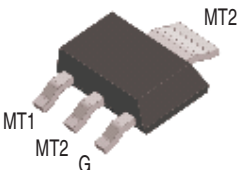
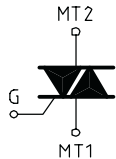


LOGIC LEVEL TRIAC

<p>SOT223 (Plastic)</p>  	<p>On-State Current 1 Amp</p> <p>Gate Trigger Current < 10 mA</p> <p>Off-State Voltage 200 V ÷ 800 V (07, 09) 200 V ÷ 600 V (02, 03, 04, 05)</p>
<p>This series of TRIACs uses a high performance PNP technology.</p> <p>These parts are intended for general purpose AC switching applications with highly inductive loads.</p>	

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, $T_C = 95^\circ\text{C}$	1	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 60 Hz ($t = 16.7\text{ ms}$)	8.5	A
I_{TSM}	Non-repetitive On-State Current	Full Cycle, 50 Hz ($t = 20\text{ ms}$)	8	A
I^2t	Fusing Current	$t_p = 10\text{ ms}$, Half Cycle	0.32	A ² s
I_{GM}	Peak Gate Current	20 μs max. $T_j = 125^\circ\text{C}$	1	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ\text{C}$	0.1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2x I_{GT}$, $t_r \leq 100\text{ns}$ $f = 120\text{ Hz}$, $T_j = 125^\circ\text{C}$	20	A/ μs
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} V_{RRM}	Repetitive Peak Off State Voltage	200	400	600	700	800	V

* 07, 09 sensitivities

LOGIC LEVEL TRIAC

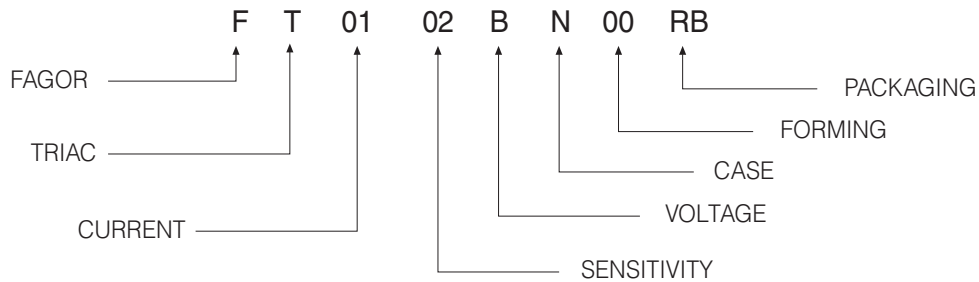
Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY						Unit
					02	03	04	05	07	09	
$I_{GT}^{(1)}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3 Q4	MAX	3	3	5	5	5	10	mA
				MAX	3	5		5	7	10	mA
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 33\Omega, T_j = 25^\circ C$	Q1÷Q3 Q1÷Q4	MAX	1.3						V
				MAX	1.3						V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}, R_L = 3.3K\Omega, T_j = 125^\circ C$	Q1÷Q3 Q1÷Q4	MIN	0.2						V
				MIN	0.2						V
$I_H^{(2)}$	Holding Current	$I_T = 50 \text{ mA}, \text{ Gate open}, T_j = 25^\circ C$		MAX	7	7	10	10	10	10	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1, Q3 Q1,Q3,Q4 Q2	MAX	7	7	10	10	10	15	mA
				MAX	7	7	10	10	10	15	mA
				MAX	15	20	20	20	20	25	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	10	10	20	20	20	50	V/ μs
$(di/dt)_c^{(2)}$	Critical Rate of Current Rise	$(dv/dt)_c = 0.1 \text{ V}/\mu s$ $T_j = 125^\circ C$		MIN	1.2	1.2	1.8	1.8	1.8	2.5	A/ms
				MIN	0.6	0.6	0.9	0.9	0.9	1.5	A/ms
				MIN	without snubber $T_j = 125^\circ C$						
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 1.1 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		MAX	1.95						V
$V_{t(o)}^{(2)}$	Threshold Voltage	$T_j = 125^\circ C$		MAX	0.95						V
$r_d^{(2)}$	Dynamic Resistance	$T_j = 125^\circ C$		MAX	1000						m Ω
I_{DRM}/I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}, T_j = 125^\circ C$ $V_R = V_{RRM}, T_j = 25^\circ C$		MAX	0.5						mA
				MAX	5						μA
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			80						$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient	$S = 5 \text{ cm}^2$			60						$^\circ C/W$

