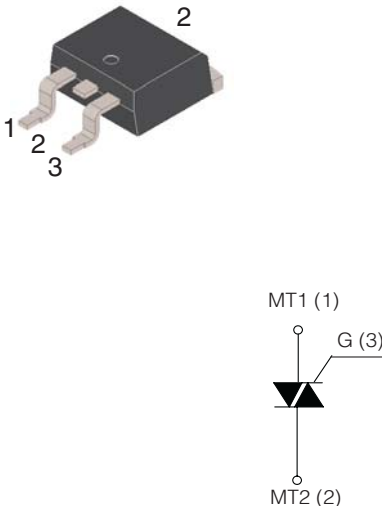




STANDARD TRIAC

TO-263AB / D2PAK 	On-State Current 12 Amp Gate Trigger Current ≤ 100 mA Off-State Voltage 200 V ÷ 800 V
	FEATURES <ul style="list-style-type: none"> • Glass/passivated die junctions • Medium current Triac • Ideal for automated placement • Low thermal resistance • High surge current capability • Low forward voltage drop • Solder dip 260°C, 10s • Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC • Meets MSL level 3, per J-STD-020, LF maximum peak of 260° C <div style="text-align: right;">   RoHS COMPLIANT </div>
	MECHANICAL DATA <ul style="list-style-type: none"> • Case: TO-263AB / D2PAK. Epoxy meets UL 94V-0 flammability rating. • Polarity: As marked on the body. • Terminals: Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test.
	TYPICAL APPLICATIONS Suitable for general purpose AC switching. They can be used as an ON/OFF function in applications such as static relays, heating regulation, induction motor starting circuits... or for phase control operation in light dimmers, motor speed controllers,

Maximun Ratings and Electrical Characteristics at 25°C

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	RMS On-state Current (full sine wave)	All Conduction Angle, $T_c = 105\text{ }^\circ\text{C}$	12	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7\text{ ms}$)	109	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20\text{ ms}$)	100	A
I^2t	Fusing Current	$t_p = 10\text{ ms}$, Half Cycle	78	A^2s
I_{GM}	Peak Gate Current	20 μs max. $T_j = 125\text{ }^\circ\text{C}$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125\text{ }^\circ\text{C}$	1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100ns$ $f = 120\text{ Hz}$, $T_j = 125\text{ }^\circ\text{C}$	50	$A/\mu s$
T_j	Operating Temperature		(-40 +125)	$^\circ\text{C}$
T_{stg}	Storage Temperature		(-40 +150)	$^\circ\text{C}$
T_{sld}	Soldering Temperature	10s max	260	$^\circ\text{C}$

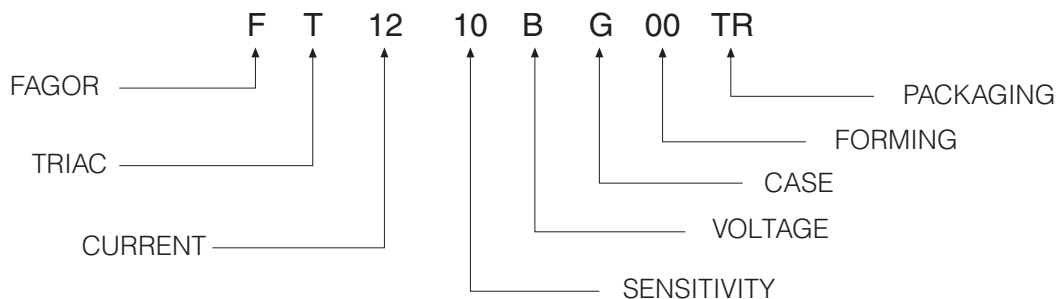
SYMBOL	PARAMETER	VOLTAGE					Unit
		B	D	M	S	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	200	400	600	700	800	V

