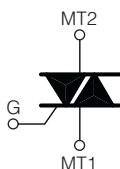
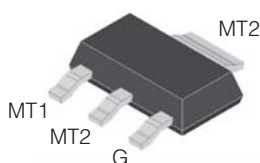


LOGIC LEVEL TRIAC
SOT223
(Plastic)

On-State Current

1 Amp

Gate Trigger Current

< 10 mA

Off-State Voltage

200 V ÷ 600 V

This series of **TRIACs** uses a high performance PNP technology.

These parts are intended for general purpose AC switching applications with highly inductive loads.

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, $T_C = 95\text{ }^{\circ}\text{C}$	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	$20\text{ }\mu\text{s max.}$ $T_j = 125\text{ }^{\circ}\text{C}$	1	A
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125\text{ }^{\circ}\text{C}$	0.1	W
di/dt	Critical rate of rise of on-state current	$I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$ $f = 120\text{ Hz}$, $T_j = 125\text{ }^{\circ}\text{C}$	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	
V_{DRM}	Repetitive Peak Off State	200	400	600	V
V_{RRM}	Voltage				

LOGIC LEVEL TRIAC

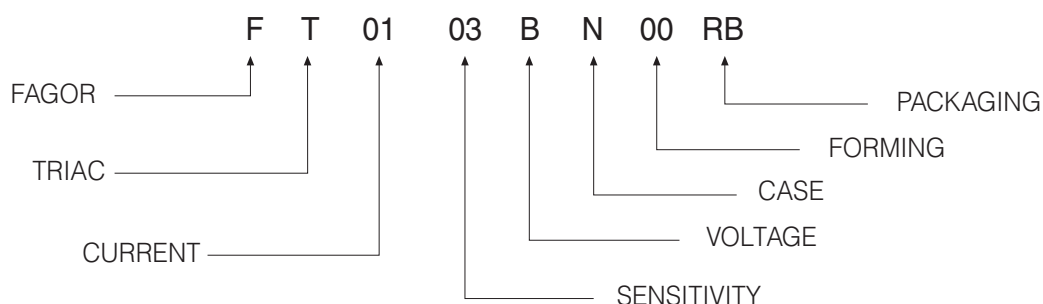
Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	Quadrant		SENSITIVITY				Unit
					03	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	MAX	3	5	5	10	mA
			Q4	MAX	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	MAX	1.3				V
			Q1÷Q4	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
			Q1÷Q4	MIN	0.2				V
$I_H^{(2)}$	Holding Current	$I_T = 50 \text{ mA}, \text{ Gate open}, T_j = 25^\circ C$		MAX	7	10	10	10	mA
I_L	Latching Current	$I_G = 1.2 I_{GT}, T_j = 25^\circ C$	Q1,Q3	MAX	7	10	10	15	mA
			Q1,Q3,Q4	MAX	7	10	10	15	mA
			Q2	MAX	15	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	20	20	50	V/ μs
$(dI/dt)^{(2)}$	Critical Rate of Current Rise	$(dv/dt)_c = 0.1 \text{ V}/\mu s, T_j = 125^\circ C$		MIN	1.2	1.8	1.8	2.5	A/ms
		$(dv/dt)_c = 10 \text{ V}/\mu s, T_j = 125^\circ C$		MIN	0.6	0.9	0.9	1.5	A/ms
		without snubber $T_j = 125^\circ C$		MIN					
$V_{TM}^{(2)}$	On-state Voltage	$I_T = 1.1 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$		MAX	1.5				V
$V_{to}^{(2)}$	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	$V_D = V_{DRM}, T_j = 125^\circ C$		MAX	0.5				mA
		$V_R = V_{RRM}, T_j = 25^\circ C$		MAX	5				μA
$R_{th(j-c)}$	Thermal Resistance Junction-Case	for AC 360° conduction angle			80				°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient	$S = 5 \text{ cm}^2$			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).