(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



LOGIC LEVEL TRIAC

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

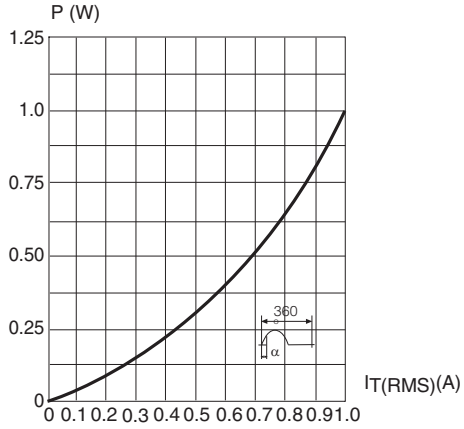


Fig. 2: RMS on-state current versus case temperature (full cycle).

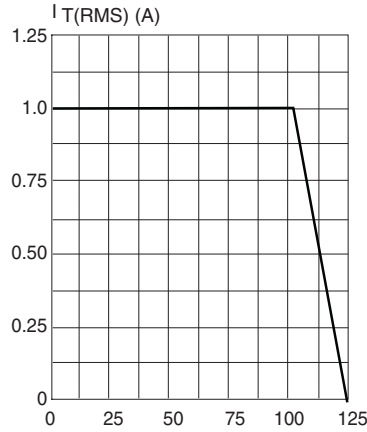


Fig. 3: Relative variation of thermal impedance versus pulse duration.

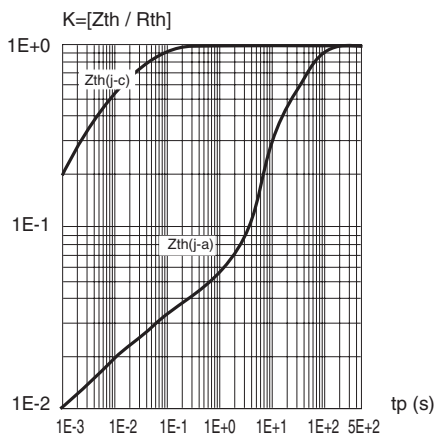


Fig. 4: On-state characteristics (maximum values)

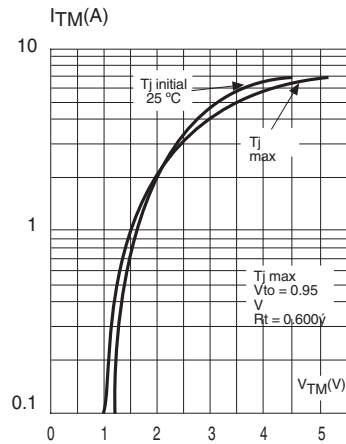


Fig. 5: Surge peak on-state current versus number of cycles

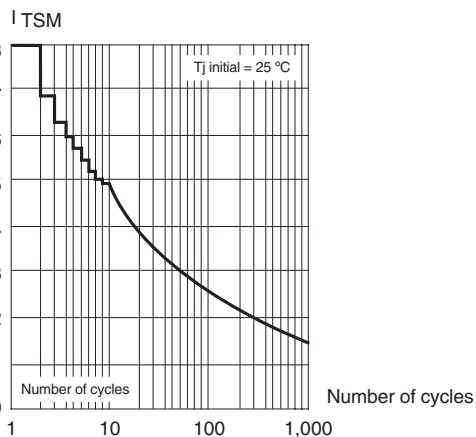
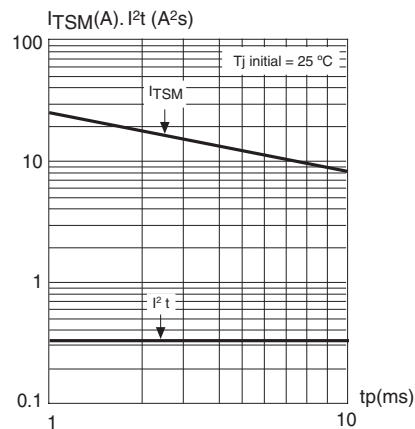


