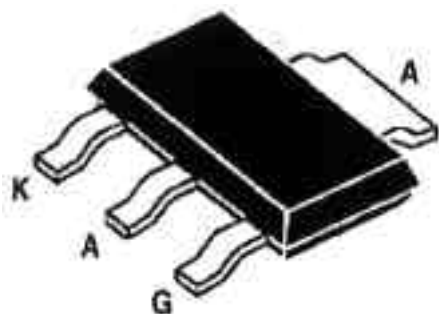


SURFACE MOUNT SCR

SOT223
(Plastic)



On-State Current

1.25 Amp

Gate Trigger Current

< 200 μ A

Off-State Voltage

200 V ÷ 800 V

These series of **S**ilicon **C**ontrolled **R**ectifier use a high performance PNPN 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, $Q = 180^\circ$, $T_{tab} = 95^\circ C$	1.25		A
$I_{T(AV)}$	Average On-state Current*	Half Cycle, $Q = 180^\circ$, $T_{tab} = 95^\circ C$	0.8		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz, $T_j = 25^\circ C$	25		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz, $T_j = 25^\circ C$	22.5		A
I^2t	Fusing Current	$t_p = 10ms$, Half Cycle	2.5		A ² s
V_{GRM}	Peak Reverse Gate Voltage	$I_{GR} = 10 \mu A$, $T_j = 25^\circ C$	8		V
I_{GM}	Peak Gate Current			1.2	A
P_{GM}	Peak Gate Dissipation			3	W
$P_{G(AV)}$	Gate Dissipation			0.2	W
T_j	Operating Temperature		-40	+125	$^\circ C$
T_{stg}	Storage Temperature		-40	+150	$^\circ C$
T_{sld}	Soldering Temperature			260	$^\circ C$

* with 5 cm² copper (e= 35mm) surface under tab.

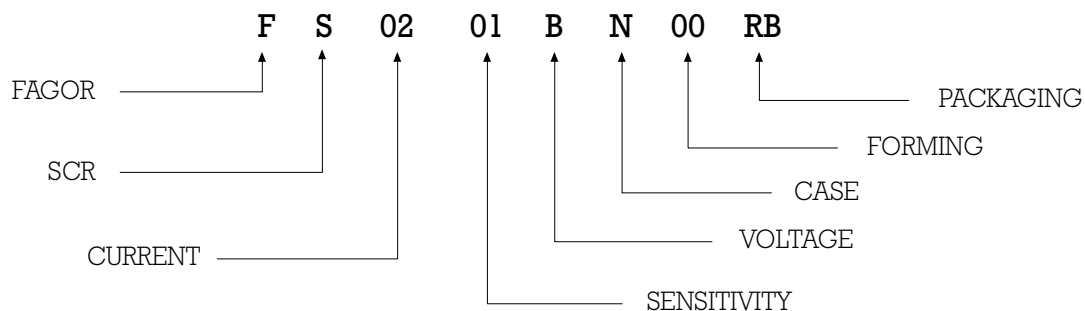
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE				Unit
			B	D	M	N	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1 KW$	200	400	600	800	V

SURFACE MOUNT SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS		SENSITIVITY				Unit
				01	04	02	03	
I_{GT}	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 140W, T_j = 25^\circ C$	MIN MAX	1 20	15 50	 200	20 200	μA
I_{DRM} / I_{RRM}	Off-State Leakage Current	$V_D = V_{DRM}, R_{GK} = 1KW, T_j = 125^\circ C$ $V_R = V_{RRM}, T_j = 25^\circ C$	MAX MAX	500 5				μA
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				mW
V_{GT}	Gate Trigger Voltage	$V_D = 12 V_{DC}, R_L = 140W, T_j = 25^\circ C$	MAX	0.8				V
V_{GD}	Gate Non Trigger Voltage	$V_D = V_{DRM}, R_L = 3.3KW, R_{GK} = 1KW, T_j = 125^\circ C$	MIN	0.1				V
I_H	Holding Current	$I_T = 50 \text{ mA}, R_{GK} = 1KW, T_j = 25^\circ C$	MAX	5				mA
I_L	Latching Current	$I_G = 1 \text{ mA}, R_{GK} = 1KW, T_j = 25^\circ C$	MAX	6				mA
dv / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, R_{GK} = 1KW, T_j = 125^\circ C$	MIN	15	15	10	20	V/ μs
di / dt	Critical Rate of Current Rise	$I_G = 2 \times I_{GT}, Tr \leq 100 \text{ ns}, F = 60 \text{ Hz}, T_j = 125^\circ C$	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



