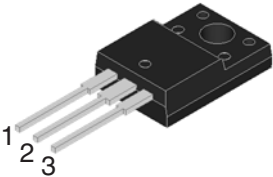
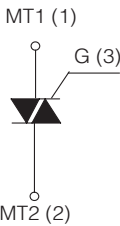


LOGIC LEVEL TRIAC

TO-220F (FULLY ISOLATED CASE)  	<table> <tr> <td>On-State Current 16 Amp</td><td>Gate Trigger Current < 10 mA</td></tr> <tr> <td colspan="2">Off-State Voltage 400 V ÷ 800 V</td></tr> </table> 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 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 Logic level versions are designed to interface directly with low power drivers such as microcontrollers.	On-State Current 16 Amp	Gate Trigger Current < 10 mA	Off-State Voltage 400 V ÷ 800 V	
On-State Current 16 Amp	Gate Trigger Current < 10 mA				
Off-State Voltage 400 V ÷ 800 V					

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, $T_c = 95^\circ C$	16	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7$ ms)	176	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20$ ms)	160	A
I^2t	Fusing Current	$t_p = 10$ ms, Half Cycle	128	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

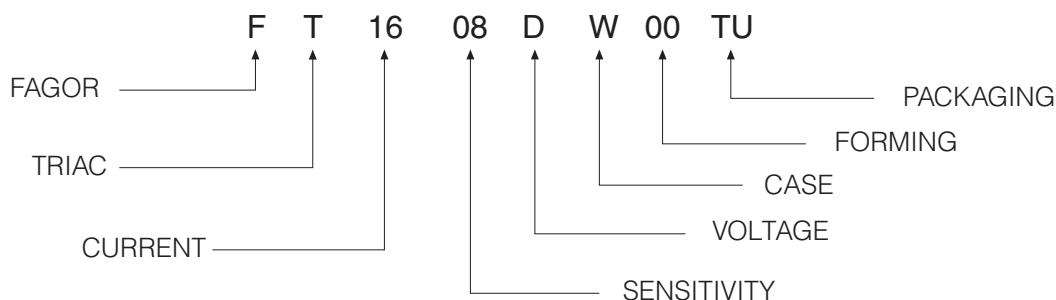
SYMBOL	PARAMETER	VOLTAGE			Unit
		D	M	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	400	600	800	V

LOGIC LEVEL TRIAC
Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY		Unit
					08	09	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}$, $R_L = 33\Omega$, $T_j = 25\text{ °C}$	Q1÷Q3 Q4	MAX MAX	10	10 10	mA mA
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}$, $R_L = 33\Omega$, $T_j = 25\text{ °C}$	Q1÷Q3 Q1÷Q4	MAX MAX	1.3	1.3	V V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}$, $R_L = 3.3\text{ K}\Omega$, $T_j = 125\text{ °C}$	Q1÷Q3 Q1÷Q4	MIN MIN	0.2	0.2	V V
$I_H^{(2)}$	Holding Current	$I_T = 100\text{ mA}$, Gate open, $T_j = 25\text{ °C}$		MAX	15	20	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}$, $T_j = 25\text{ °C}$	Q1,Q3 Q1,Q3,Q4 Q2	MAX MAX MAX	25 30	20 25	mA mA mA
$dV/dt^{(2)}$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}$, Gate open $T_j = 125\text{ °C}$		MIN	40	50	V/ μ s
$(dI/dt)^{(2)}$	Critical Rate of Current Rise	$(dv/dt)_c = 0.1\text{ V}/\mu\text{s}$ $T_j = 125\text{ °C}$ $(dv/dt)_c = 10\text{ V}/\mu\text{s}$ $T_j = 125\text{ °C}$ without snubber $T_j = 125\text{ °C}$		MIN MIN MIN	8.5 3.0	2.5 1.5	A/ms A/ms
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 22.5\text{ Amp}$, $t_p = 380\text{ }\mu\text{s}$, $T_j = 25\text{ °C}$		MAX	1.55		V
$V_{t(o)}^{(2)}$	Threshold Voltage	$T_j = 125\text{ °C}$		MAX	0.77		V
$r_d^{(2)}$	Dynamic resistance	$T_j = 125\text{ °C}$		MAX	30		m Ω
I_{DRM}/I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}$, $T_j = 125\text{ °C}$ $V_R = V_{RRM}$, $T_j = 25\text{ °C}$		MAX MAX	2 5		mA μ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			2.7		°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.

