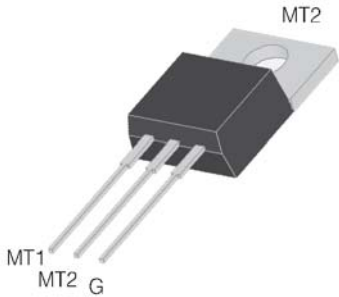
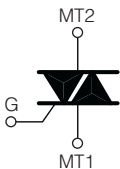


**LOGIC LEVEL TRIAC**

<p style="text-align: center;"><b>TO-220AB</b></p>  	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;"><b>On-State Current</b></td> <td style="width: 50%; text-align: center;"><b>Gate Trigger Current</b></td> </tr> <tr> <td style="text-align: center;">10 Amp</td> <td style="text-align: center;">&lt; 10 mA</td> </tr> <tr> <td colspan="2" style="text-align: center;"><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 TRIACs 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	< 10 mA	<b>Off-State Voltage</b>		200 V ÷ 800 V	
<b>On-State Current</b>	<b>Gate Trigger Current</b>								
10 Amp	< 10 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 ( $t = 16.7\text{ ms}$ )	110	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	$A^2s$
$I_{GM}$	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	$A/\mu\text{s}$
$T_j$	Operating Temperature		$(-40 + 125)$	$^\circ\text{C}$
$T_{stg}$	Storage Temperature		$(-40 + 150)$	$^\circ\text{C}$
$T_{sld}$	Soldering Temperature	10s max	260	$^\circ\text{C}$

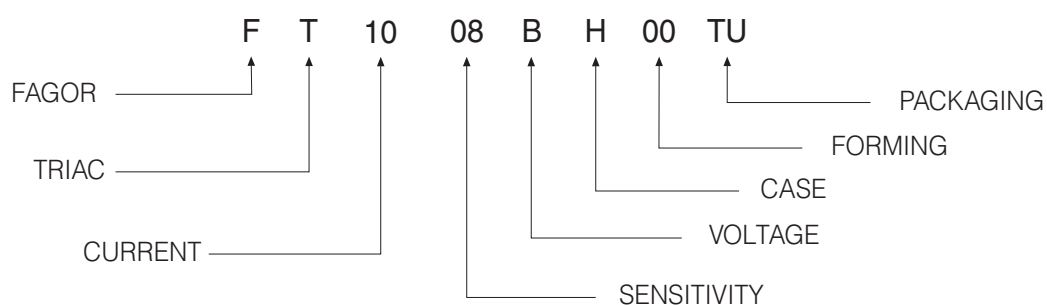
SYMBOL	PARAMETER	VOLTAGE					Unit
		B	D	M	S	N	
$V_{DRM}$	Repetitive Peak Off State Voltage	200	400	600	700	800	V
$V_{RRM}$							

**LOGIC LEVEL TRIAC**
**Electrical Characteristics**

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY		Unit
						08	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3	MAX		10	mA
			Q4	MAX			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
			Q1÷Q4	MAX			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
			Q1÷Q4	MIN			V
$I_H^{(2)}$	Holding Current	$I_T = 100 mA, \text{Gate open}, T_j = 25^\circ C$		MAX		15	mA
$I_L$	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1,Q3	MAX		25	mA
			Q1,Q3,Q4	MAX			mA
			Q2	MAX		30	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		40	V/ $\mu s$
$(dI/dt)^{(2)}$	Critical Rate of Current Rise	$(dv/dt)_c = 0.1 V/\mu s, T_j = 125^\circ C$		MIN		6.2	A/ms
		$(dv/dt)_c = 10 V/\mu s, T_j = 125^\circ C$		MIN		2.7	A/ms
		without snubber $T_j = 125^\circ C$		MIN		-	
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 14 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		MAX		1.6	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		40	m $\Omega$
$I_{DRM}/I_{RRM}$	Off-State Leakage Current	$V_D = V_{DRM}, T_j = 125^\circ C$		MAX		1	mA
		$V_R = V_{RRM}, T_j = 25^\circ C$		MAX		5	$\mu A$
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle				1.4	°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient	$S = 1 \text{ cm}^2$				60	°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**

