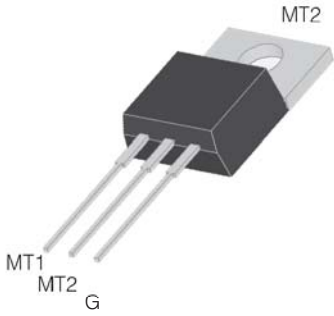
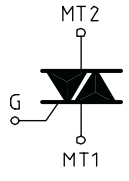


**STANDARD TRIAC**

<p><b>TO-220AB</b></p>  	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>On-State Current</b></td> <td style="width: 50%;"><b>Gate Trigger Current</b></td> </tr> <tr> <td style="text-align: center;">10 Amp</td> <td style="text-align: center;"><math>\leq 100 \text{ mA}</math></td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px 0;"><b>Off-State Voltage</b></td> </tr> <tr> <td colspan="2" style="text-align: center;">200 V ÷ 800 V</td> </tr> </table> <p style="margin-top: 20px;">This series of <b>TRIACs</b> uses a high performance PNPN technology.</p> <p>These parts are intended for general purpose AC switching applications with highly inductive loads.</p>	<b>On-State Current</b>	<b>Gate Trigger Current</b>	10 Amp	$\leq 100 \text{ mA}$	<b>Off-State Voltage</b>		200 V ÷ 800 V	
<b>On-State Current</b>	<b>Gate Trigger Current</b>								
10 Amp	$\leq 100 \text{ mA}$								
<b>Off-State Voltage</b>									
200 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, $T_c = 95 \text{ }^\circ\text{C}$	10	A
$I_{TSM}$	Non-repetitive On-State Current	Full Cycle, 60 Hz ( $t = 16.7 \text{ ms}$ )	105	A
$I_{TSM}$	Non-repetitive On-State Current	Full Cycle, 50 Hz ( $t = 20 \text{ ms}$ )	100	A
$I^2t$	Fusing Current	$t_p = 10 \text{ ms}$ , Half Cycle	50	$\text{A}^2\text{s}$
$I_{GM}$	Peak Gate Current	$20 \text{ } \mu\text{s}$ max. $T_j = 125 \text{ }^\circ\text{C}$	4	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125 \text{ }^\circ\text{C}$	1	W
$di / dt$	Critical rate of rise of on-state current	$I_G = 2x I_{GT}$ , $t_r \leq 100\text{ns}$ $f = 120 \text{ Hz}$ , $T_j = 125 \text{ }^\circ\text{C}$	50	$\text{A}/\mu\text{s}$
$T_j$	Operating Temperature		(-40 +125)	$^\circ\text{C}$
$T_{stg}$	Storage Temperature		(-40 +150)	$^\circ\text{C}$
$T_{sld}$	Soldering Temperature	10s max	260	$^\circ\text{C}$

SYMBOL	PARAMETER	VOLTAGE					Unit
		B	D	M	S	N	
$V_{DRM}$	Repetitive Peak Off State Voltage	200	400	600	700	800	V