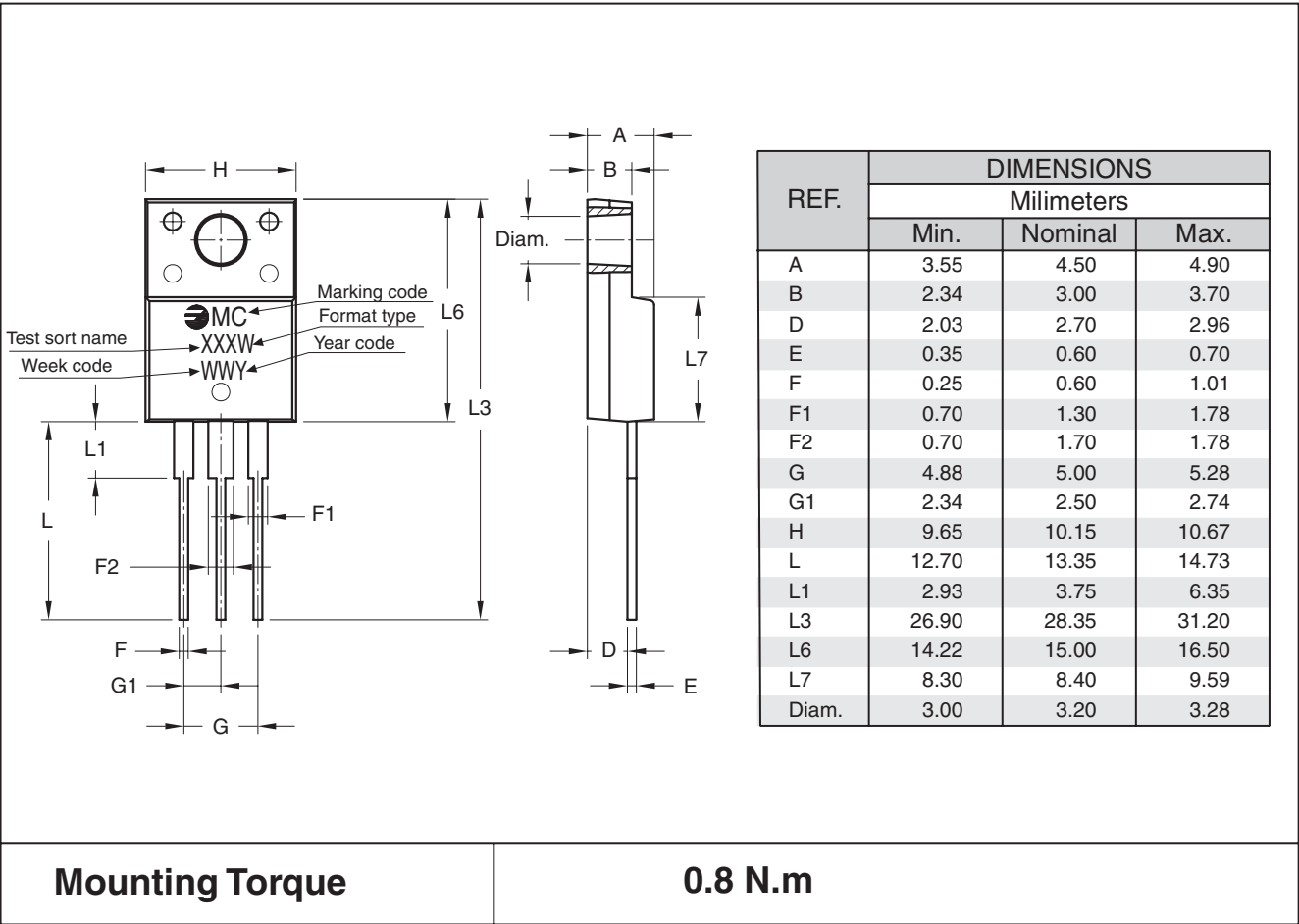
Part Number Information


LOGIC LEVEL TRIAC

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FT1608MW 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)

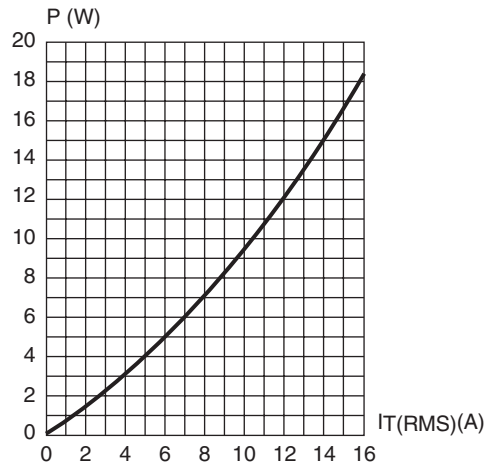


