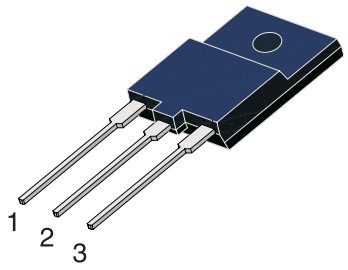
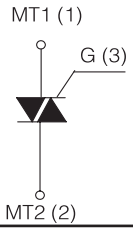
FAGOR

FT4016.V

HIGH COMMUTATION TRIAC

TO-3P FP





On-State Current	Gate Trigger Current
40 Amp	≤ 50 mA (16)

Off-Satate Voltage

600 V ÷ 800V

FEATURES

- Glass/passivated die junctions
- High current Triac
- Low thermal resistance with clip bonding
- High commutation
- High surge current capability
- Low forward voltaje drop
- Solder dip 260 ºC, 10s
- Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 ºC

Pb

e3

RoHS COMPLIANT

MECHANICAL DATA

- **Case:** TO-3P FP. 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

Used on inductive loads, thanks to their high commutation performances.

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 ºC	40	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz (t = 16.7 ms)	420	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz (t = 20 ms)	400	A
I^2t	Fusing Current	tp = 10 ms, Half Cycle	1000	A^2s
I_{GM}	Peak Gate Current	20 µs max. Tj = 125 ºC	8	A
$P_{G(AV)}$	Average Gate Power Dissipation	Tj = 125 ºC	1	W
dI/dt	Critical rate of rise of on-state current	I_G = 2X I_{GT}, t_r ≤ 100ns f = 120 Hz, $T_{j=}$ 125 ºC	50	A/µs
T_j	Operating Temperature		(-40 to + 125)	ºC
T_{stg}	Storage Temperature		(-40 to + 150)	ºC
T_{sld}	Soldering Temperature	10s max.	260	ºC
V_{iso}	RMS isolation voltage 50/60 Hz sinusoidal waveform		1.500	Vac

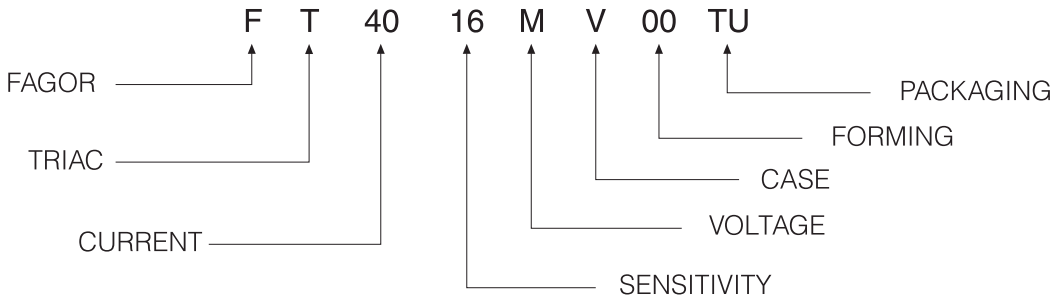
SYMBOL	PARAMETER	Voltage		Unit
		M	N	
V_{DRM} / V_{RRM}	Repetitive Peak Off State Voltage	600	800	V

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 = 33Ω, Tj = 25 ºC	Q1÷Q3	MAX	50	mA
V_{GT}	Gate Trigger Voltage	V_D = 12 V_{DC}, R_L = 33Ω, Tj = 25 ºC	Q1÷Q3	MAX	1.5	V
V_{GD}	Gate Non Trigger Voltage	V_D = V_{DRM}, R_L = 3.3kΩ, Tj = 125 ºC	Q1÷Q3	MIN	0.2	V
I_H (2)	Holding Current	I_T = 100 mA, Gate open, Tj = 25 ºC		MAX	80	mA
I_L	Latching Current	I_G = 1.2 I_{GT}, Tj = 25 ºc	Q1, Q3	MAX	80	mA
			Q2	MAX	160	mA
dV / dt(2)	Critical Rate of Voltage Rise	V_D = 0.67 x V_{DRM}, Gate open, Tj = 125 ºC		MIN	500	V/µs
V_{TM} (2)	On-State Voltage	I_{TM} = 60 Amp, tp = 380 µs, Tj = 25 ºC		MAX	1.55	V
$V_{t(0)}$ (2)	Threshold Voltage	Tj = 125 ºC		MAX	0.85	V
r_d (2)	Dynamic resistance	Tj = 125 ºC		MAX	10	mΩ
I_{DRM} / I_{RRM}	Off-State Leakage Current	V_D = V_{DRM}, Tj = 125 ºC V_R = V_{RRM}, Tj = 25 ºC		MAX MAX	5 20	mA µA
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360º conduction angle			1.1	ºC/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.

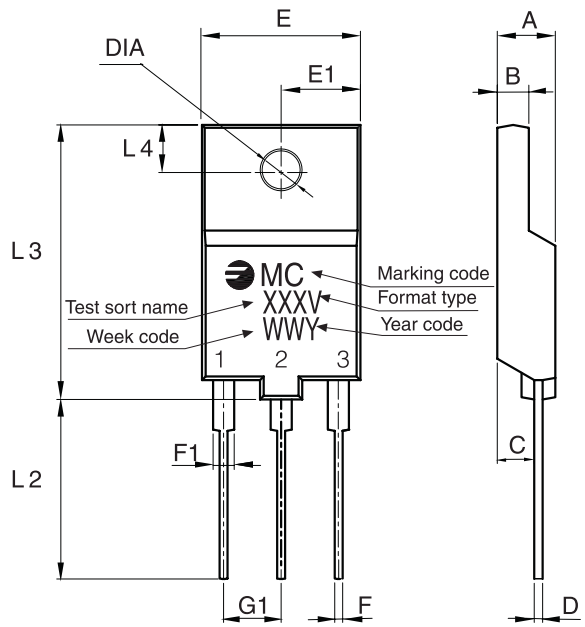
Part Number Information



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 FP



REF.	DIMENSIONS Milimeters	
	Min.	Max.
A	4.90	5.5
B	2.5	3.0
C	3.3	3.6
D	0.6	0.9
E	15.0	15.5
E1	7.5	7.75
F	0.65	0.75
F1	1.7	2.0
G1	5.2	5.7
L2	16.5	17.0
L3	26.0	26.5
L4	4.25	4.75
DIA	3.35	3.85

