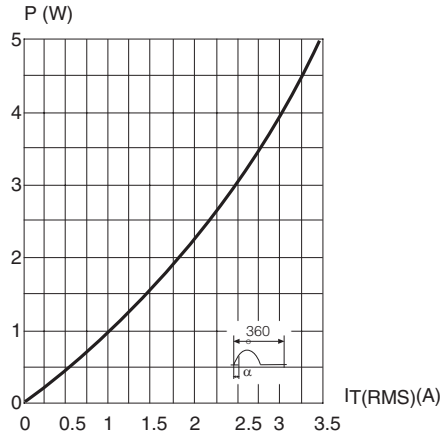


Fig. 2: RMS on-state current versus case temperature (full cycle).

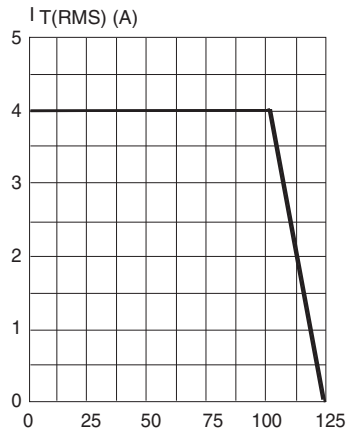


Fig. 3: Relative variation of thermal impedance versus pulse duration.

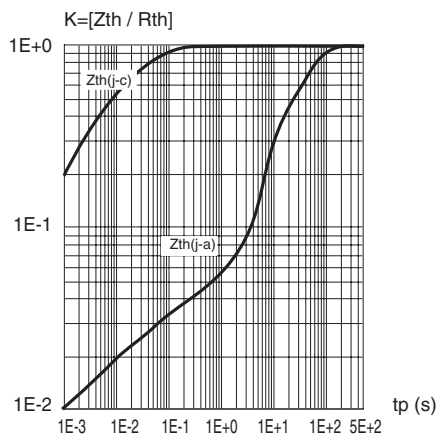


Fig. 4: On-state characteristics (maximum values)

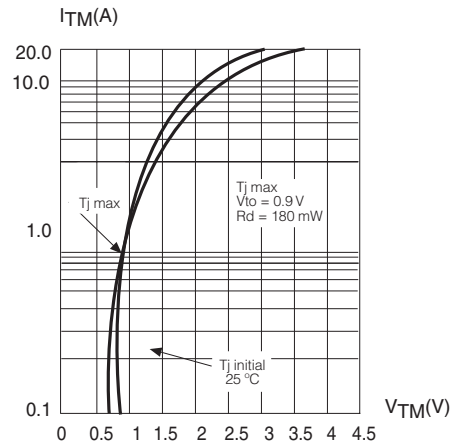


Fig. 5: Surge peak on-state current versus number of cycles

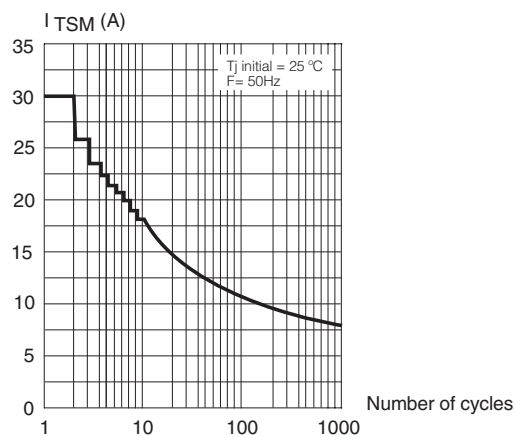
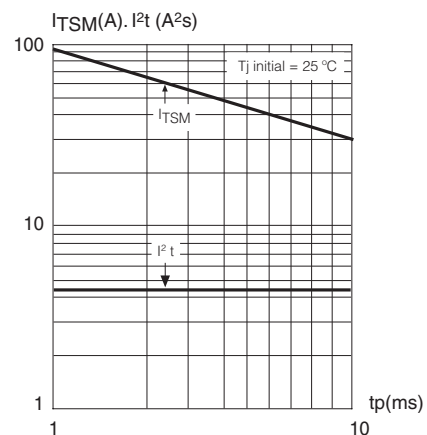


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I^2 t$.



HIGH COMMUTATION TRIAC

Fig. 7: Relative variation of gate trigger current, holding current and latching versus junction temperature (typical values)

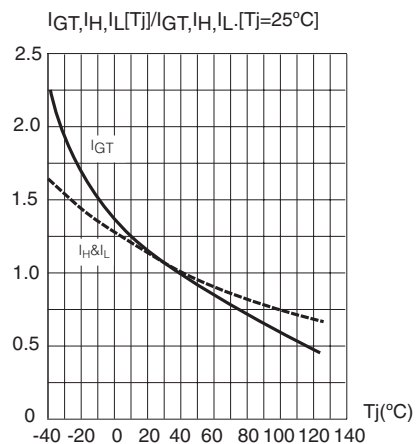
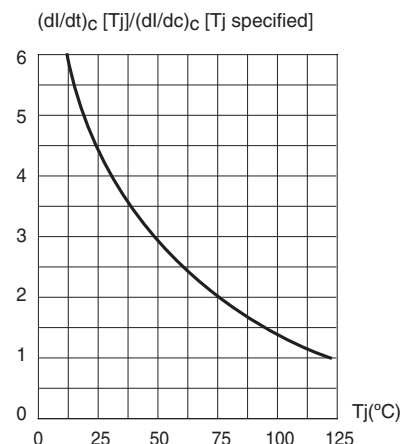


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature



PACKAGE MECHANICAL DATA

IPAK TO 251-AA

REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	2.19	2.30 ± 0.11	2.41
A1	0.89	1.08 ± 0.19	1.27
b	0.50	0.70 ± 0.20	0.90
b1	0.70	0.92 ± 0.22	1.14
c	0.43	0.51 ± 0.08	0.59
c2	0.43	0.62 ± 0.19	0.81
D	5.40	5.81 ± 0.41	6.22
D1	5.70	5.90 ± 0.20	6.10
E	6.35	6.54 ± 0.19	6.73
E1	5.20	5.33 ± 0.13	5.46
e	2.25	2.30 ± 0.05	2.35
L	7.50	8.58 ± 1.08	9.66
L1	1.90	2.10 ± 0.20	2.28
L3	0.89	1.27 ± 0.38	1.65

Marking: type number
Weight: 0.2 g