Fig. 2: RMS on-state current versus case temperature (full cycle).

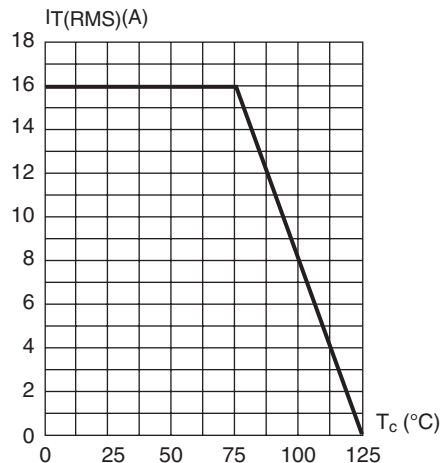


Fig. 3: Relative variation of thermal impedance versus pulse duration.

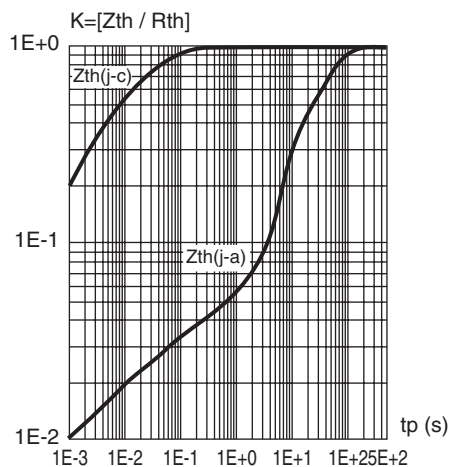


Fig. 4: On-state characteristics (maximum values)

