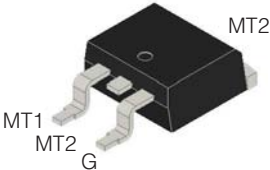
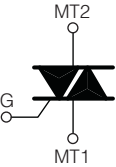


STANDARD TRIAC

D²PAK  	<table> <tr> <td>On-State Current 12 Amp</td><td>Gate Trigger Current ≤ 75 mA</td></tr> <tr> <td colspan="2">Off-State Voltage 200 V ÷ 800 V</td></tr> <tr> <td colspan="2"> This series of TRIACs uses a high performance PNP technology. These parts are intended for general purpose AC switching applications with highly inductive loads. </td></tr> </table>	On-State Current 12 Amp	Gate Trigger Current ≤ 75 mA	Off-State Voltage 200 V ÷ 800 V		This series of TRIACs uses a high performance PNP technology. These parts are intended for general purpose AC switching applications with highly inductive loads.	
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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, $T_c = 95\text{ °C}$	12	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7\text{ ms}$)	132	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20\text{ ms}$)	120	A
I^2t	Fusing Current	$t_p = 10\text{ ms}$, Half Cycle	72	A ² s
I_{GM}	Peak Gate Current	$20\text{ }\mu\text{s max.}$ $T_j = 125\text{ °C}$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125\text{ °C}$	1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$ $f = 120\text{ Hz}$, $T_j = 125\text{ °C}$	50	A/ μs
T_j	Operating Temperature		(-40 +125)	°C
T_{stg}	Storage Temperature		(-40 +150)	°C
T_{sld}	Soldering Temperature	10s max	260	°C

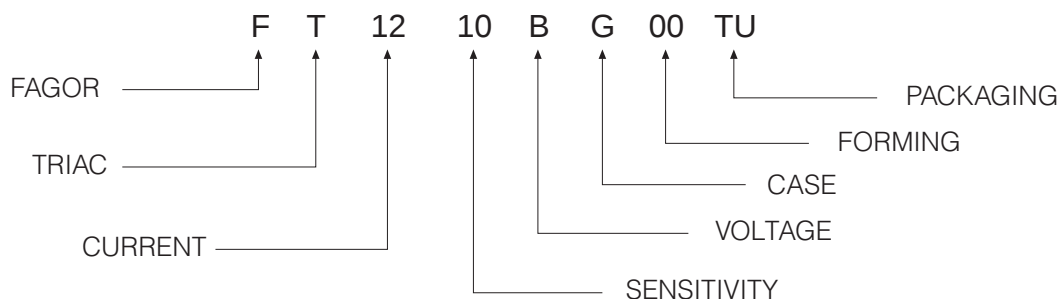
SYMBOL	PARAMETER	VOLTAGE					Unit
		B	D	M	S	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	200	400	600	700	800	V

STANDARD TRIAC
Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY		Unit
					10	13	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3 Q4	MAX MAX	25 25	50 75	mA
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q4	MAX	1.3		V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}, R_L = 3.3 K\Omega, T_j = 125^\circ C$	Q1÷Q4	MIN	0.2		V
$I_H^{(2)}$	Holding Current	$I_T = 100 \text{ mA}, \text{Gate open}, T_j = 25^\circ C$		MAX	25	50	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1, Q3, Q4 Q2	MAX MAX	40 60	70 80	mA
$dV/dt^{(2)}$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{Gate open}$ $T_j = 125^\circ C$		MIN	400	1000	V/ μs
$(dV/dt)_c^{(2)}$	Critical Rate of Commu- tating off-state voltage	$(dI/dt)_c = 2.7 \text{ A/ms } T_j = 125^\circ C$		MIN	3	8	V/ μs
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 17 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		MAX	1.6		V
$V_{t(o)}^{(2)}$	Threshold Voltage	$T_j = 125^\circ C$		MAX	0.80		V
$r_d^{(2)}$	Dynamic resistance	$T_j = 125^\circ C$		MAX	70		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	1 5		mA μA
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			1.3		°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				45		°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


STANDARD TRIAC

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

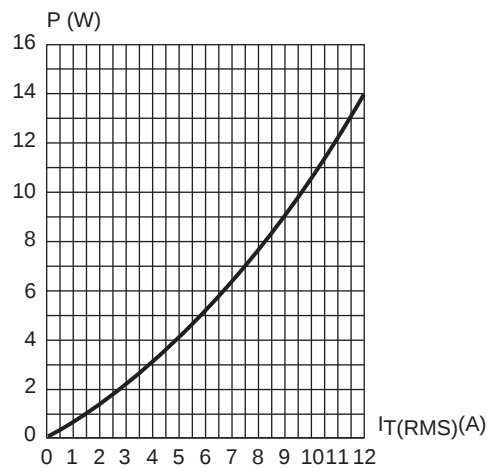


Fig. 2: RMS on-state current versus case temperature (full cycle).

