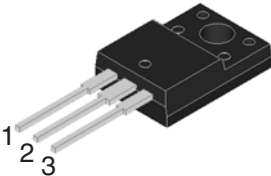
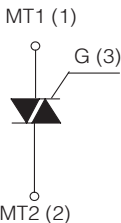


LOGIC LEVEL TRIAC

<p>TO-220F (FULLY ISOLATED CASE)</p>  	<table> <tr> <td>On-State Current 25 Amp</td><td>Gate Trigger Current ≤ 10 mA</td></tr> <tr> <td colspan="2">Off-State Voltage 400 V ÷ 800 V</td></tr> <tr> <td colspan="2"> FEATURES <ul style="list-style-type: none"> • Glass/passivated die junctions • High 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 </td></tr> <tr> <td colspan="2"> MECHANICAL DATA <ul style="list-style-type: none"> • 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. </td></tr> <tr> <td colspan="2"> TYPICAL APPLICATIONS Logic level versions are designed to interface directly with low power drivers such as microcontrollers. </td></tr> </table>	On-State Current 25 Amp	Gate Trigger Current ≤ 10 mA	Off-State Voltage 400 V ÷ 800 V		FEATURES <ul style="list-style-type: none"> • Glass/passivated die junctions • High 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 		MECHANICAL DATA <ul style="list-style-type: none"> • 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 Logic level versions are designed to interface directly with low power drivers such as microcontrollers.	
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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, $T_c = 75^\circ C$	25	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7$ ms)	215	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20$ ms)	200	A
I^2t	Fusing Current	$t_p = 10$ ms, Half Cycle	205	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

LOGIC LEVEL TRIAC

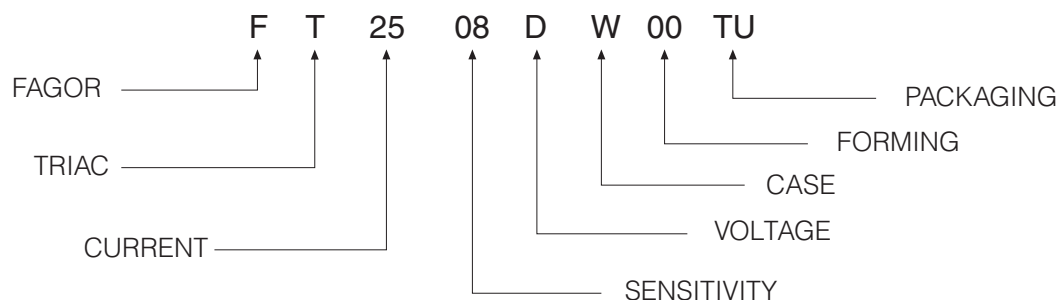
Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY	Unit
					08	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3	MAX	10	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	$V_D = V_{DRM}, R_L = 3.3 K\Omega, T_j = 125^\circ C$	Q1÷Q3	MIN	0.2	V
$I_H^{(2)}$	Holding Current	$I_T = 100 mA, \text{Gate open}, T_j = 25^\circ C$		MAX	15	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1,Q3	MAX	25	mA
			Q2	MAX	30	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	60	V/ μs
$(dV/dt)_C^{(2)}$	Critical Rate of Current Rise	$(dv/dt)_C = 0.1 V/\mu s \quad T_j = 125^\circ C$ $(dv/dt)_C = 10 V/\mu s \quad T_j = 125^\circ C$		MIN	12	A/ms
				MIN	3.2	A/ms
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 35 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		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	16	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	2	mA
				MAX	5	μA
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			2.5	°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient				55	°C/W

