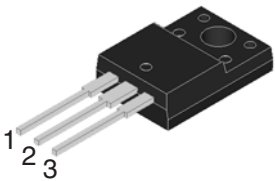
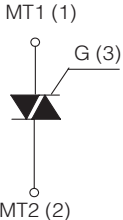


STANDARD TRIAC

TO-220F (FULLY ISOLATED CASE)  	On-State Current Gate Trigger Current 10 Amp ≤ 100 mA Off-State Voltage 400 V ÷ 800 V
	FEATURES • 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   RoHS COMPLIANT
	MECHANICAL DATA • Case: TO-220F. 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, $T_c = 105^\circ C$	10	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7$ ms)	105	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20$ ms)	100	A
I^2t	Fusing Current	$t_p = 10$ ms, Half Cycle	55	A ² s
I_{GM}	Peak Gate Current	20 μ s max. $T_j = 125^\circ C$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ C$	1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100$ ns $f = 120$ Hz, $T_j = 125^\circ C$	50	A/ μ s
T_j	Operating Temperature		(-40 +125)	°C
T_{stg}	Storage Temperature		(-40 +150)	°C
T_{sld}	Soldering Temperature	10s max	260	°C
V_{iso}	R.M.S. isolation voltage 50/60 Hz sinusoidal waveform		2.500	Vac

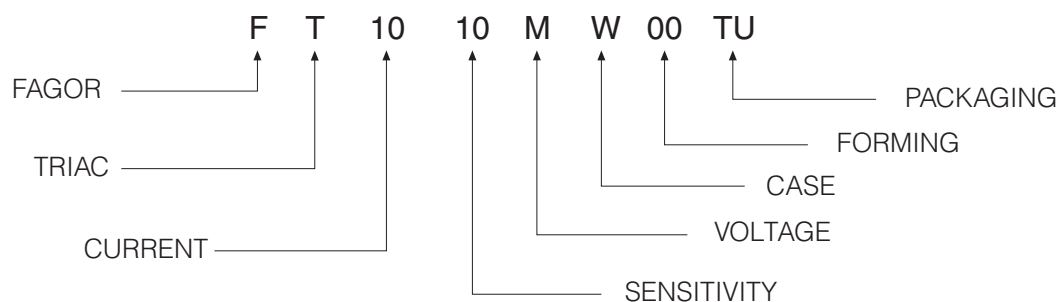
SYMBOL	PARAMETER	VOLTAGE			Unit
		D	M	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	400	600	800	V

STANDARD TRIAC
Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY			Unit
					10	18	17	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3	MAX	25	25	10	mA
			Q4	MAX	25	50	100	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	25	50	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1,Q3,Q4	MAX	40	40	70	mA
			Q2	MAX	60	80	100	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	500	700	1000	V/ μs
$(dV/dt)_c^{(2)}$	Critical Rise Rate of Commutating off-state voltage	$(dI/dt)_c = 2.7 \text{ A/ms}, T_j = 125^\circ C$		MIN	3	5	10	V/ μs
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 14 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		MAX	1.55			V
$V_{t(o)}^{(2)}$	Threshold Voltage	$T_j = 125^\circ C$		MAX	0.85			V
$r_d^{(2)}$	Dynamic resistance	$T_j = 125^\circ C$		MAX	40			m Ω
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			μA
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			3.2			°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				50			°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.