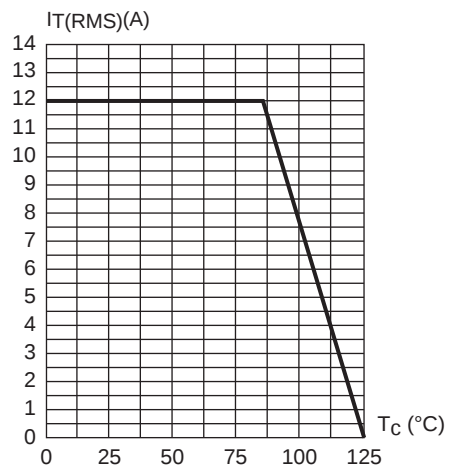


Fig. 3: Relative variation of thermal impedance versus pulse duration.

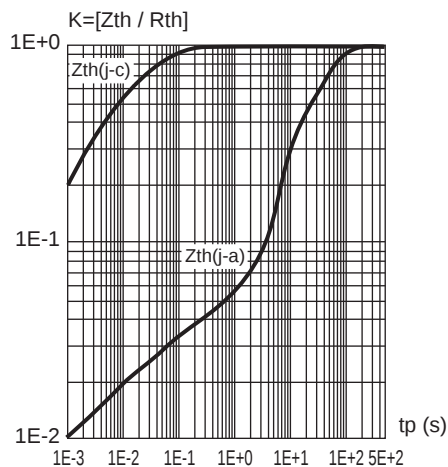


Fig. 4: On-state characteristics (maximum values)

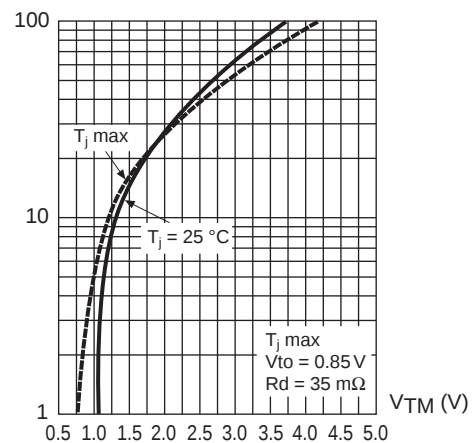


Fig. 5: Surge peak on-state current versus number of cycles

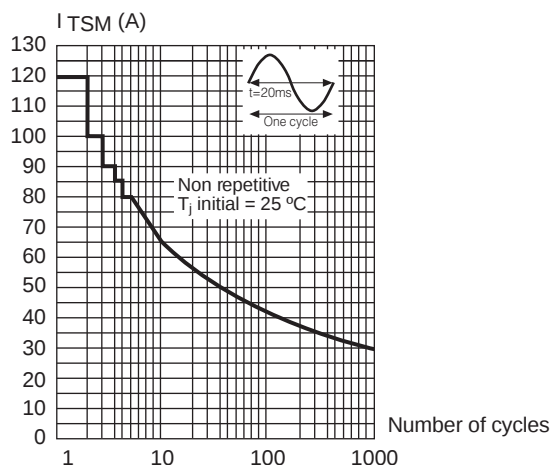
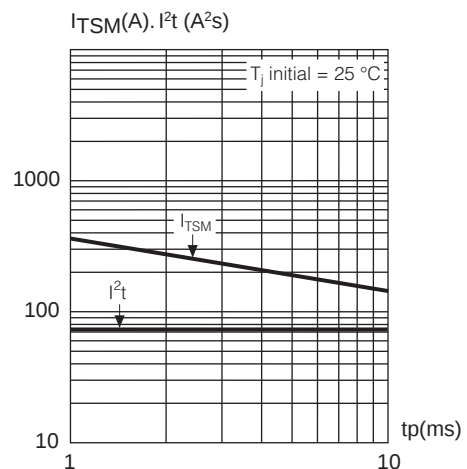


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10$ ms, and corresponding value of I^2t .



