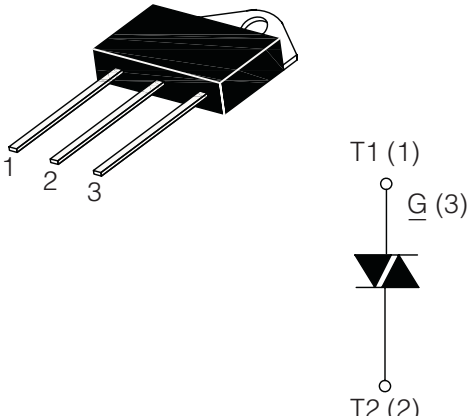


## INSULATED HIGH COMMUTATION TRIAC

<p style="text-align: center; font-weight: bold; font-size: 1.2em;">INSULATED TO3P</p> <div style="text-align: center; margin-top: 20px;">  </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><b>On-State Current</b> 40 Amp</td> <td style="width: 50%; text-align: center;"><b>Gate Trigger Current</b> ≤ 50 mA (16)</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>Off-State Voltage</b> 600 V ÷ 800 V</td> </tr> </table> <p style="font-size: 0.8em; margin-top: 10px;">             * Standard current TRIAC              * Low thermal resistance with clip bounding              * Low thermal resistance isolation ceramic for FT....P         </p> <p style="font-size: 0.8em; margin-top: 10px;">             This series of TRIACs uses a high performance PNPN technology.         </p> <p style="font-size: 0.8em; margin-top: 10px;">             These parts are intended for general purpose AC switching applications with highly inductive loads. The FT....P series provides an isolated tab (rated at 2500 Vrms).         </p>	<b>On-State Current</b> 40 Amp	<b>Gate Trigger Current</b> ≤ 50 mA (16)	<b>Off-State Voltage</b> 600 V ÷ 800 V	
<b>On-State Current</b> 40 Amp	<b>Gate Trigger Current</b> ≤ 50 mA (16)				
<b>Off-State Voltage</b> 600 V ÷ 800 V					

### Absolute Maximum Ratings, according to IEC publication No. 134

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 <sup>2</sup> s
$I_{GM}$	Peak Gate Current	$20\text{ }\mu\text{s max.}$ $T_j = 125\text{ °C}$	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	$I_G = 2 \times I_{GT}$ , $t_r \leq 100\text{ ns}$ $f = 120\text{ Hz}$ , $T_j = 125\text{ °C}$	50	A/ $\mu\text{s}$
$T_j$	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

# INSULATED HIGH COMMUTATION TRIAC

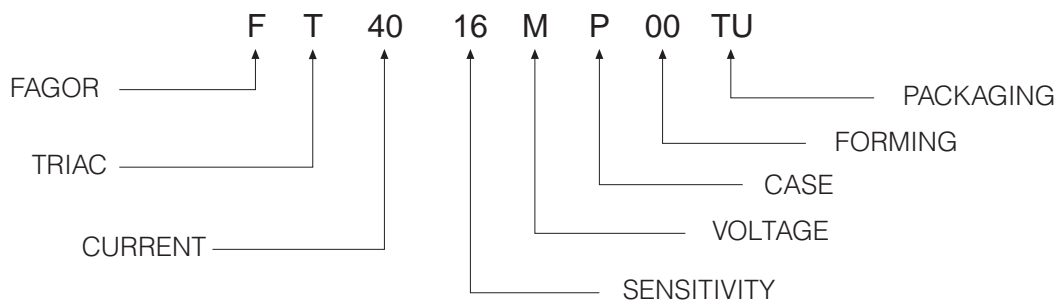
## Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY	Unit
					16	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3	MAX	50	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	80	mA
$I_L$	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1, Q3	MAX	80	mA
			Q2	MAX	160	mA
$dV/dt^{(2)}$	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, \text{Gate open}$ $T_j = 125^\circ C$		MIN	500	V/ $\mu s$
$V_{TM}^{(2)}$	On-state Voltage	$I_{TM} = 60 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		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	10	m $\Omega$
$I_{DRM}/I_{RRM}$	Off-State Leakage Current	$V_D = V_{DRM}, T_j = 125^\circ C$		MAX	5	mA
		$V_R = V_{RRM}, T_j = 25^\circ C$		MAX	20	$\mu A$
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			0.9	$^\circ C/W$

(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



**INSULATED HIGH COMMUTATION TRIAC**

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

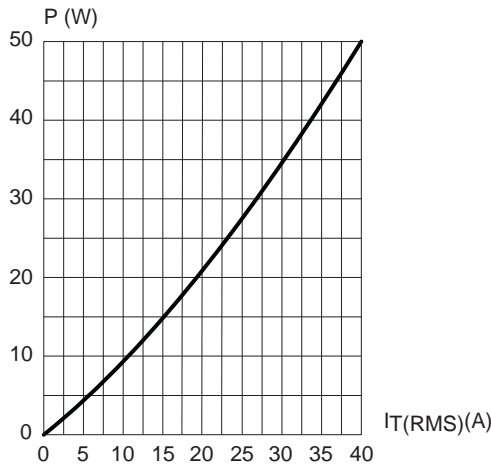


Fig. 2: RMS on-state current versus case temperature (full cycle).