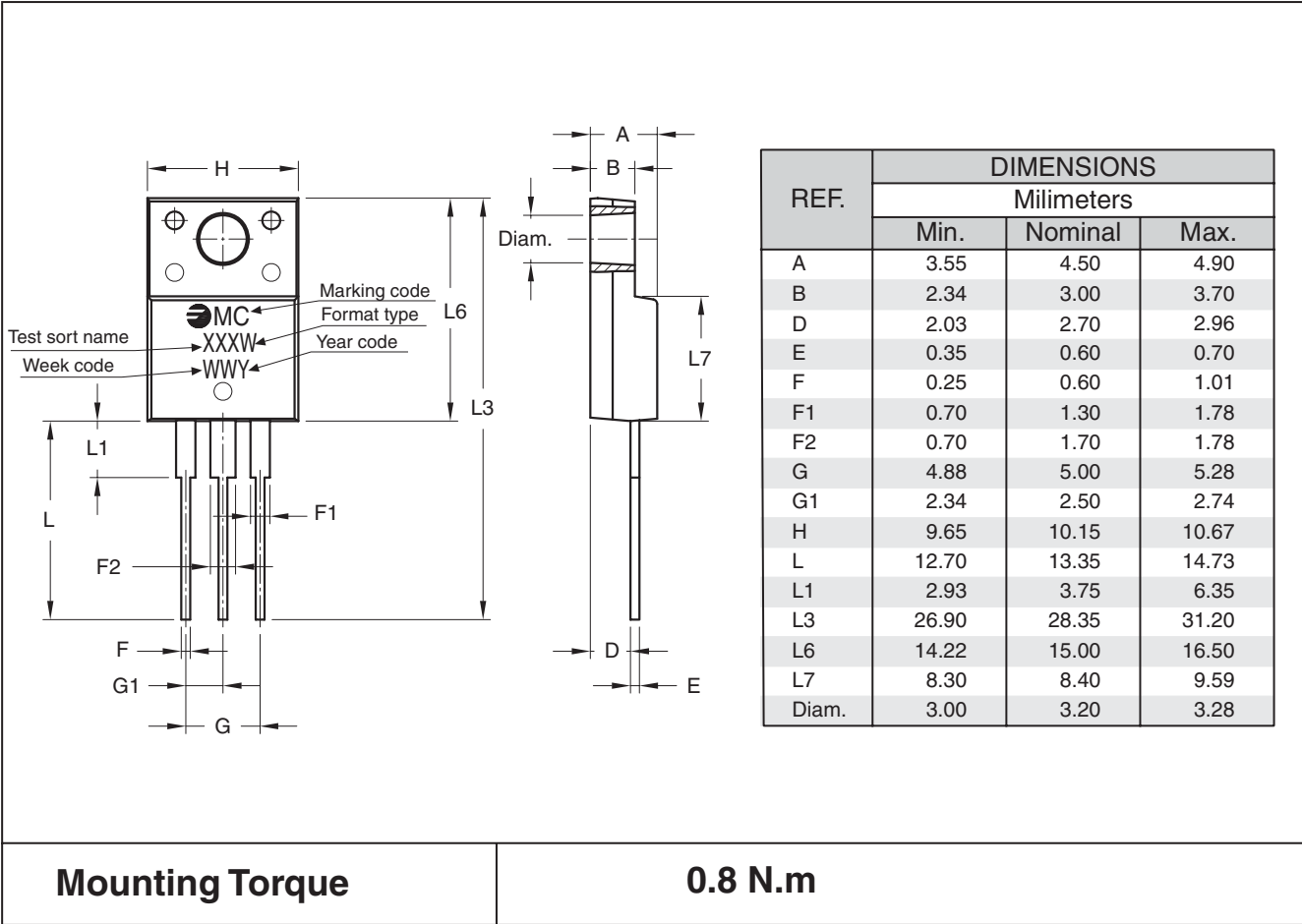
Part Number Information


STANDARD TRIAC

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FT1010MW 00TU	TU	TUBE	1,000	2.00

Package Outline Dimensions: (mm) TO-220F



STANDARD TRIAC

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

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

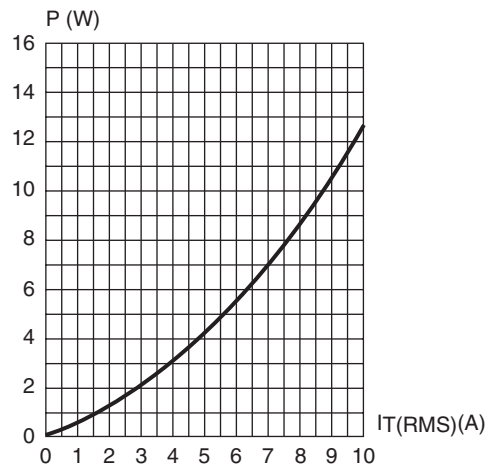


Fig. 2: RMS on-state current versus case temperature (full cycle).

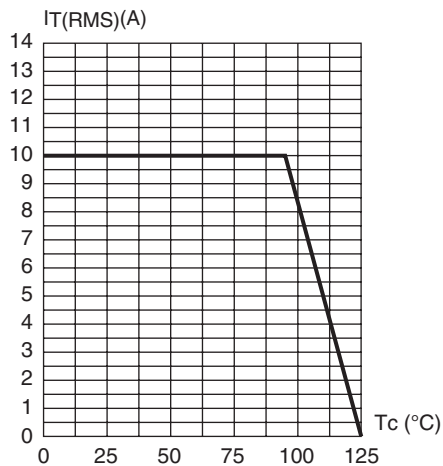


Fig. 3: Relative variation of thermal impedance versus pulse duration.

