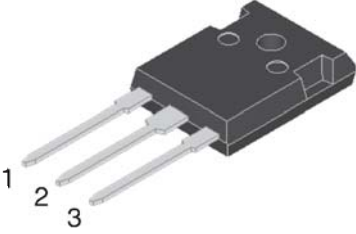
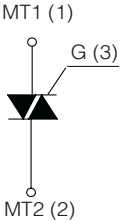




HIGH COMMUTATION TRIAC

<p style="text-align: center; font-weight: bold; font-size: 1.2em;">TO-3P / TO-247AD</p>  <div style="text-align: center; margin-top: 20px;">  </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">On-State Current 40 Amp</td> <td style="width: 50%; padding: 5px;">Gate Trigger Current ≤ 50 mA (16)</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;">Off-State Voltage 600 V ÷ 800 V</td> </tr> </table> <hr/> <p>FEATURES</p> <ul style="list-style-type: none"> Glass/passivated die junctions High current Triac Low thermal resistance with clip bonding High commutation 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; margin-top: 10px;">   RoHS <small>COMPLIANT</small> </div> <hr/> <p>MECHANICAL DATA</p> <ul style="list-style-type: none"> Case: TO-3P / TO-247AD. 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. <hr/> <p>TYPICAL APPLICATIONS</p> <ul style="list-style-type: none"> Used on inductive loads, thanks to their high commutation performances. 	On-State Current 40 Amp	Gate Trigger Current ≤ 50 mA (16)	Off-State Voltage 600 V ÷ 800 V	
On-State Current 40 Amp	Gate Trigger Current ≤ 50 mA (16)				
Off-State Voltage 600 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, $T_c = 80\text{ °C}$	40	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7\text{ ms}$)	420	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20\text{ ms}$)	400	A
I^2t	Fusing Current	$t_p = 10\text{ ms}$, Half Cycle	1000	A^2s
I_{GM}	Peak Gate Current	$20\text{ }\mu s$ max. $T_j = 125\text{ °C}$	8	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	$I_G = 2x I_{GT}$, $t_r \leq 100ns$ $f = 120\text{ Hz}$, $T_j = 125\text{ °C}$	50	$A/\mu s$
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
		M	N	
V_{DRM}/V_{RRM}	Repetitive Peak Off State Voltage	600	800	V

HIGH COMMUTATION TRIAC

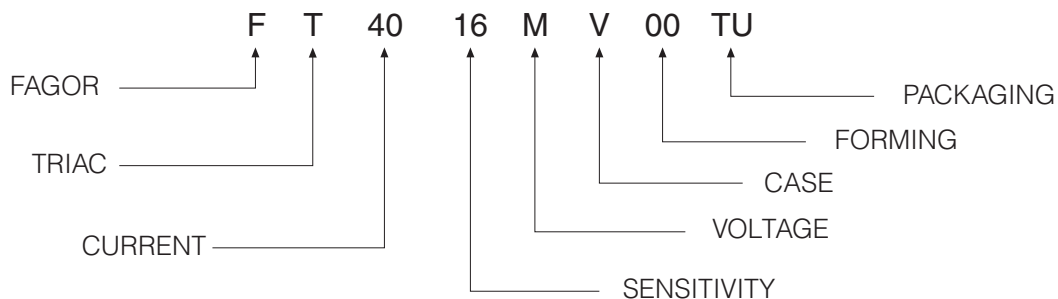
Electrical Characteristics at Tamb = 25 °C

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY	Unit
					16	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25\text{ °C}$	Q1÷Q3	MAX	50	mA
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25\text{ °C}$	Q1÷Q3	MAX	1.5	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	MIN	0.2	V
$I_H^{(2)}$	Holding Current	$I_T = 100\text{ mA}, \text{Gate open}, T_j = 25\text{ °C}$		MAX	80	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25\text{ °C}$	Q1, Q3	MAX	80	mA
			Q2	MAX	160	mA
$dV/dt^{(2)}$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{Gate open}$ $T_j = 125\text{ °C}$		MIN	500	V/ μ s
$V_{TM}^{(2)}$	On-state Voltage	$I_{TM} = 60\text{ Amp}, t_p = 380\text{ }\mu\text{s}, T_j = 25\text{ °C}$		MAX	1.55	V
$V_{t(o)}^{(2)}$	Threshold Voltage	$T_j = 125\text{ °C}$		MAX	0.85	V
$r_d^{(2)}$	Dynamic resistance	$T_j = 125\text{ °C}$		MAX	10	m Ω
I_{DRM}/I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}, T_j = 125\text{ °C}$		MAX	5	mA
		$V_R = V_{RRM}, T_j = 25\text{ °C}$		MAX	20	μ A
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			1.1	°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