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms, and corresponding value of $I^2 t$.



LOGIC LEVEL TRIAC

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

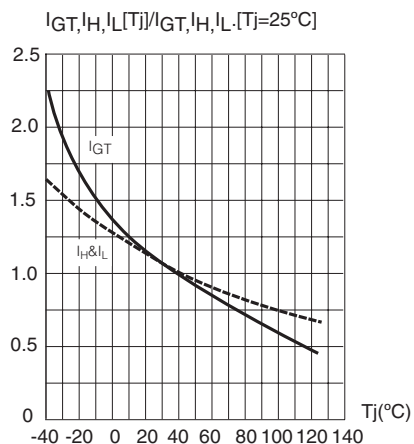


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

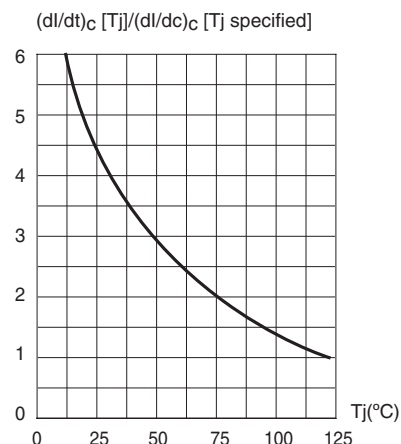
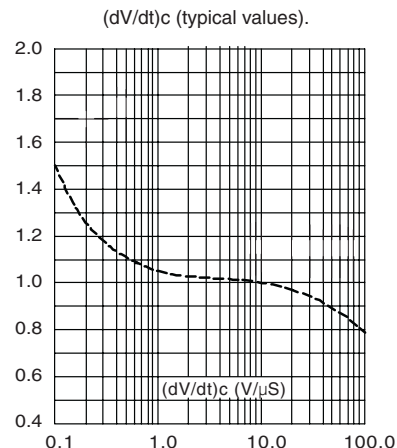
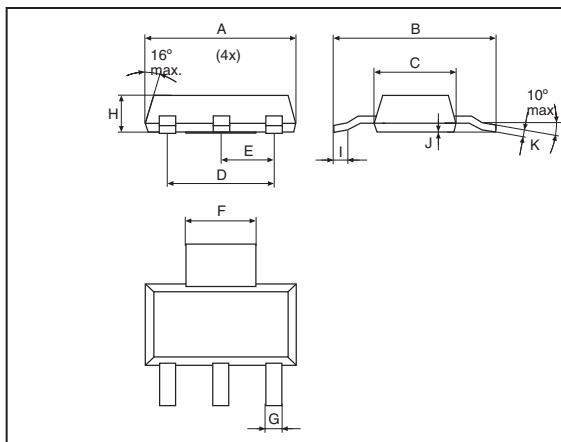


Fig. 9: Relative variation of critical rate of decrease of main current versus



PACKAGE MECHANICAL DATA

SOT223 (Plastic)



REF.	DIMENSIONS		
	Milimeters		
	Min.	Typ.	Max.
A	6.30	6.50	6.70
B	6.70	7.00	7.30
C	3.30	3.50	3.70
D	-	4.60	-
E	-	2.30	-
F	2.95	3.00	3.15
G	0.65	0.70	0.85
H	1.50	1.60	1.70
I	0.50	0.60	0.70
J	-	0.02	0.05
K	0.25	0.30	0.35

Weight: 0.11 g

FOOT PRINT