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

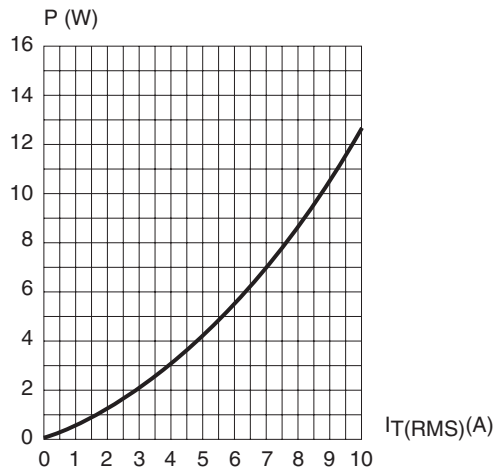


Fig. 2: RMS on-state current versus case temperature (full cycle).

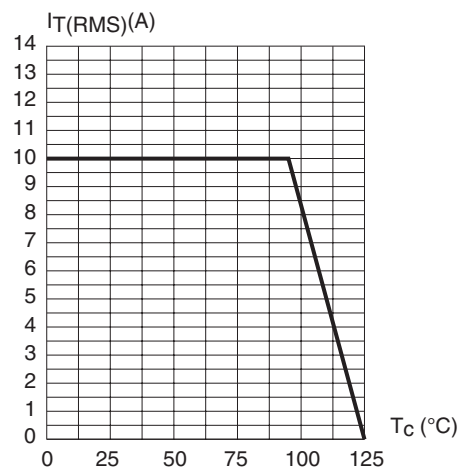


Fig. 3: Relative variation of thermal impedance versus pulse duration.

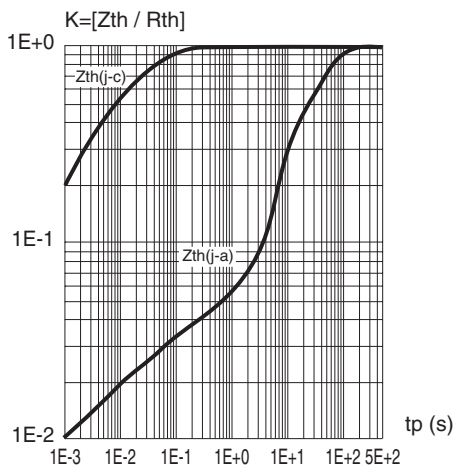


Fig. 4: On-state characteristics (maximum values)

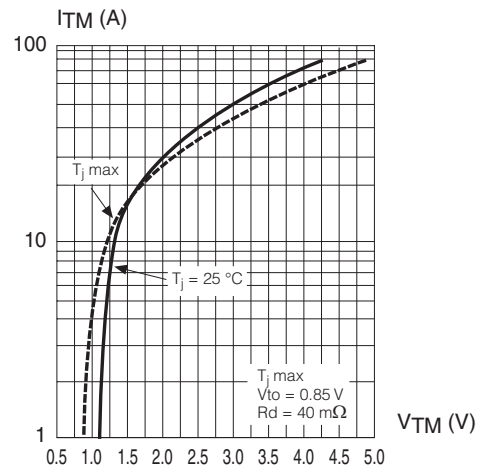


Fig. 5: Surge peak on-state current versus number of cycles

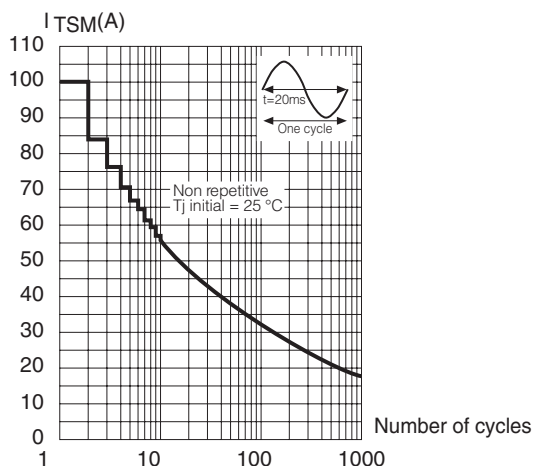
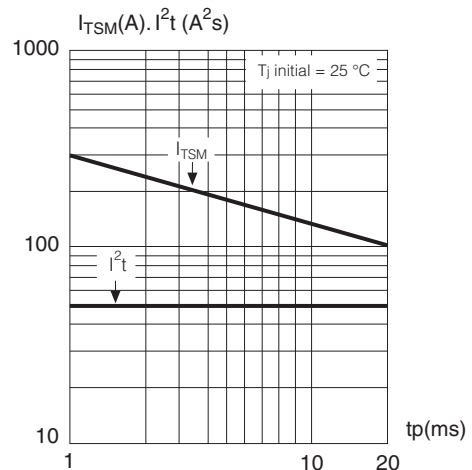


