

SURFACE MOUNT SCR

SOT223 (Plastic)	On-State Current 1.25 Amp	Gate Trigger Current < 200 μ A
	Off-State Voltage 200 V ÷ 800 V	
These series of Silicon C ontrolled R ectifier use a high performance PNP technology.		
These parts are intended for general purpose applications where high gate sensitivity is required using surface mount technology.		

Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Min.	Max.	Unit
$I_{T(RMS)}$	On-state Current*	Half Cycle, $\theta = 180^\circ$, $T_{tab} = 95^\circ\text{C}$	1.25		A
$I_{T(AV)}$	Average On-state Current*	Half Cycle, $\theta = 180^\circ$, $T_{tab} = 95^\circ\text{C}$	0.8		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz, $T_j = 25^\circ\text{C}$	25		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz, $T_j = 25^\circ\text{C}$	22.5		A
I^2t	Fusing Current	$t_p = 10\text{ms}$, Half Cycle	2.5		A^2s
V_{GRM}	Peak Reverse Gate Voltage	$I_{CR} = 10 \mu\text{A}$, $T_j = 25^\circ\text{C}$	8		V
I_{GM}	Peak Gate Current	20 μs max.		1.2	A
P_{GM}	Peak Gate Dissipation	20 μs max.		3	W
$P_{G(AV)}$	Gate Dissipation	20 ms max.		0.2	W
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	$^\circ\text{C}$

* with 5 cm² copper ($e = 35\mu\text{m}$) surface under tab.

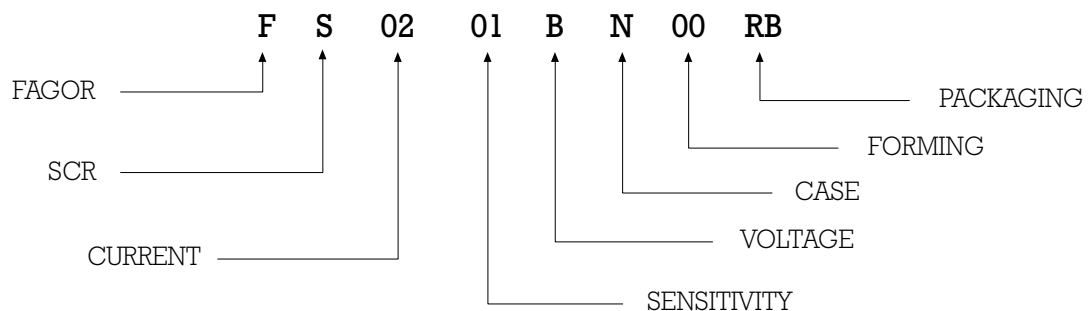
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE				Unit
			B	D	M	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1 \text{ K}$	200	400	600	800	V

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Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY				Unit	
			01	04	02	03		
I_{CT}	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 140 \Omega, T_j = 25^\circ C$	MIN	1	15		20	μA
			MAX	20	50	200	200	
I_{DRM} / I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}, R_{GK} = 1K, T_j = 125^\circ C$	MAX	500				μA
		$V_R = V_{RRM}, T_j = 25^\circ C$	MAX	5				
V_{TM}	On-state Voltage	at $I_T = 1.6 \text{ Amp}, t_p = 380 \mu s, T_j = 25^\circ C$	MAX	1.45				V
$V_{T(O)}$	On-state Threshold Voltage	$T_j = 125^\circ C$	MAX	0.9				V
r_d	Dinamic Resistance	$T_j = 125^\circ C$	MAX	150				m
V_{CT}	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 140 \Omega, T_j = 25^\circ C$	MAX	0.8				V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}, R_L = 3.3K, R_{GK} = 1K, T_j = 125^\circ C$	MIN	0.1				V
I_H	Holding Current	$I_T = 50 \text{ mA}, R_{GK} = 1K, T_j = 25^\circ C$	MAX	5				mA
I_L	Latching Current	$I_G = 1 \text{ mA}, R_{GK} = 1K, T_j = 25^\circ C$	MAX	6				mA
dv / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, R_{GK} = 1K, T_j = 125^\circ C$	MIN	15	15	10	20	V/ μs
di / dt	Critical Rate of Current Rise	$I_G = 2 \times I_{CT}, T_r = 100 \text{ ns}, F = 60 \text{ Hz}, T_j = 125^\circ C$	MIN	50				A/ μs
$R_{th(j-l)}$	Thermal Resistance Junction-Leads for DC			25				$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance Junction-Ambient			60				$^\circ C/W$