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

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

Part Number Information

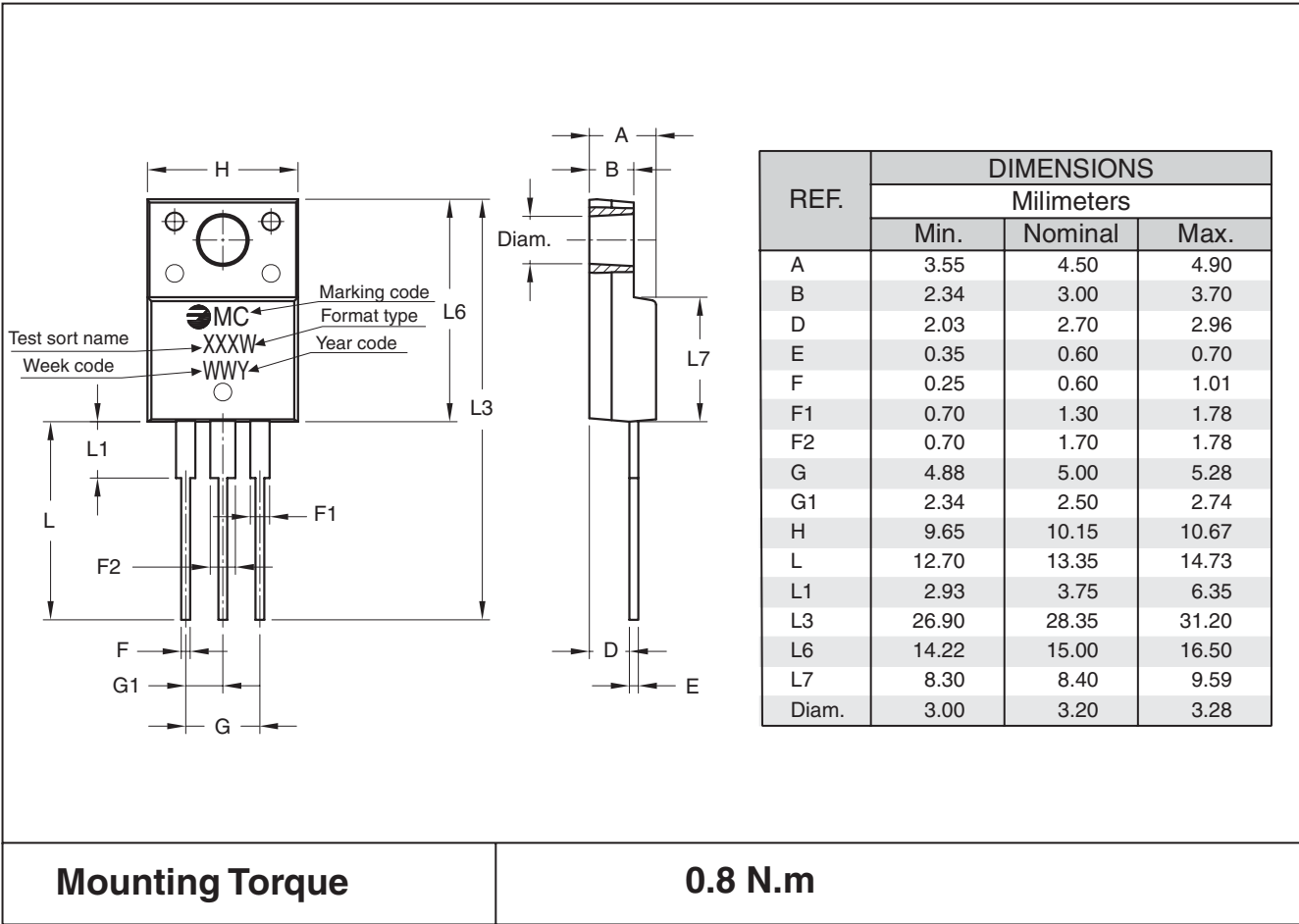


LOGIC LEVEL TRIAC

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FT2508MW 00TU	TU	TUBE	1,000	2.00

Package Outline Dimensions: (mm) TO-220F



LOGIC LEVEL TRIAC

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

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

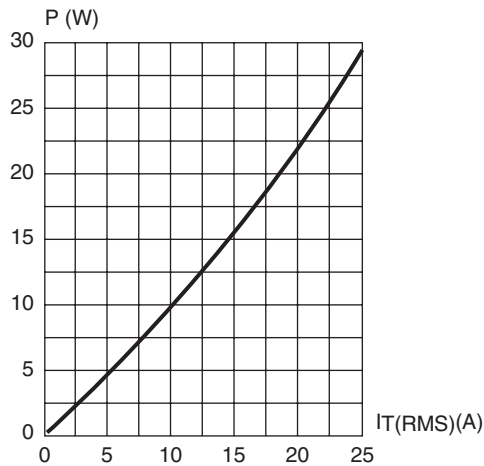


Fig. 2: RMS on-state current versus case temperature (full cycle).

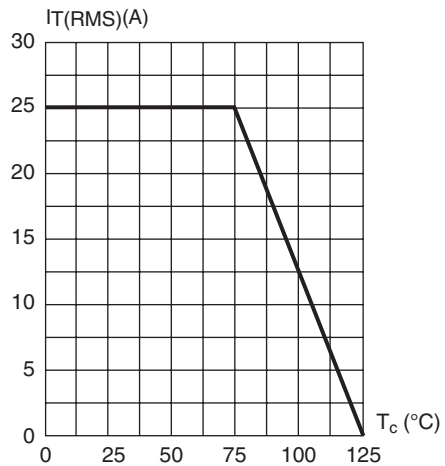


Fig. 3: Relative variation of thermal impedance versus pulse duration.