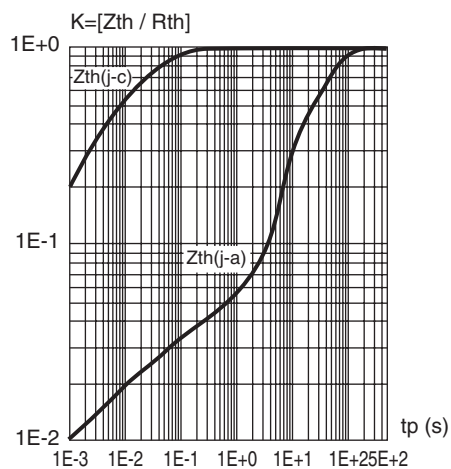


Fig. 4: On-state characteristics (maximum values)

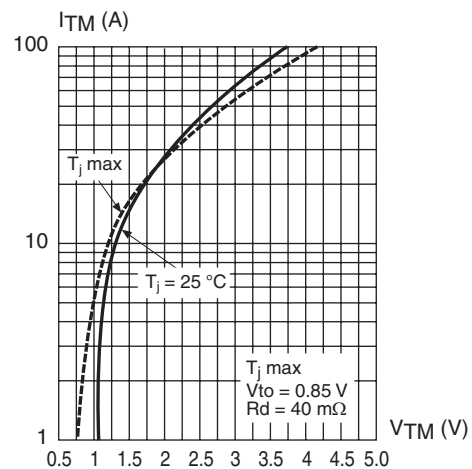


Fig. 5: Surge peak on-state current versus number of cycles

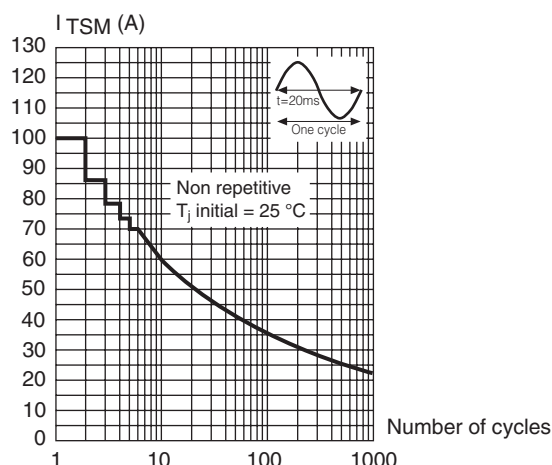
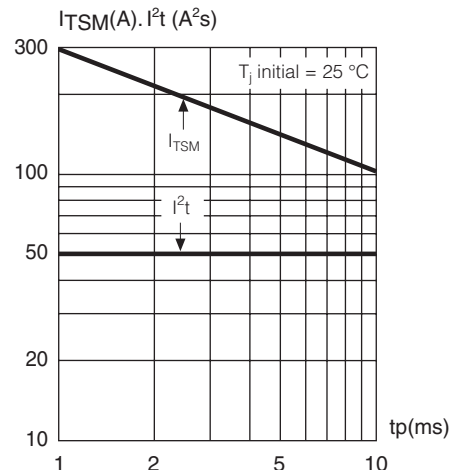


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 10 ms, and corresponding value of I²t.



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

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

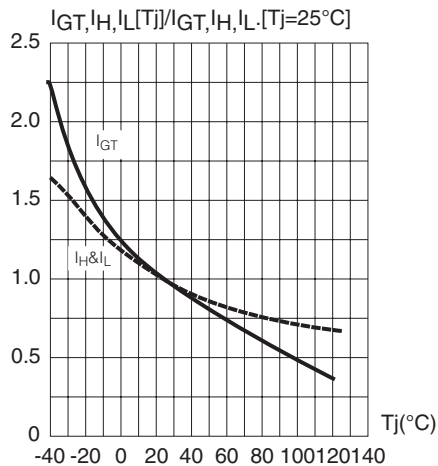


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

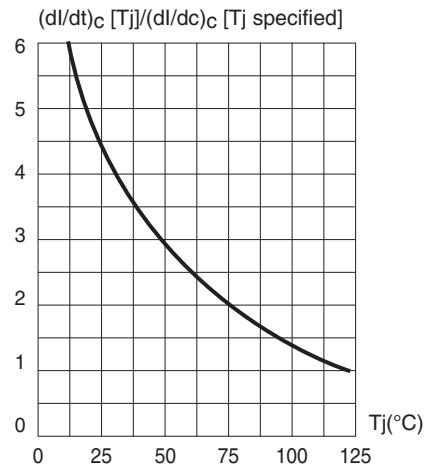
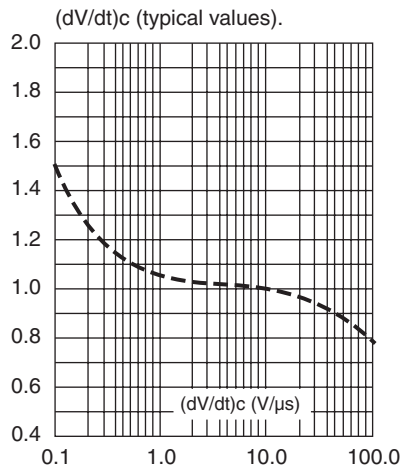


Fig. 9: Relative variation of critical rate of decrease of main current versus



STANDARD TRIAC**Revision History**

Date	Revision	Description of Changes
12-Jun-2007	0	Original Data Sheet
22-May-2017	1	Eliminated: 200V, 700V and Sensitivity 13

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