STANDARD TRIAC

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

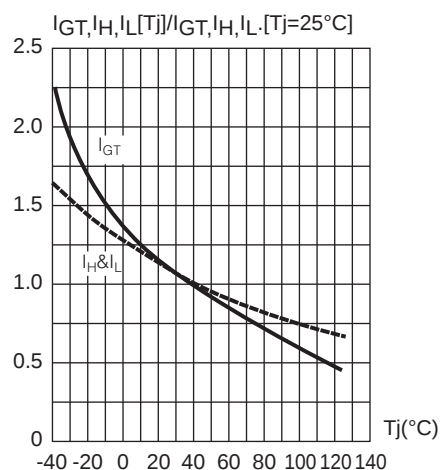


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

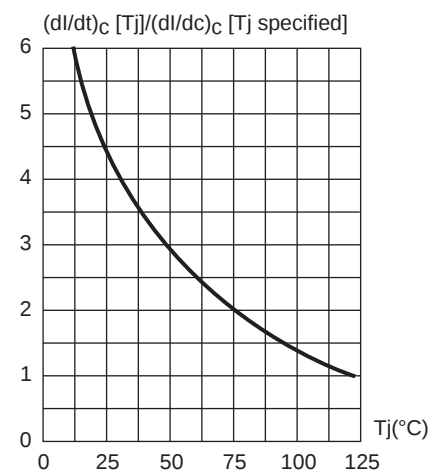
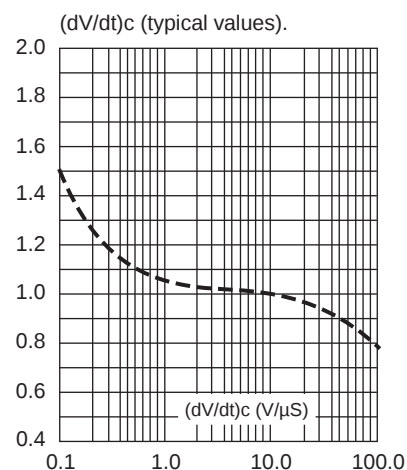
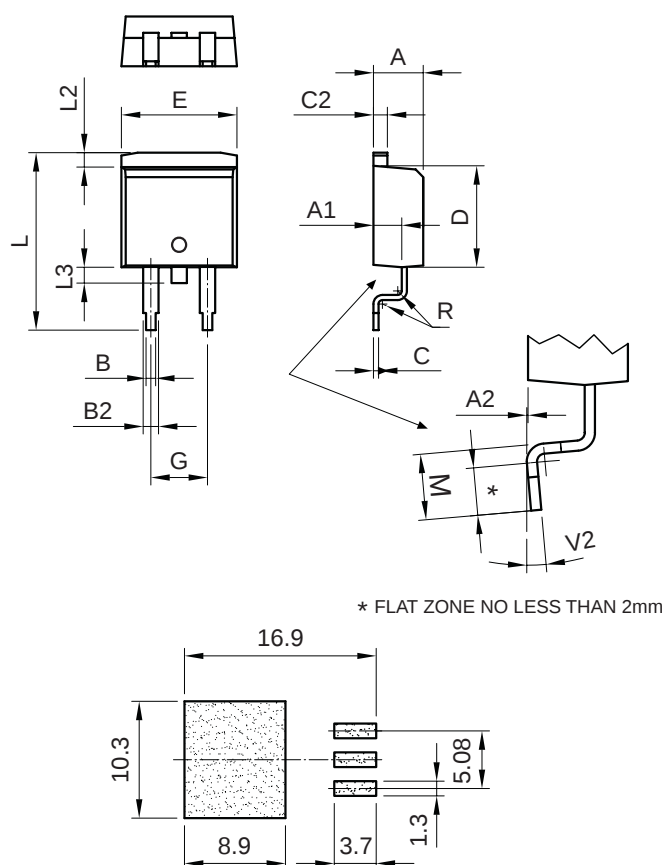


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature



PACKAGE MECHANICAL DATA

D²PAK



REF.	DIMENSIONS		
	Milimeters		
	Min.	Nominal	Max.
A	4.40	4.45	4.60
A1	2.49	2.50	2.69
A2	0.03	0.10	0.23
B	0.70	0.90	0.93
B2	1.14	1.03	1.70
C	0.45	0.45	0.60
C2	1.23	1.23	1.36
D	8.95	9.00	9.35
E	10.00	10.25	10.40
G	4.88	5.15	5.28
L	15.00	15.40	15.85
L2	1.27	1.27	1.40
L3	1.40	1.55	1.75
M	2.40	3.00	3.20
R	0.40 typ		
V2	0°		8°

NOTE: LIMITING VALUES AND LIFE SUPPORT APPLICATIONS (SEE WEB PAGE).