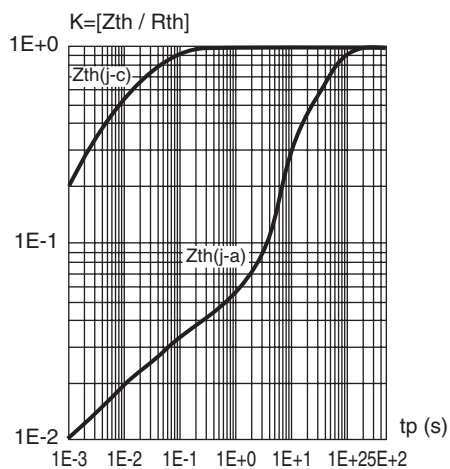


Fig. 4: On-state characteristics (maximum values)

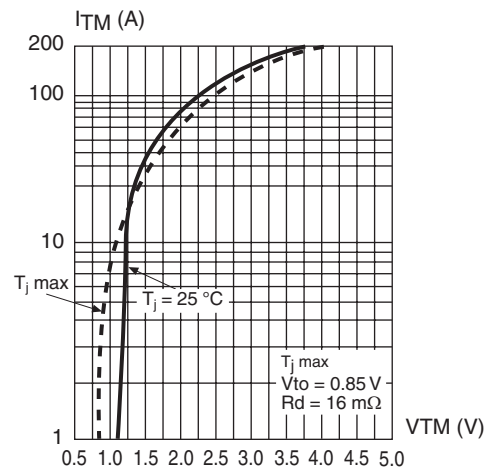


Fig. 5: Surge peak on-state current versus number of cycles

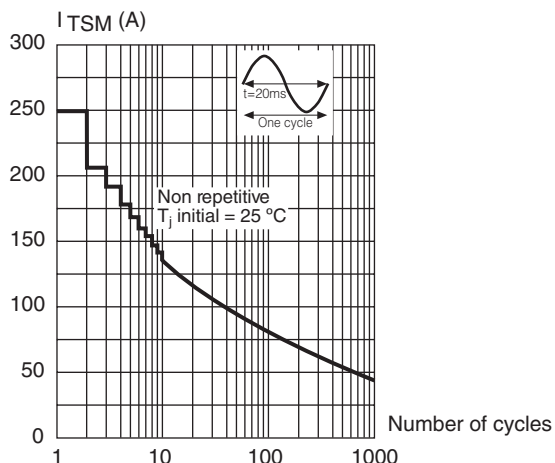
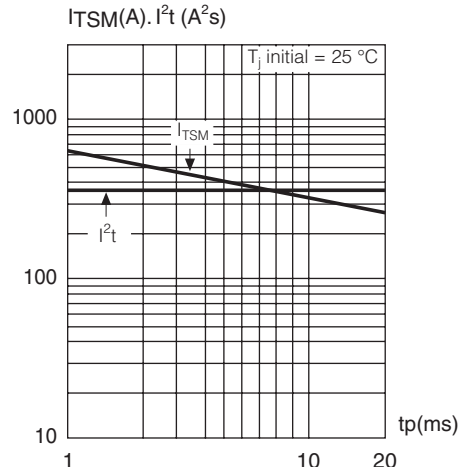


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 20$ ms, and corresponding value of I^2t .



LOGIC LEVEL 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)

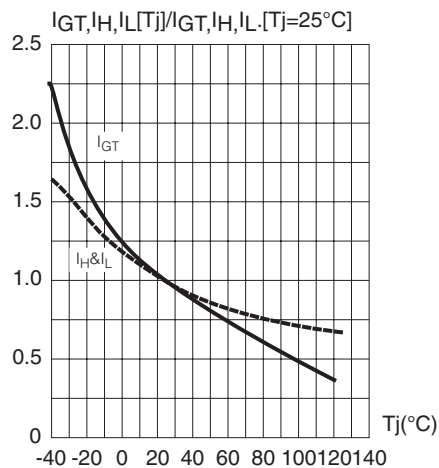


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

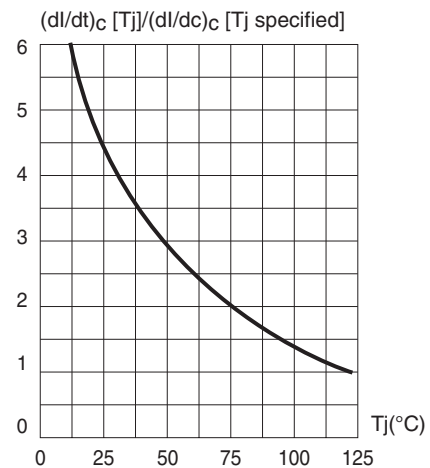
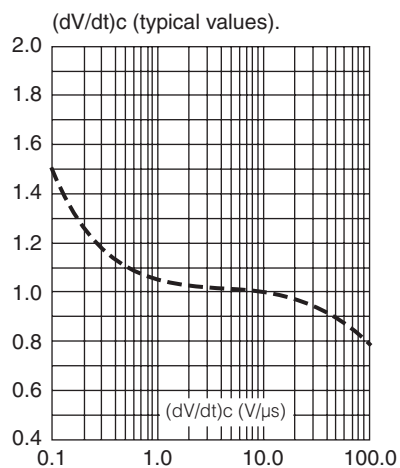


Fig. 9: Relative variation of critical rate of decrease of main current versus



LOGIC LEVEL TRIAC**Revision History**

Date	Revision	Description of Changes
14-Jun-2011	0	Original Data Sheet
11-Feb-2015	1	200V and 700V eliminated

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