SURFACE MOUNT SCR

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

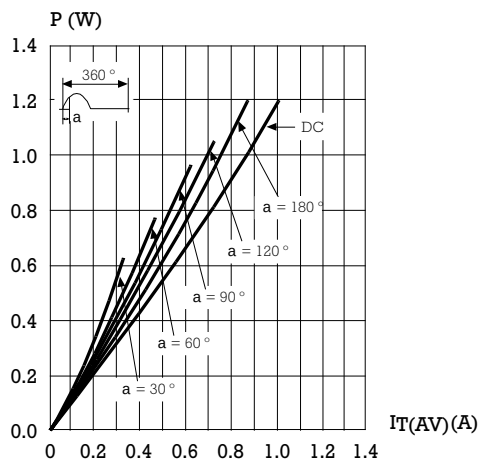


Fig. 3: Average on-state current versus tab temperature

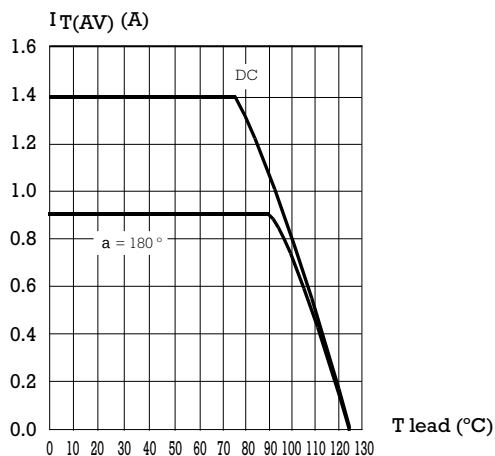


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

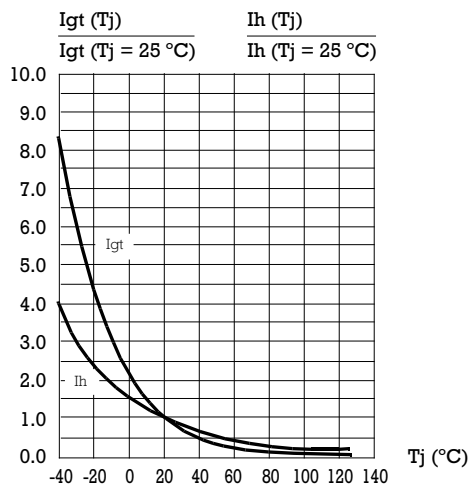


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and T tab).