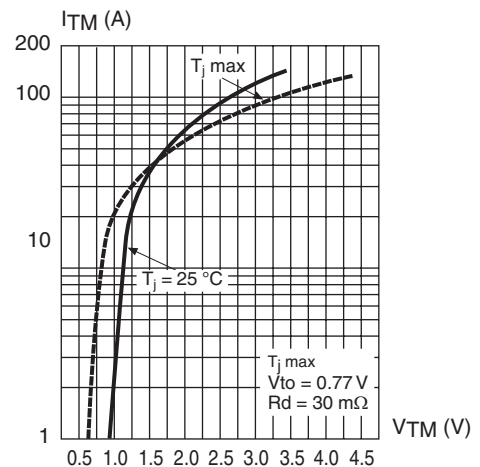


Fig. 5: Surge peak on-state current versus number of cycles

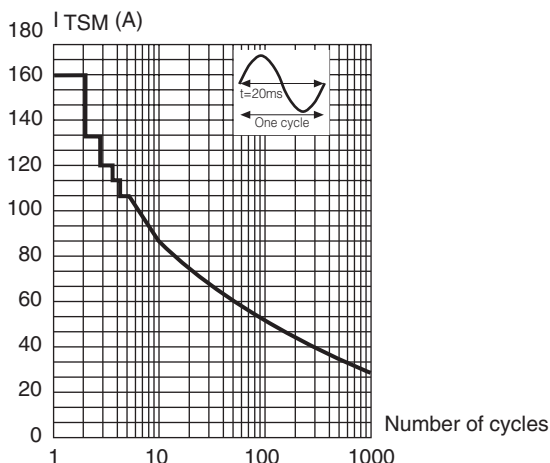
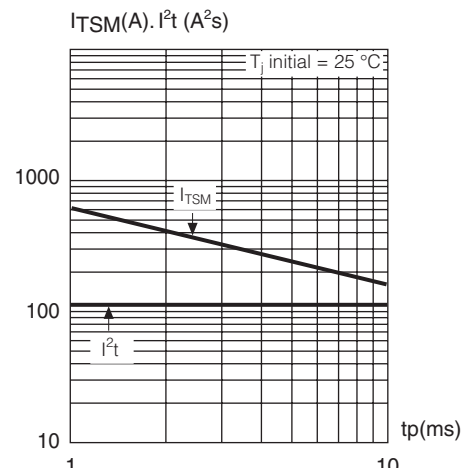


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10$ ms, and corresponding value of I^2t .



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

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

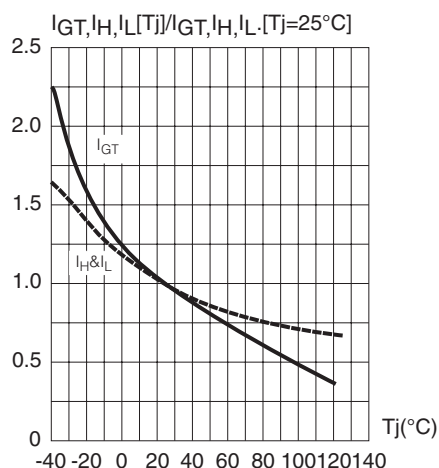


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

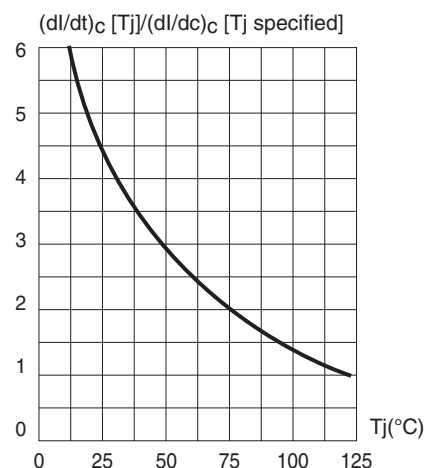
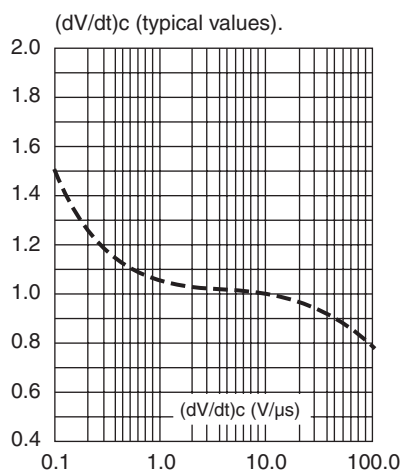


Fig. 9: Relative variation of critical rate of decrease of main current versus



LOGIC LEVEL TRIAC**Revision History**

Date	Revision	Description of Changes
Abr-2005	0	Original Data Sheet
Feb-2016	1	200V and 700V eliminated

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