PART NUMBER INFORMATION



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Fig. 1: Maximum average power dissipation versus average on-state current

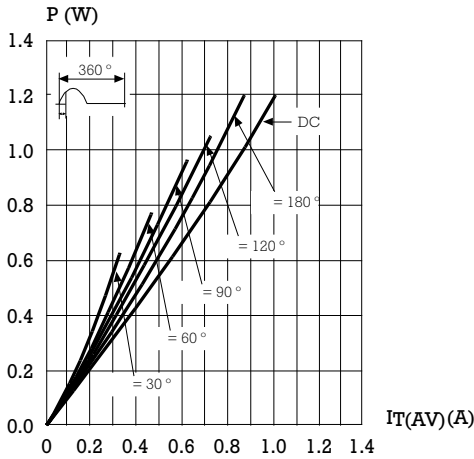


Fig. 3: Average on-state current versus tab temperature

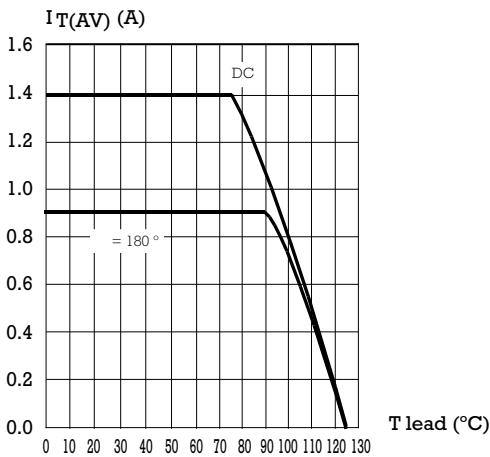


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

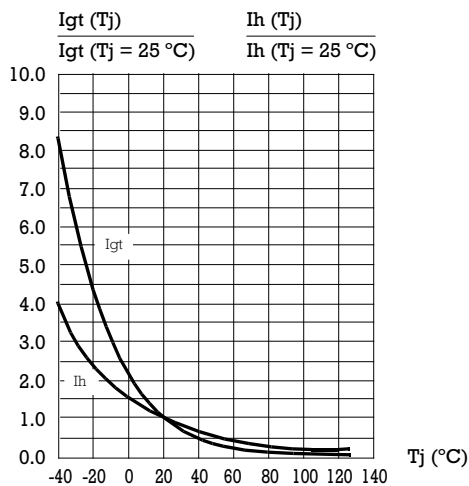


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and T tab).

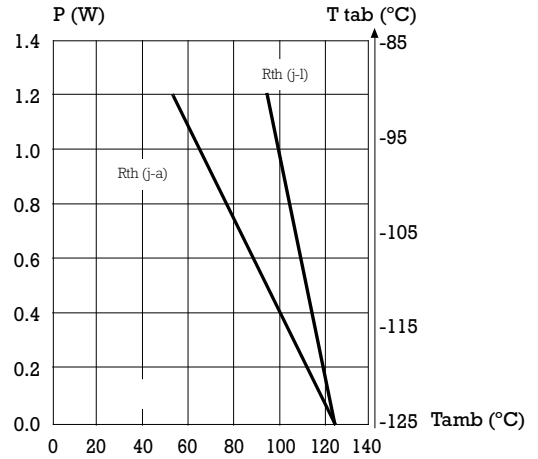


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

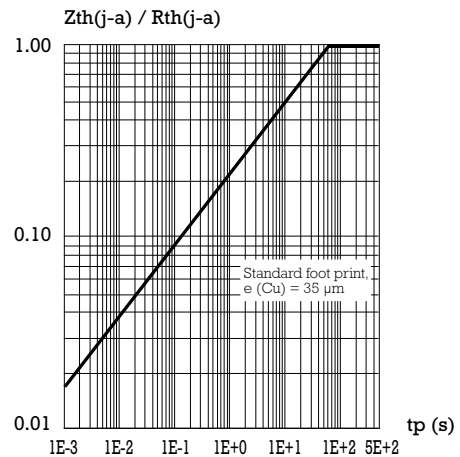
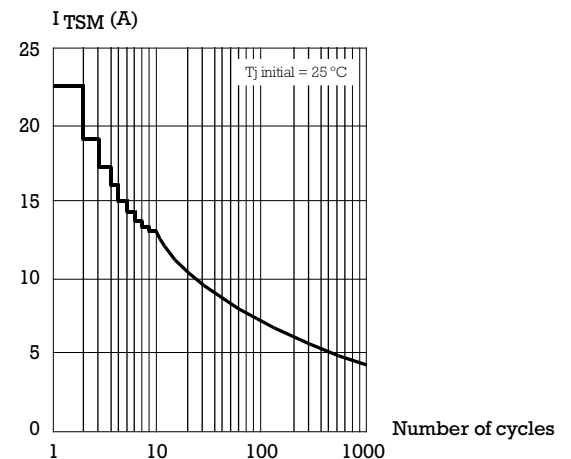


