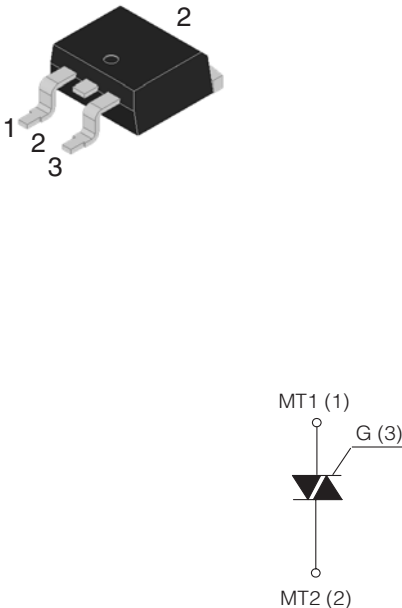



STANDARD TRIAC

<p style="text-align: center;">TO-263AB (D2PAK)</p> 	<p>On-State Current 12 Amp</p> <p>Gate Trigger Current ≤ 100 mA</p> <p>Off-State Voltage 400 V ÷ 800 V</p>	
	<p>FEATURES</p> <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 2011/65/EU and WEEE 2002/96/EC • Meets MSL level 3, per J-STD-020, LF maximum peak of 260° C 	
	<p>MECHANICAL DATA</p> <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. 	
	<p>TYPICAL APPLICATIONS</p> <p>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,</p>	

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, $T_c = 105\text{ °C}$	12	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7\text{ ms}$)	110	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	50	A^2s
I_{GM}	Peak Gate Current	20 μs 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	$I_G = 2 \times I_{GT}$, $t_r \leq 100ns$ $f = 120\text{ Hz}$, $T_j = 125\text{ °C}$	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
		D	M	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	400	600	800	V

STANDARD TRIAC

Electrical Characteristics at Tamb = 25 °C

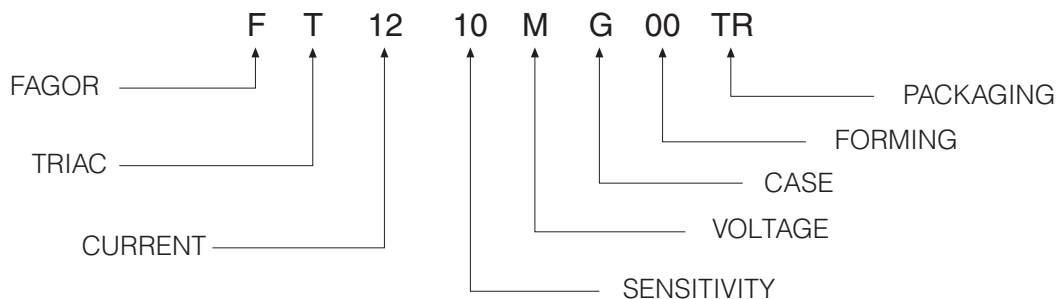
SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY			Unit
					10	18	17	
I _{GT} ⁽¹⁾	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	Q1÷Q3	MAX	25	25	50	mA
			Q4	MAX	25	50	100	
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 33Ω, T _j = 25 °C	Q1÷Q4	MAX	1.3			V
V _{GD}	Gate Non 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	25	50	mA
I _L	Latching Current	I _G = 1.2 I _{GT} , T _j = 25 °C	Q1, Q3, Q4	MAX	40	40	70	mA
			Q2	MAX	60	80	100	
dV/dt ⁽²⁾	Critical Rate of Voltage Rise	V _D = 0.67 × V _{DRM} , Gate open T _j = 125 °C		MIN	200	200	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	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	0.85			V
r _d ⁽²⁾	Dynamic resistance	T _j = 125 °C		MAX	35			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			
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 ⁽³⁾ = 1 cm ²			45			°C/W

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

(2) For either polarity of electrode 2 voltage with reference to electrode 1.