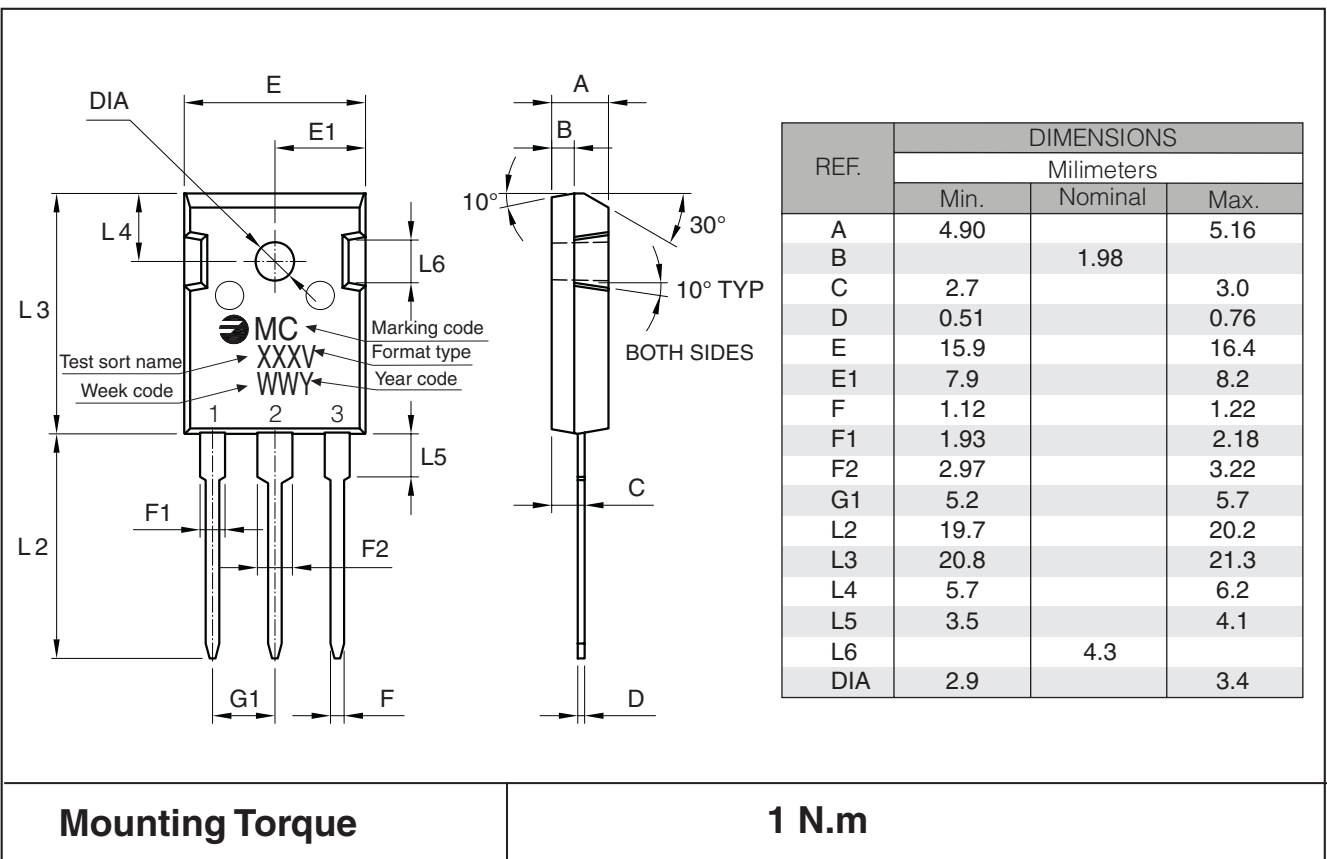


HIGH COMMUTATION TRIAC

Ordering information

PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
FT4016MV 00TUC	TU	TUBE	450	5.6

Package Outline Dimensions: (mm) TO-3P / TO-247AD



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

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

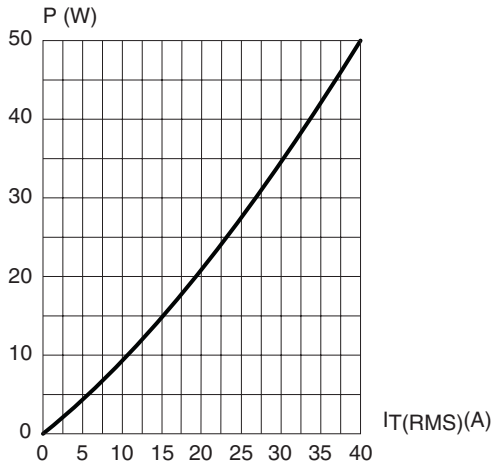


Fig. 2: RMS on-state current versus case temperature (full cycle).