STANDARD TRIAC
Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY				Unit
					10	13	18	17	
I _{GT} ⁽¹⁾	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	Q1÷Q3	MAX	25	50	25	50	mA
			Q4	MAX	25	75	50	100	
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	Q1÷Q4	MAX	1.3				V
V _{GD}	Gate Non Trigger Voltage	V _D = V _{DRM} , R _L = 3.3 KΩ, T _j = 125 °C	Q1÷Q4	MIN	0.2				V
I _H ⁽²⁾	Holding Current	I _T = 100 mA, Gate open, T _j = 25 °C		MAX	25	50	25	50	mA
I _L	Latching Current	I _G = 1.2 I _{GT} , T _j = 25 °C	Q1, Q3, Q4	MAX	40	70	40	50	mA
			Q2	MAX	60	80	80	100	
dV/dt ⁽²⁾	Critical Rate of Voltage Rise	V _D = 0.67 × V _{DRM} , Gate open T _j = 125 °C		MIN	400	1000	700	400	V/μs
(dV/dt) _c ⁽²⁾	Critical Rate of Commu- tating off-state voltage	(di/dt) _c = 5.3 A/ms T _j = 125 °C		MIN	3	8	5	10	V/μs
V _{TM} ⁽²⁾	On-state Voltage	I _T = 17 Amp, tp = 380 μs, T _j = 25 °C		MAX	1.55				V
V _{t(o)} ⁽²⁾	Threshold Voltage	T _j = 125 °C		MAX	0.80				V
r _d ⁽²⁾	Dynamic resistance	T _j = 125 °C		MAX	70				mΩ
I _{DRM} /I _{RRM}	Off-State Leakage Current	V _D = V _{DRM} , T _j = 125 °C		MAX	1				mA
		V _R = V _{RRM} , T _j = 25 °C		MAX	5				μA
R _{th(j-c)}	Thermal Resistance Junction-Case	for AC 360° conduction angle			1.4				°C/W
R _{th(j-a)}	Thermal Resistance Junction-Ambient	s = 1cm ²			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.