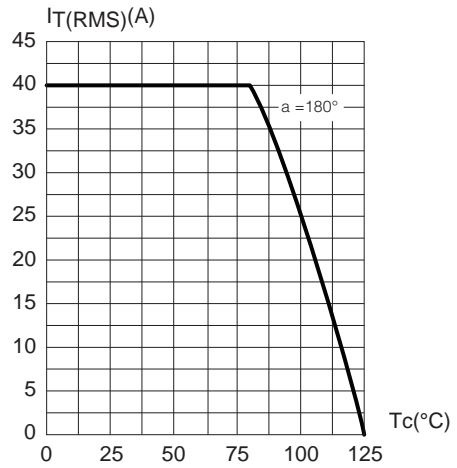


Fig. 3: On-state characteristics (maximum values)

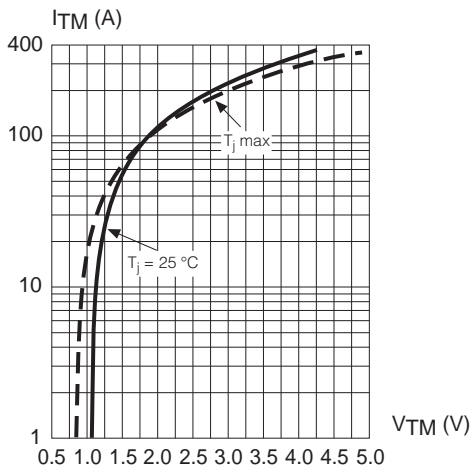


Fig. 4: Surge peak on-state current versus number of cycles

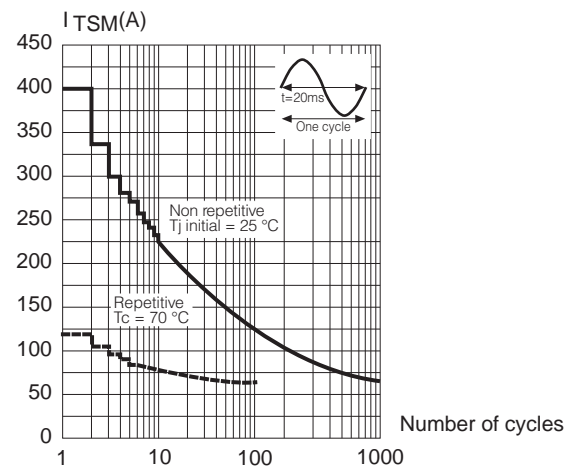


Fig. 5: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10$  ms, and corresponding value of  $I^2t$ .

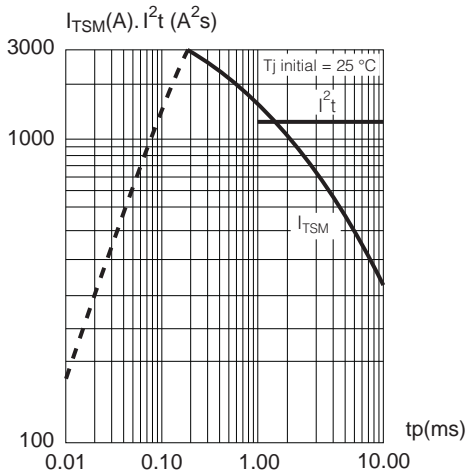
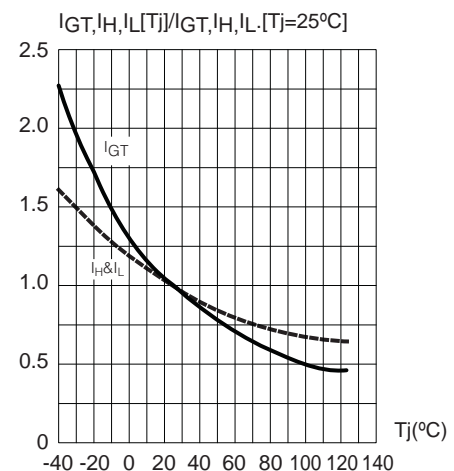
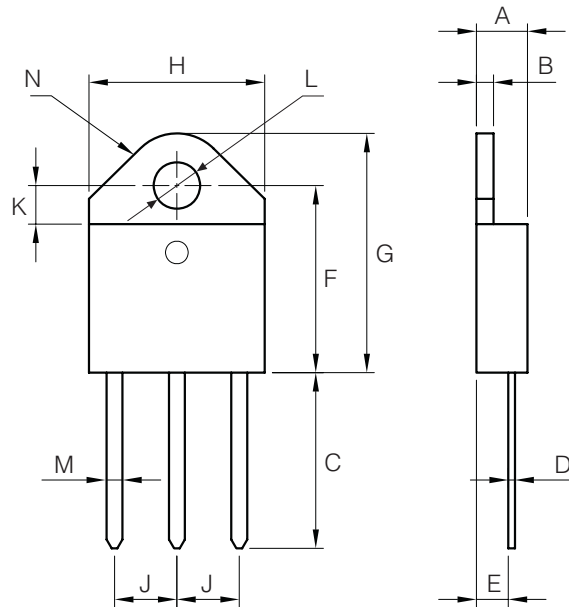


Fig. 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)



**INSULATED HIGH COMMUTATION TRIAC**

PACKAGE MECHANICAL DATA: INSULATED TO3P



DIMENSIONS (mm)

	A	B	C	D	E	F	G	H	J	K	L	M	N
MAX	4.6	1.55	15.6	0.7	2.9	16.5	21.1	15.5	5.65	3.65	4.17	1.40	
TYP													4.60
MIN	4.4	1.45	14.35	0.5	2.7	15.8	20.4	15.1	5.4	3.4	4.08	1.20	

**Mounting Torque**

**1 N.m**

(\*) Limiting values and life support applications, see Web page.