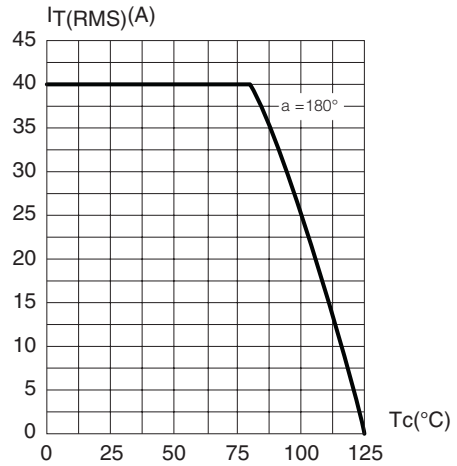


Fig. 3: On-state characteristics (maximum values)

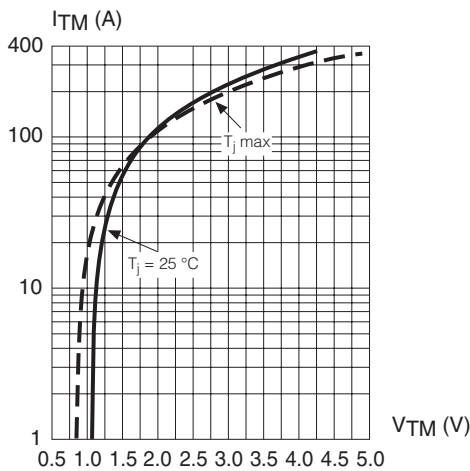


Fig. 4: Surge peak on-state current versus number of cycles

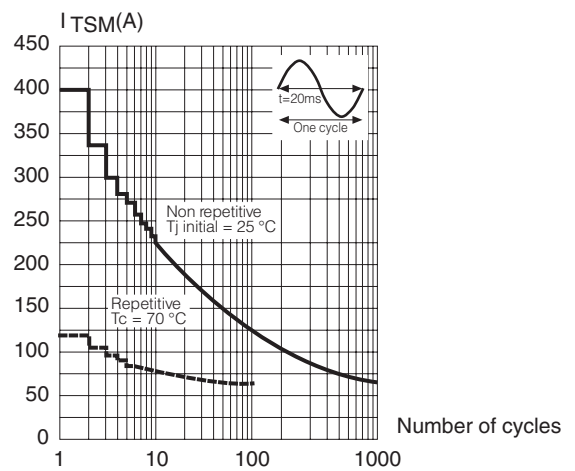


Fig. 5: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p < 10$ ms, and corresponding value of $I^2 t$.

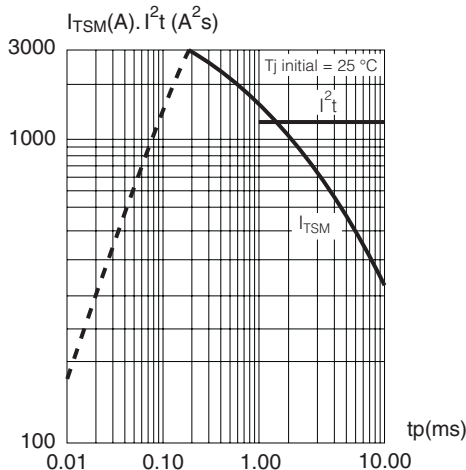
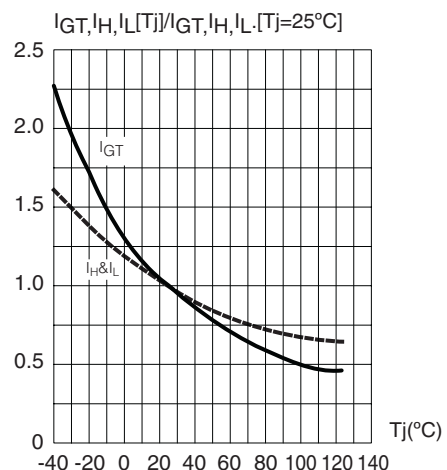


Fig. 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)



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