(3) S: Cooper surface under tab.

Part Number Information

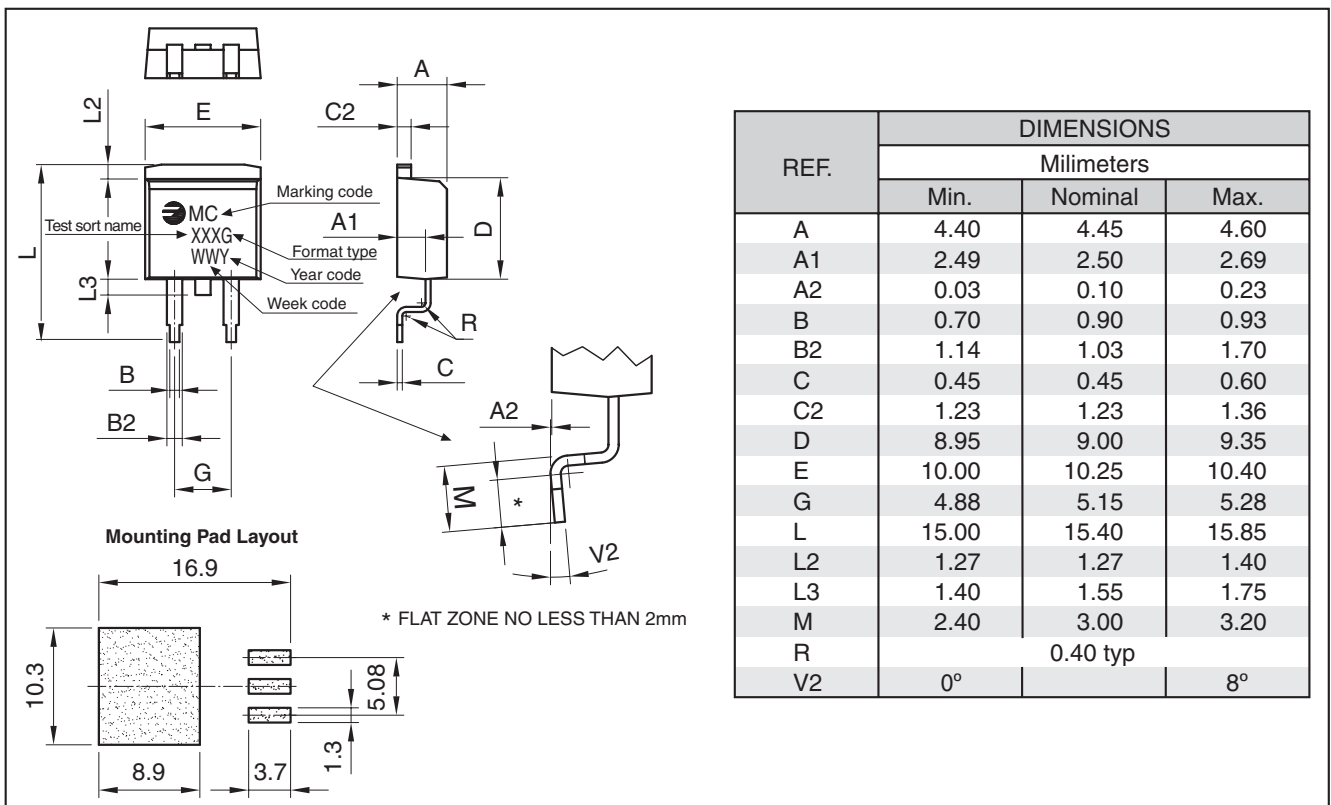


STANDARD TRIAC

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)