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



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Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: $t_p = 10$ ms, and corresponding value of I^2t .

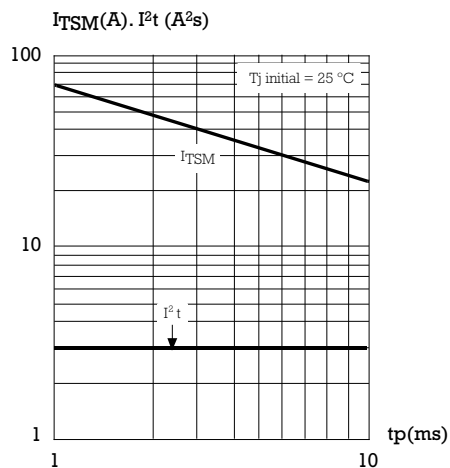
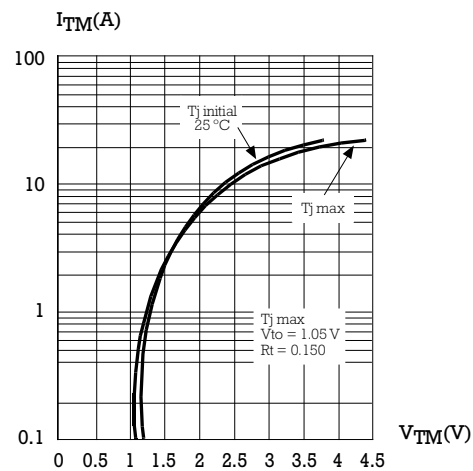
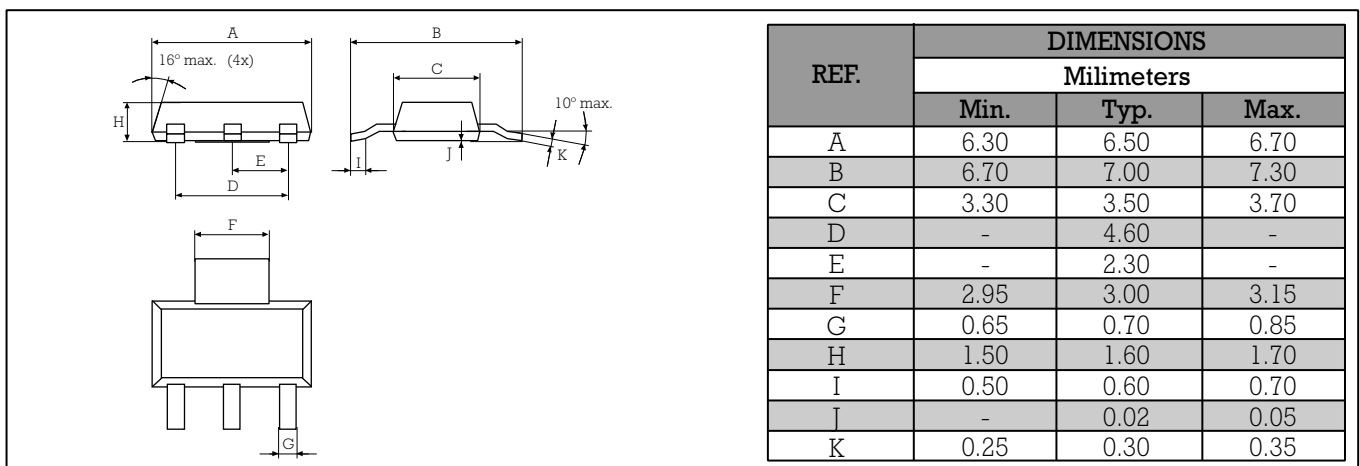


Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA SOT223 (Plastic)



Weight: 0.11 g

FOOT PRINT