**STANDARD TRIAC**

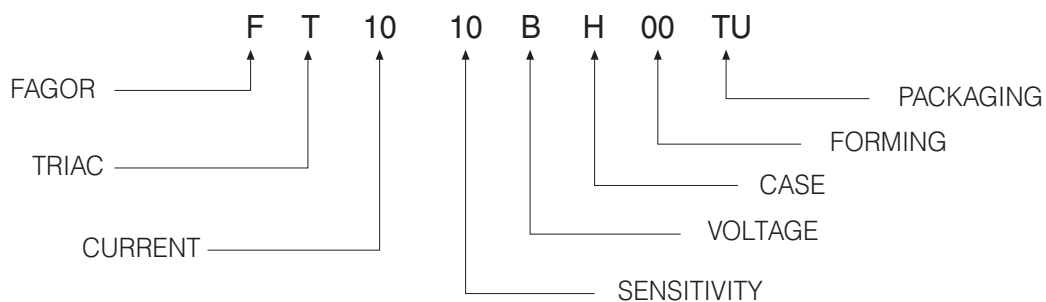
**Electrical Characteristics**

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY				Unit
					10	13	18	17	
I <sub>GT</sub> <sup>(1)</sup>	Gate Trigger Current	V <sub>D</sub> = 12 V <sub>DC</sub> , R <sub>L</sub> = 33Ω, T <sub>j</sub> = 25 °C	Q1÷Q3	MAX	25	50	25	50	mA
			Q4	MAX	25	75	50	100	mA
V <sub>GT</sub>	Gate Trigger Voltage	V <sub>D</sub> = 12 V <sub>DC</sub> , R <sub>L</sub> = 33Ω, T <sub>j</sub> = 25 °C	Q1÷Q4	MAX	1.3				V
V <sub>GD</sub>	Gate Non Trigger Voltage	V <sub>D</sub> = V <sub>DRM</sub> , R <sub>L</sub> = 3.3 KΩ, T <sub>j</sub> = 125 °C	Q1÷Q4	MIN	0.2				V
I <sub>H</sub> <sup>(2)</sup>	Holding Current	I <sub>T</sub> = 100 mA, Gate open, T <sub>j</sub> = 25 °C		MAX	25	50	25	50	mA
I <sub>L</sub>	Latching Current	I <sub>G</sub> = 1.2 I <sub>GT</sub> , T <sub>j</sub> = 25 °C	Q1,Q3,Q4	MAX	40	70	40	70	mA
			Q2	MAX	60	80	80	100	mA
dV/dt <sup>(2)</sup>	Critical Rate of Voltage Rise	V <sub>D</sub> = 0.67 x V <sub>DRM</sub> , Gate open T <sub>j</sub> = 125 °C		MIN	500	1000	700	1000	V/μs
(dV/dt) <sub>c</sub> <sup>(2)</sup>	Critical Rise Rate of Commutating off-state voltage	(dI/dt) <sub>c</sub> = 2.7 A/ms T <sub>j</sub> = 125 °C		MIN	3	8	5	10	V/μs
V <sub>TM</sub> <sup>(2)</sup>	On-state Voltage	I <sub>T</sub> = 14 Amp, t <sub>p</sub> = 380 μs, T <sub>j</sub> = 25 °C		MAX	1.6				V
V <sub>t(o)</sub> <sup>(2)</sup>	Threshold Voltage	T <sub>j</sub> = 125 °C		MAX	0.85				V
r <sub>d</sub> <sup>(2)</sup>	Dynamic resistance	T <sub>j</sub> = 125 °C		MAX	40				mΩ
I <sub>DRM</sub> /I <sub>RRM</sub>	Off-State Leakage Current	V <sub>D</sub> = V <sub>DRM</sub> , T <sub>j</sub> = 125 °C		MAX	1				mA
		V <sub>R</sub> = V <sub>RRM</sub> , T <sub>j</sub> = 25 °C		MAX	5				μA
R <sub>th(j-c)</sub>	Thermal Resistance Junction-Case	for AC 360° conduction angle			1.4				°C/W
R <sub>th(j-a)</sub>	Thermal Resistance Junction-Ambient	S = 1 cm <sup>2</sup>			60				°C/W

(1) Minimum I<sub>GT</sub> is guaranteed at 5% of I<sub>GT</sub> max.

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

**PART NUMBER INFORMATION**



### STANDARD TRIAC

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

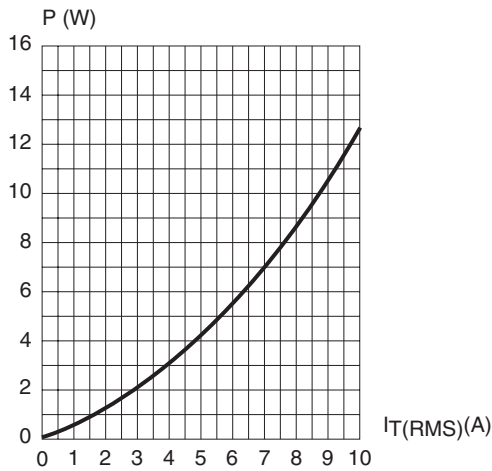


Fig. 2: RMS on-state current versus case temperature (full cycle).