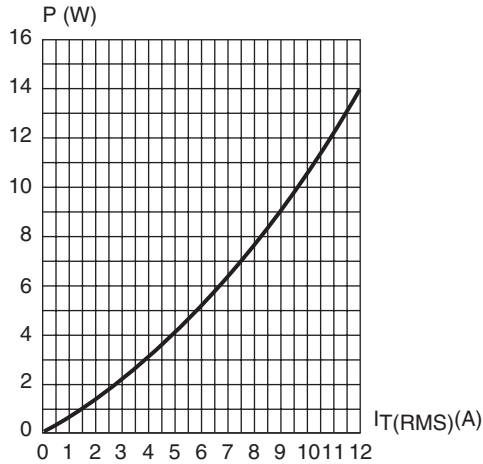


Fig. 2: RMS on-state current versus case temperature (full cycle).

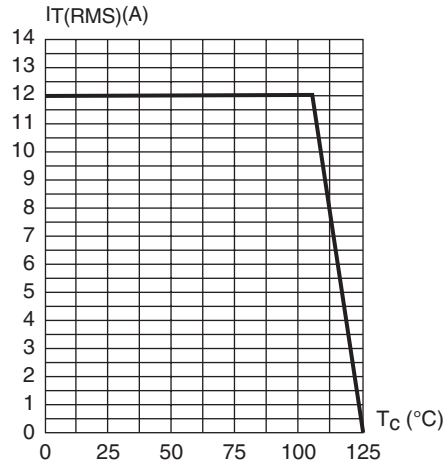


Fig. 3: Relative variation of thermal impedance versus pulse duration.

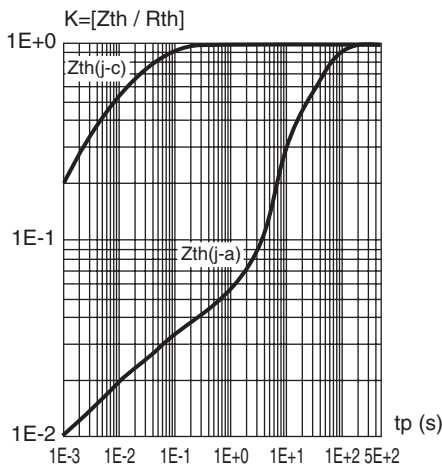


Fig. 4: On-state characteristics (maximum values)

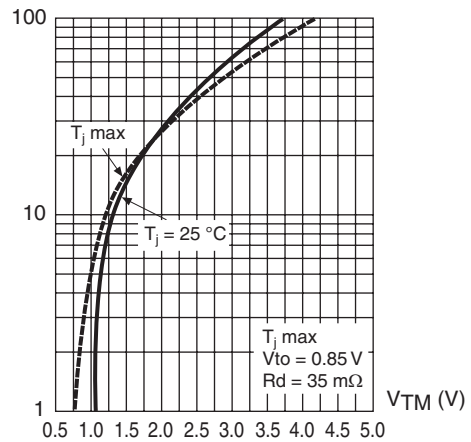


Fig. 5: Surge peak on-state current versus number of cycles

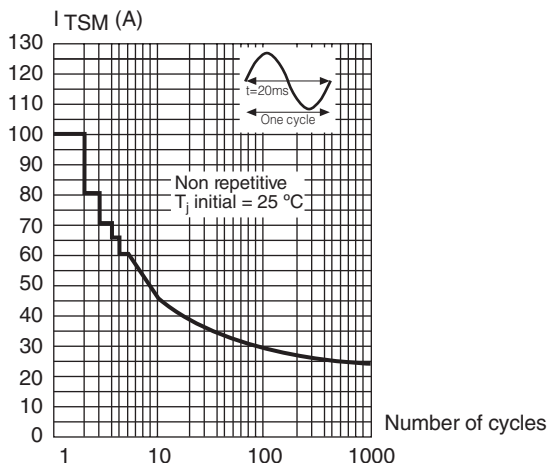
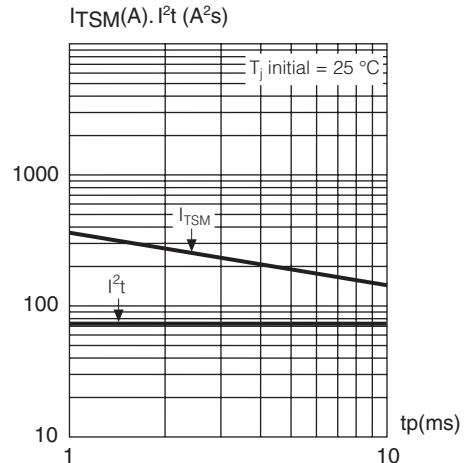