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 20$  ms, and corresponding value of  $I^2 t$ .



**LOGIC LEVEL TRIAC**

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

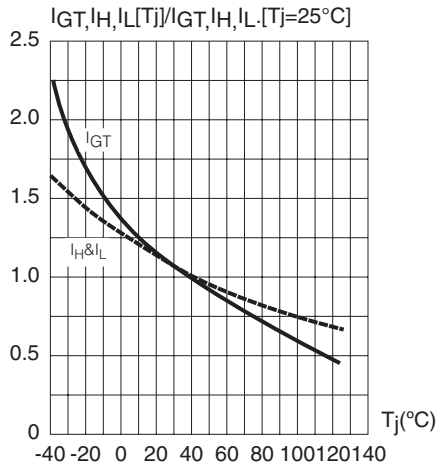


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

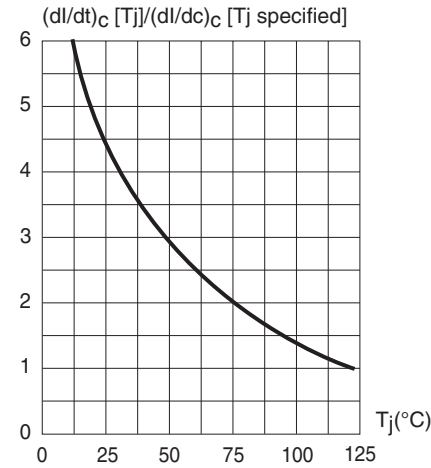
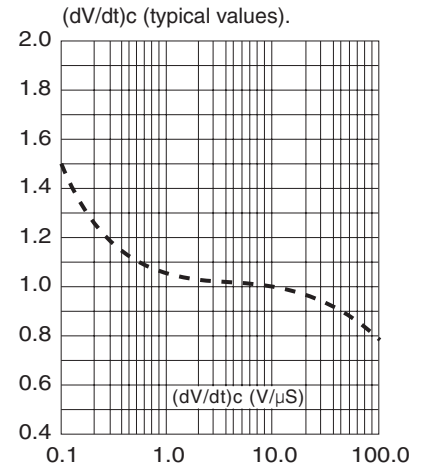
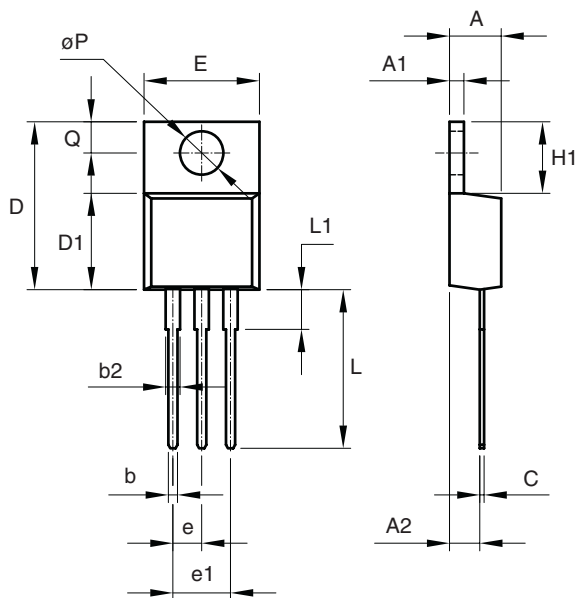


Fig. 9: Relative variation of critical rate of decrease of main current versus



**PACKAGE MECHANICAL DATA**

**TO-220AB**



REF.	DIMENSIONS	
	Milimeters	
	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.