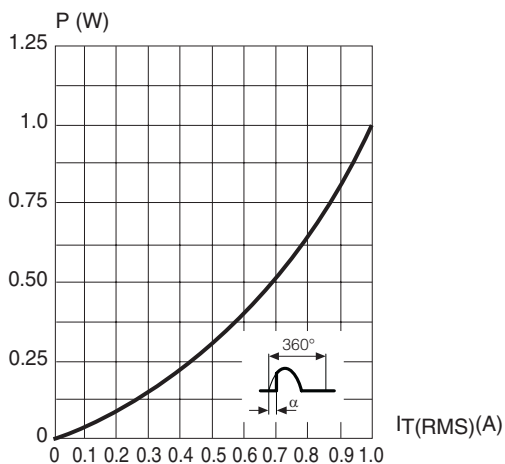


Fig. 2: RMS on-state current versus case temperature (full cycle).

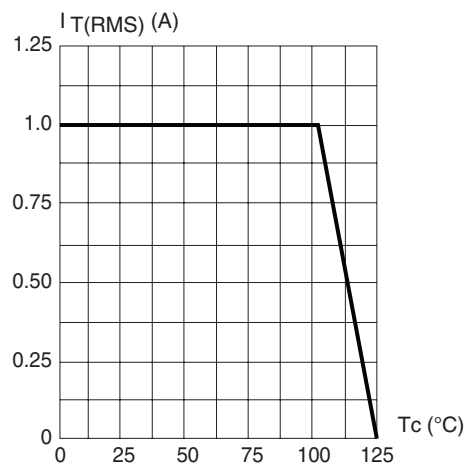


Fig. 3: Relative variation of thermal impedance versus pulse duration.

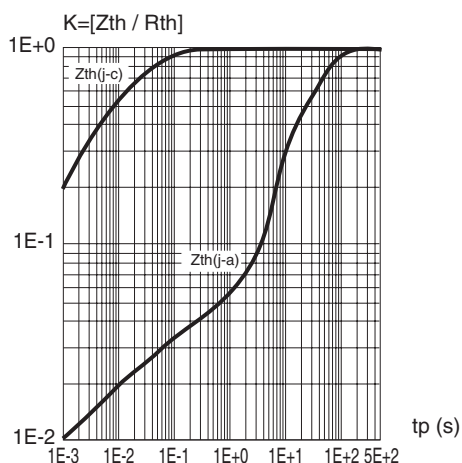


Fig. 4: On-state characteristics (maximum values)

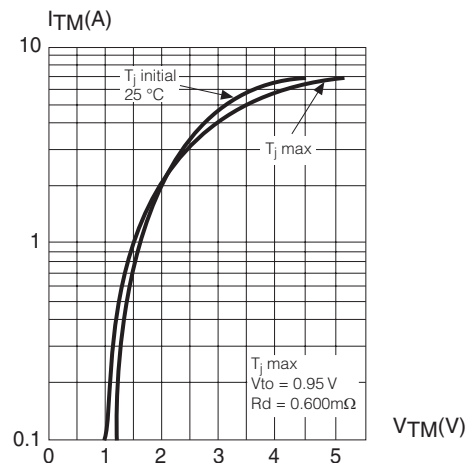


Fig. 5: Surge peak on-state current versus number of cycles

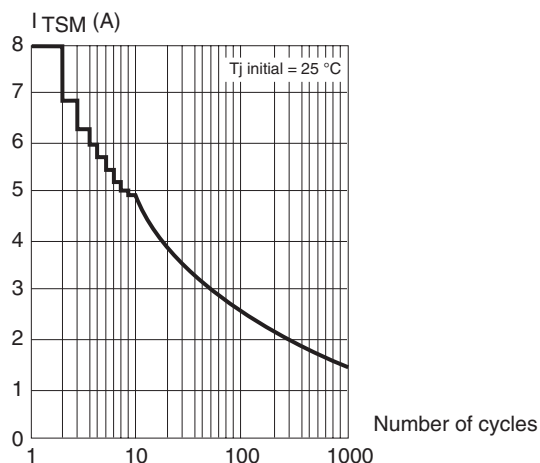
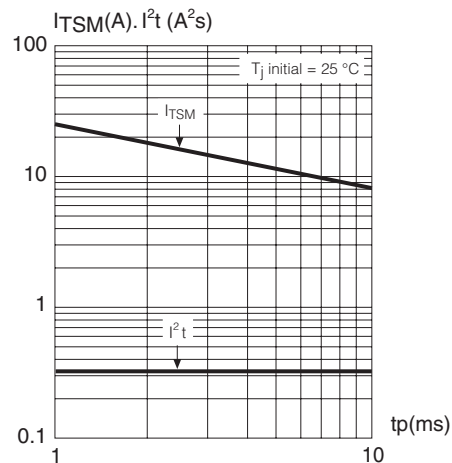