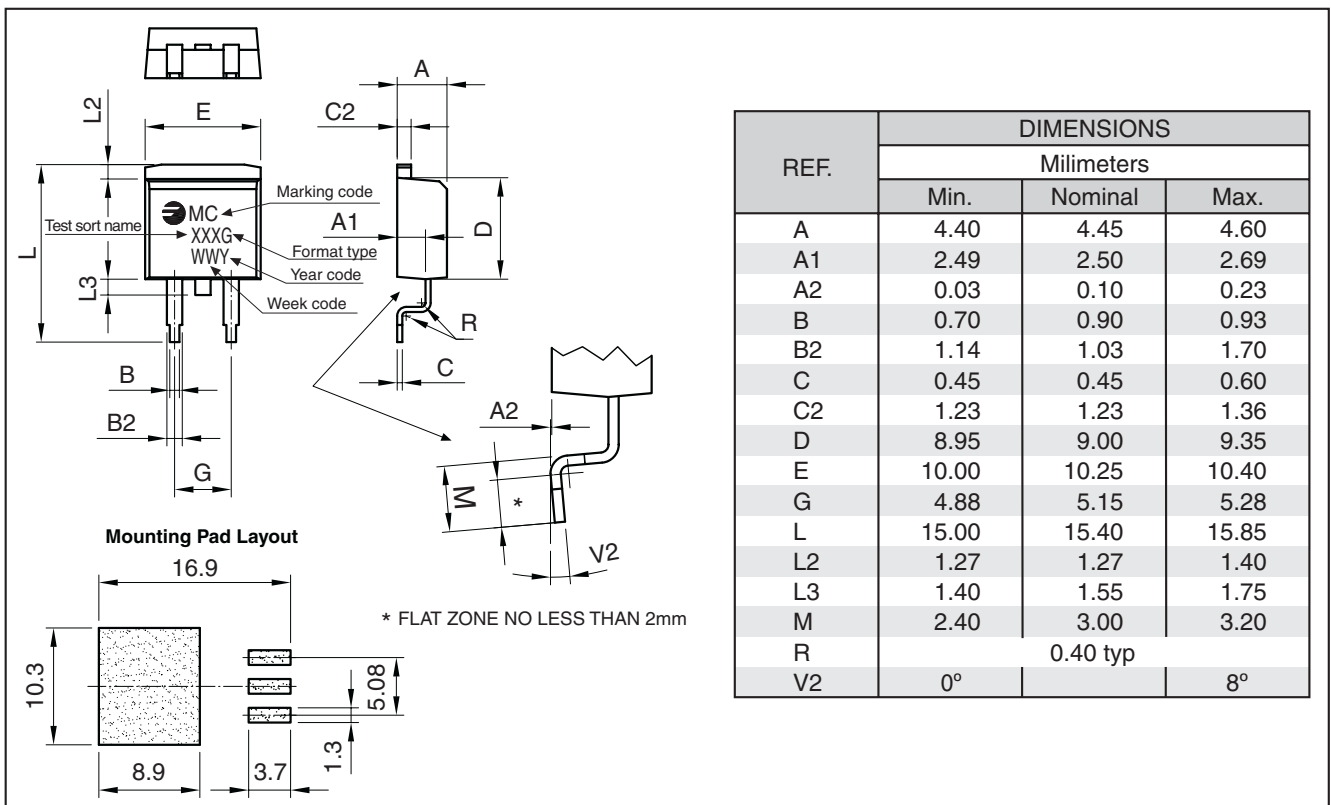
Part Number Information


STANDARD TRIAC

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FT1217MG 00TR	TR	13" diameter tape and reel	800	1.50

Package Outline Dimensions: (mm) TO-263AB / D2PAK



STANDARD TRIAC

Ratings and Characteristics (Ta 25 °C unless otherwise noted)

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

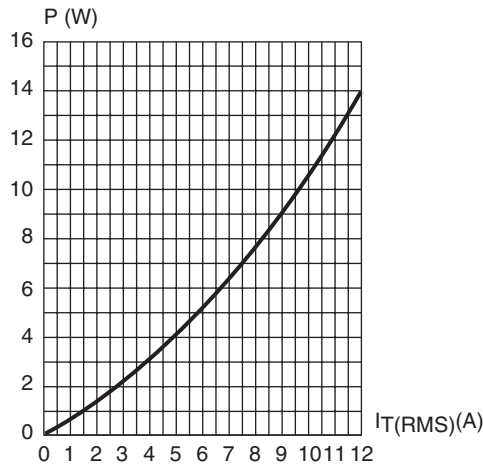


Fig. 2: RMS on-state current versus case temperature (full cycle).

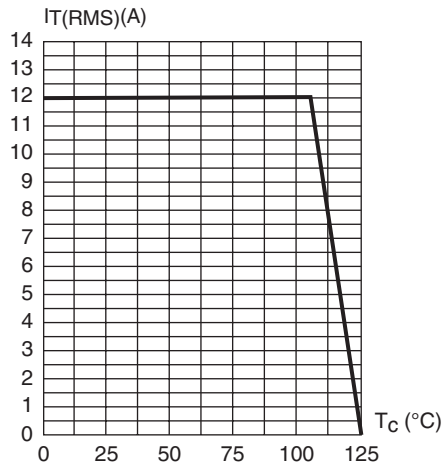


Fig. 3: Relative variation of thermal impedance versus pulse duration.

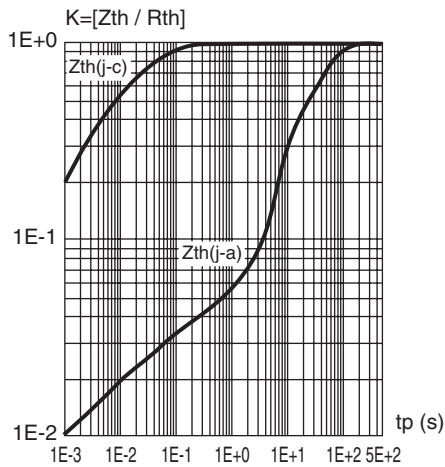


Fig. 5: Surge peak on-state current versus number of cycles

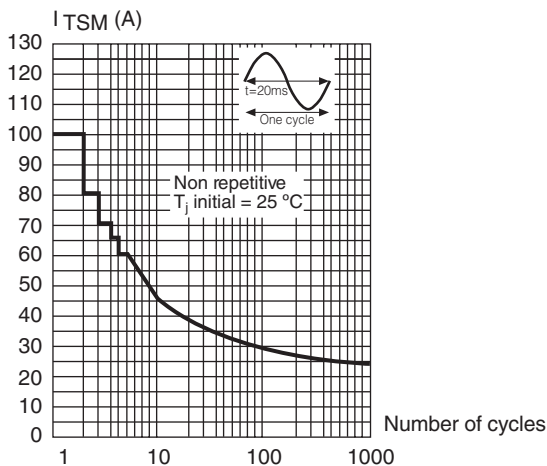


Fig. 4: On-state characteristics (maximum values)