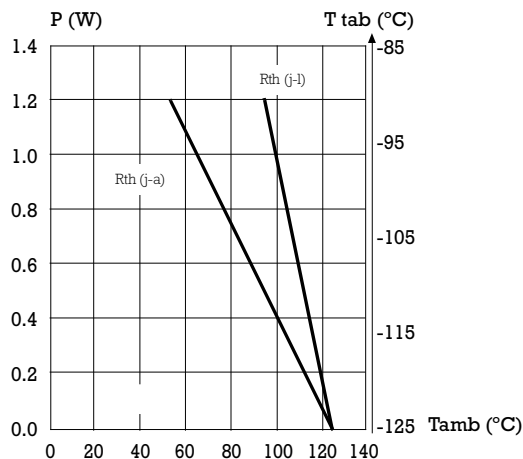


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

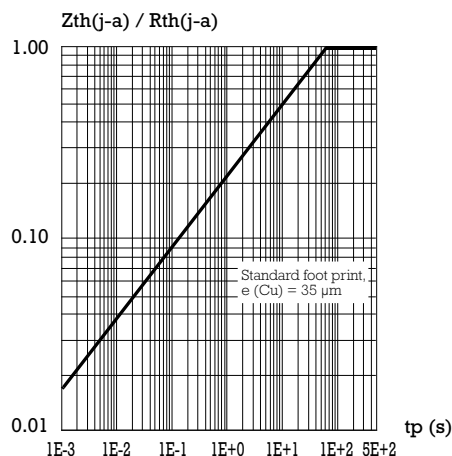
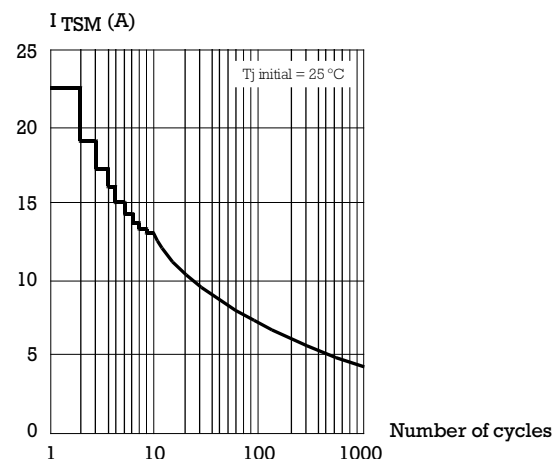


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



SURFACE MOUNT SCR

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

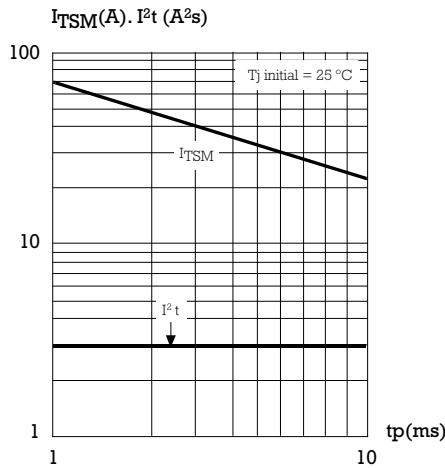
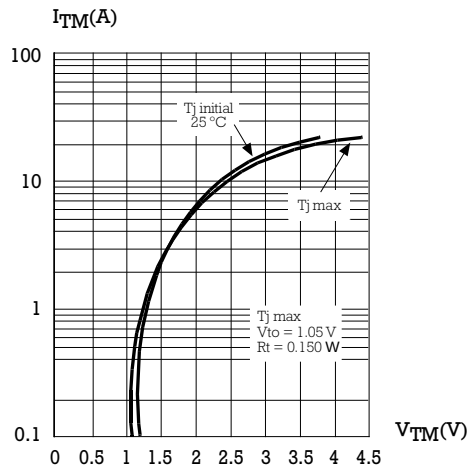
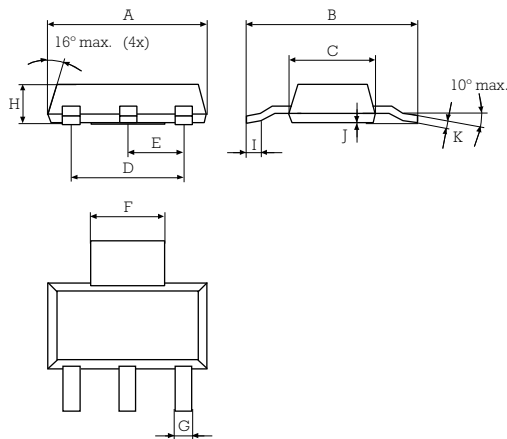


Fig. 8: On-state characteristics (maximum values).



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