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 10 ms, and corresponding value of I²t.



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)

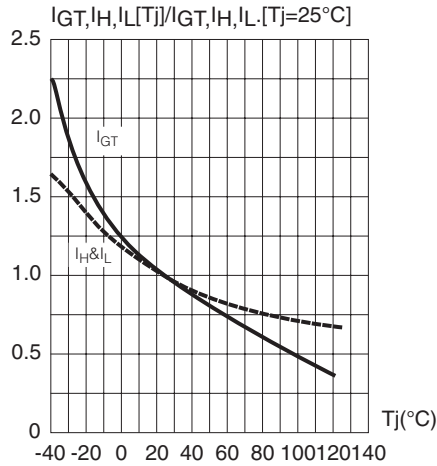


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

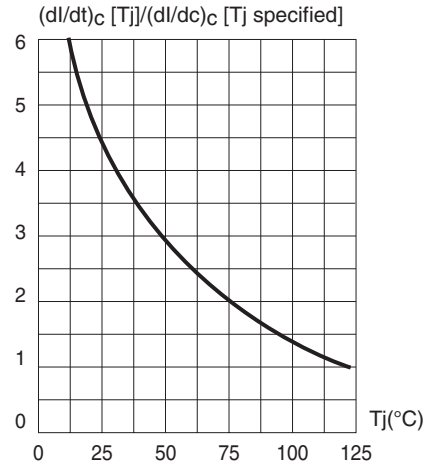


Fig. 9: Relative variation of critical rate of decrease of main current versus

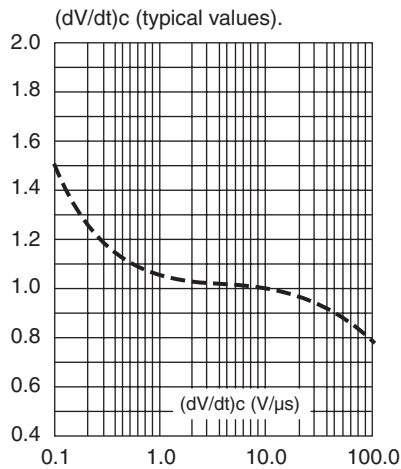
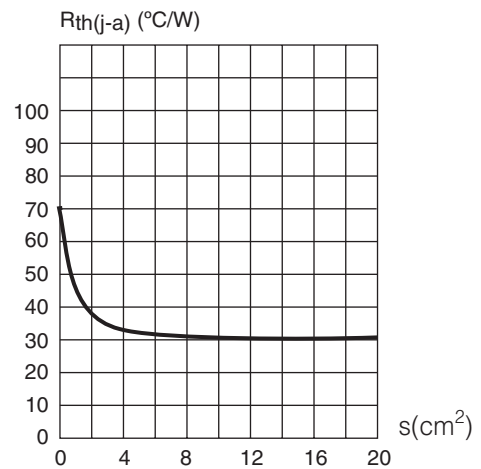


Fig. 10: D2PAK thermal resistance junction to ambient versus copper surface under tab (printed circuit board copper thickness: 35μ)



STANDARD TRIAC**Revision History**

Date	Revision	Description of Changes
10-Jan-2012	0	Original Data Sheet
24-May-2017	1	Eliminated: 200V, 700V and Sensitivity 13

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