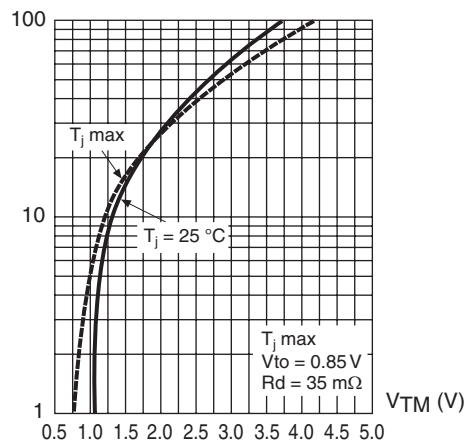
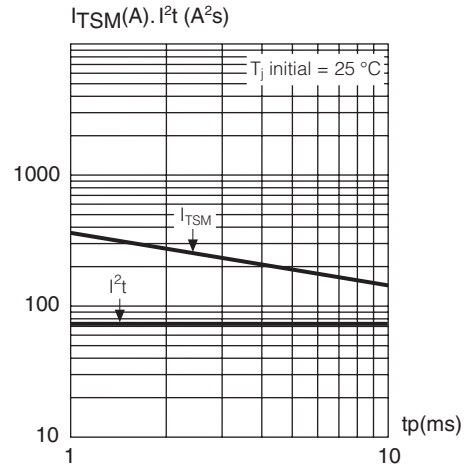


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 10 ms, and corresponding value of I²t.



STANDARD TRIAC

Ratings and Characteristics (Ta 25 °C unless otherwise noted)

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

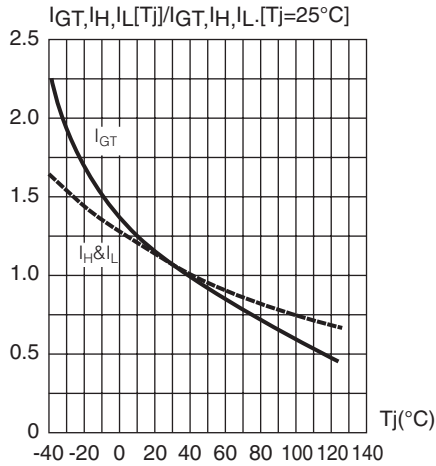


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

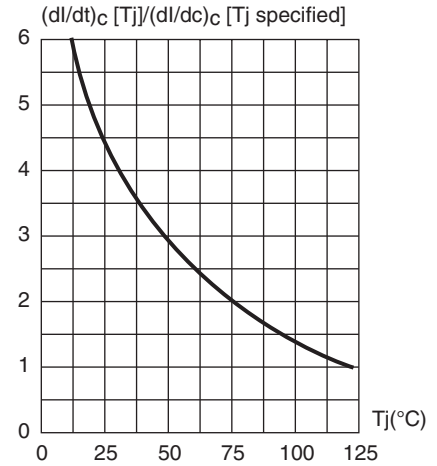


Fig. 9: Relative variation of critical rate of decrease of main current versus

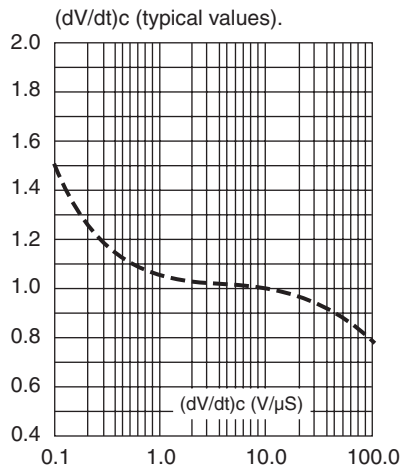
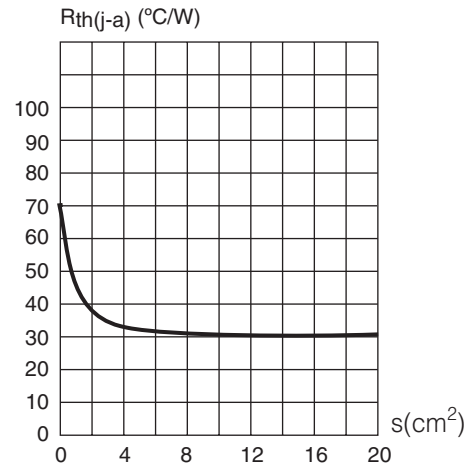


Fig. 10: D2PAK thermal resistance junction to ambient versus copper surface under tab (printed circuit board copper thickness: 35μ)



STANDARD TRIAC

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