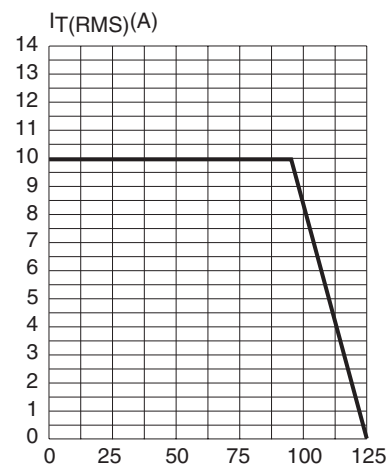


Fig. 3: Relative variation of thermal impedance versus pulse duration.

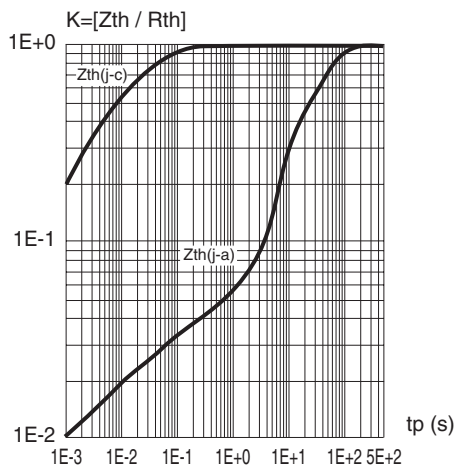


Fig. 4: On-state characteristics (maximum values)

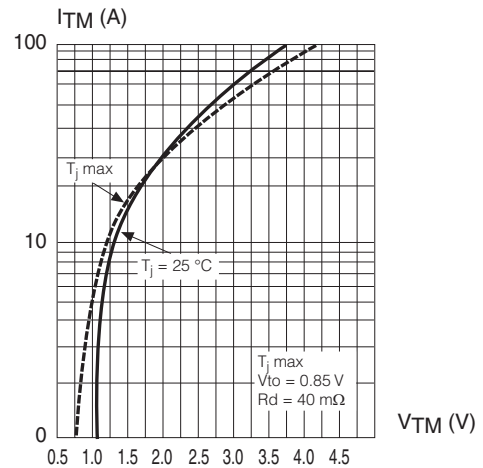


Fig. 5: Surge peak on-state current versus number of cycles

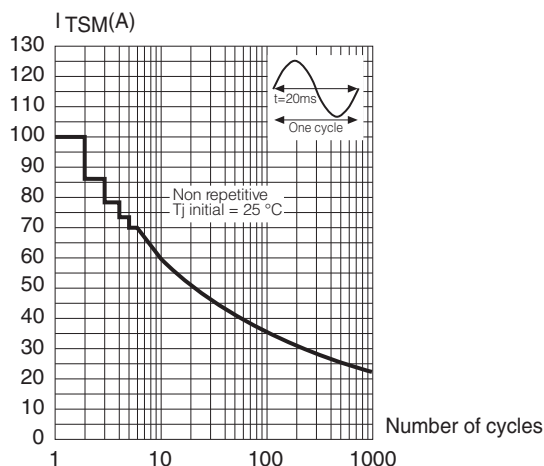
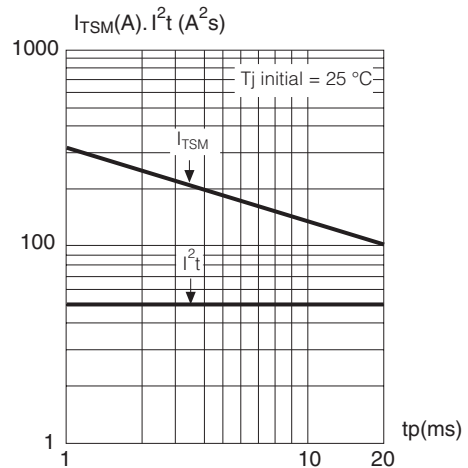


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp < 20 ms, and corresponding value of I²t.