Mounting Torque	0.8 N.m

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

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

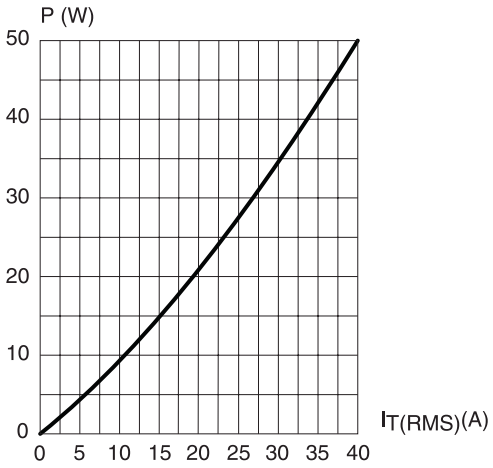


Fig. 2: RMS on-state current versus case temperature (full cycle).

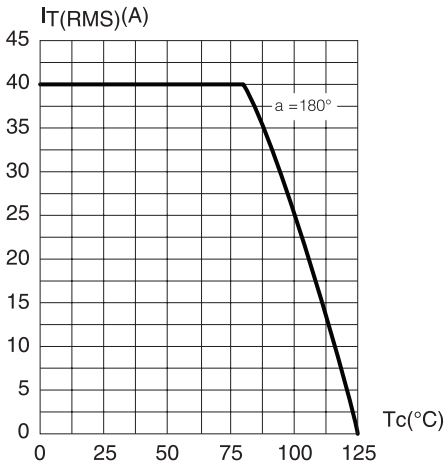


Fig. 3: On-state characteristics (maximum values)

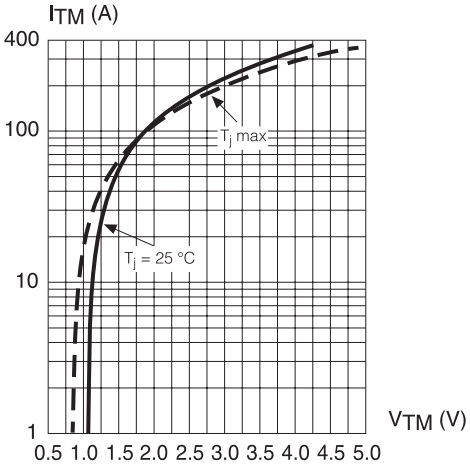


Fig. 4: Surge peak on-state current versus number of cycles

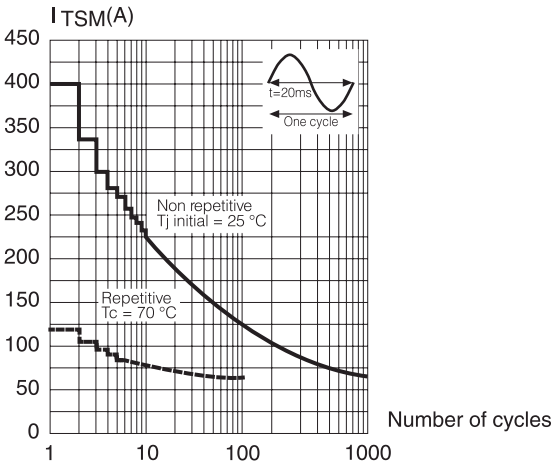


Fig. 5: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 10 ms, and corresponding value of I^2t.

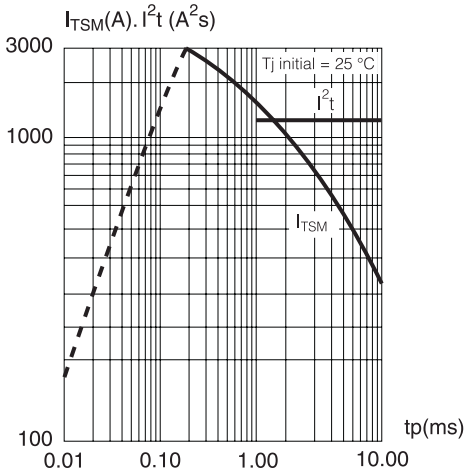
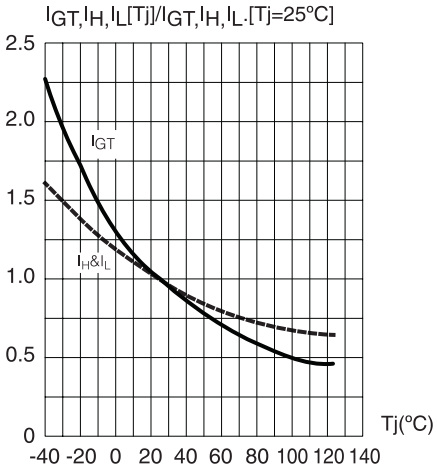


Fig. 7: Relative variation of gate trigger current, holding current and latching versus junction temperature (typical values)



Revision History

DATE	REVISION	DESCRIPTION OF CHANGES
14-Apr-2015	0	Original Data Sheet
04-Jun-2015	1	Add V_{iso}

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