Fig. 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t .



LOGIC LEVEL TRIAC

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

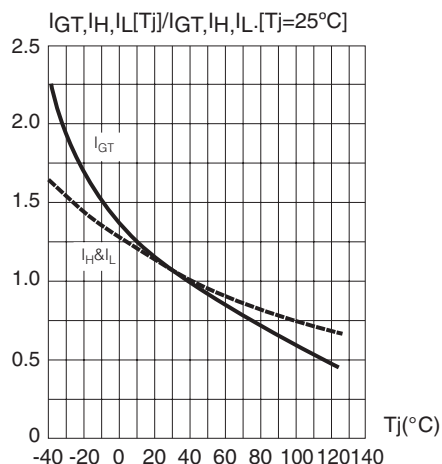


Fig. 8: Relative variation of critical rate of decrease of main current versus junction temperature

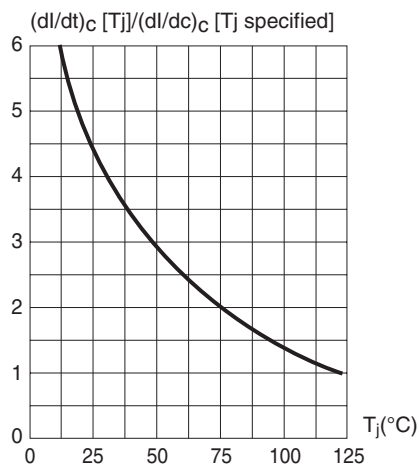
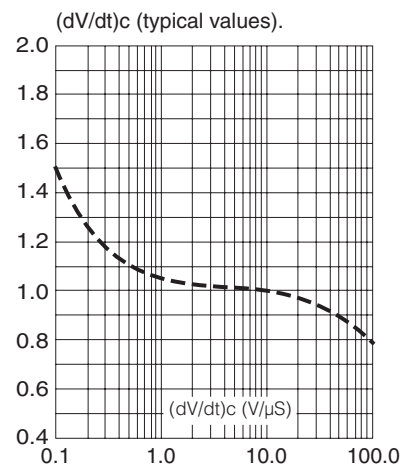
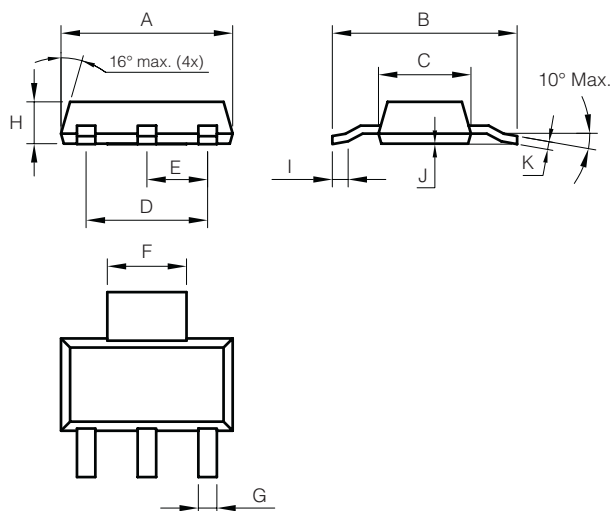


Fig. 9: Relative variation of critical rate of decrease of main current versus



PACKAGE MECHANICAL DATA

SOT223 (Plastic)



REF.	DIMENSIONS		
	Millimeters		
	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