**STANDARD TRIAC**

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

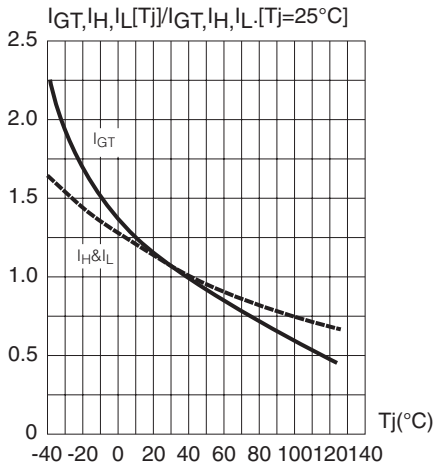


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

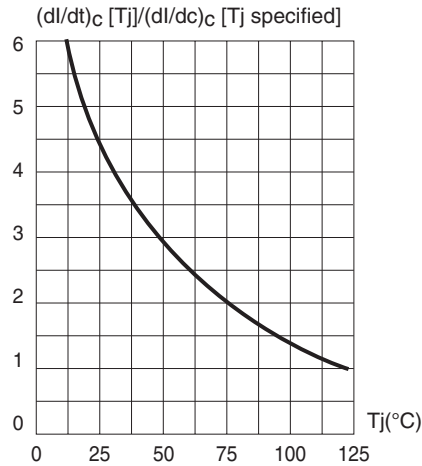
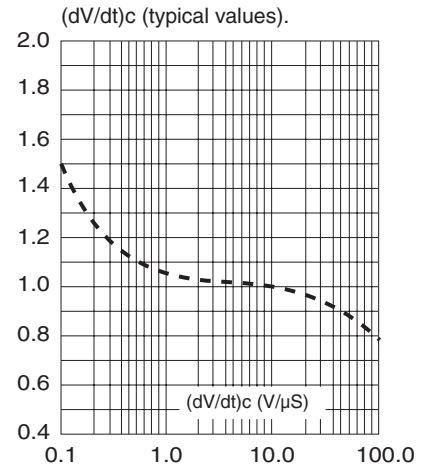
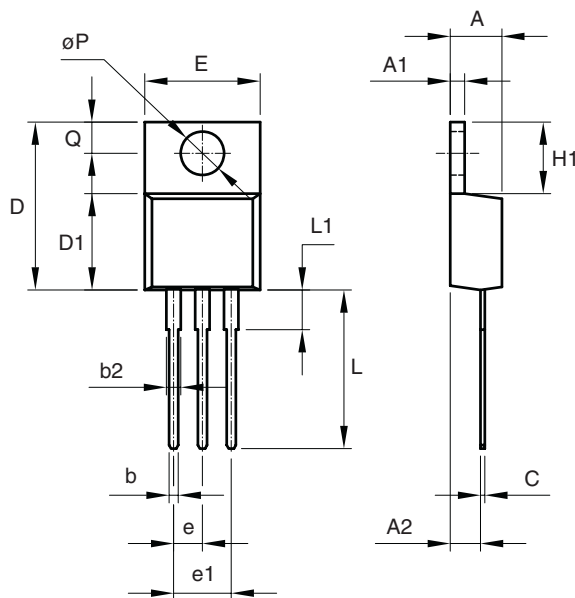


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature



**PACKAGE MECHANICAL DATA**

**TO-220AB**



REF.	DIMENSIONS	
	Millimeters	
	Min.	Max.
A	4.47	4.67
A1	1.17	1.37
A2	2.52	2.82
b	0.71	0.91
b2	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.36
e	2.51	2.57
e1	4.98	5.18
H1	6.15	6.45
L	13.40	13.96
L1	3.56	3.96
P	3.735	3.935
Q	2.59	2.89

**Mounting Torque**

**1 N.m**

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