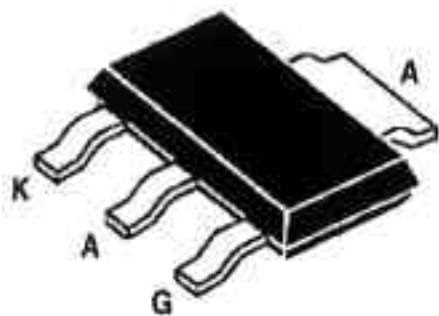


SURFACE MOUNT SCR

SOT223
(Plastic)



On-State Current

0.8 Amp

Gate Trigger Current

< 200 μ A

Off-State Voltage

200 V ÷ 600 V

These series of **Silicon C**ontrolled **R**ectifiers uses 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	All Conduction Angle, $T_{tab} = 70\text{ }^{\circ}\text{C}$	0.8		A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $Q = 180\text{ }^{\circ}$, $T_{tab} = 70\text{ }^{\circ}\text{C}$	0.5		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 60 Hz, $T_j = 25\text{ }^{\circ}\text{C}$	8		A
I_{TSM}	Non-repetitive On-State Current	Half Cycle, 50 Hz, $T_j = 25\text{ }^{\circ}\text{C}$	7		A
I^2t	Fusing Current	$t_p = 10\text{ms}$, Half Cycle	0.24		A^2s
V_{GRM}	Peak Reverse Gate Voltage	$I_{GR} = 10\text{ }\mu\text{A}$	8		V
I_{GM}	Peak Gate Current	20 μs max.		1	A
P_{GM}	Peak Gate Dissipation	20 μs max.		2	W
$P_{G(AV)}$	Gate Dissipation	20ms max.		0.1	W
T_j	Operating Temperature		-40	+125	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40	+150	$^{\circ}\text{C}$
T_{sld}	Soldering Temperature	1.6 mm from case, 10s max.		260	$^{\circ}\text{C}$

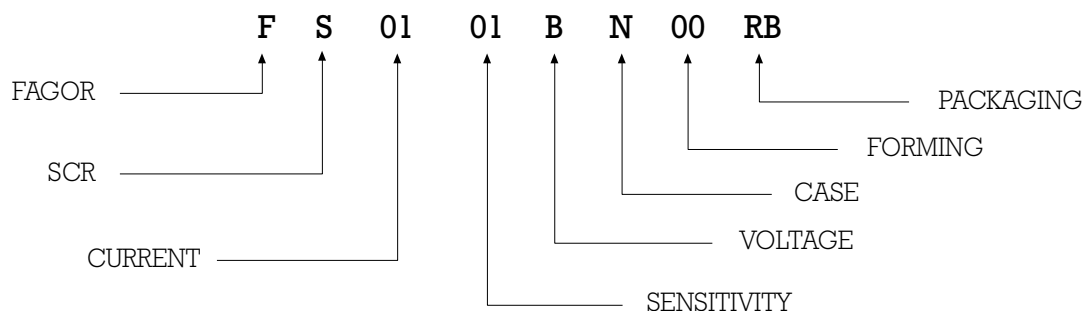
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE			Unit
			B	D	M	
V_{DRM} V_{RRM}	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ KW}$	200	400	600	V

SURFACE MOUNT SCR

Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY						Unit	
			01	02	03	04	11	18		
I _{GT}	Gate Trigger Current	V _D = 12 V _{DC} , R _L = 140W, T _j = 25 °C	MIN MAX	1 20	200 200	20 200	15 50	4 25	0.5 5	μA
I _{DRM} / I _{RRM}	Off-State Leakage Current	V _D = V _{DRM} , R _{GK} = 1KW, T _j = 125 °C V _R = V _{RRM} , T _j = 25 °C	MAX MAX	100 1						μA
V _{TM}	On-state Voltage	at I _T = 1.6 Amp, tp = 380 μs, T _j = 25 °C	MAX	1.95						V
V _{T(O)}	On-state Threshold Voltage	T _j = 125 °C	MAX	0.95						V
r _d	Dinamic Resistance	T _j = 125 °C	MAX	600						mW
V _{GT}	Gate Trigger Voltage	V _D = 12 V _{DC} , R _L = 140W, T _j = 25 °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 °C	MIN	0.1						V
I _H	Holding Current	I _T = 50 mA , R _{GK} = 1KW, T _j = 25 °C	MAX	5						mA
I _L	Latching Current	I _G = 1 mA , R _{GK} = 1KW, T _j = 25 °C	MAX	6						mA
dv / dt	Critical Rate of Voltage Rise	V _D = 0.67 x V _{DRM} , R _{GK} = 1KW, T _j = 125 °C	MIN	75	75	100	80	80	75	V/μs
di / dt	Critical Rate of Current Rise	I _G = 2 x I _{GT} Tr £ 100 ns, F = 60 Hz, T _j = 125 °C	MIN	50						A/μs
R _{th(j-l)}	Thermal Resistance Junction-Leads for DC			80						°C/W
R _{th(j-a)}	Thermal Resistance Junction-Ambient			150						°C/W

PART NUMBER INFORMATION



SURFACE MOUNT SCR

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

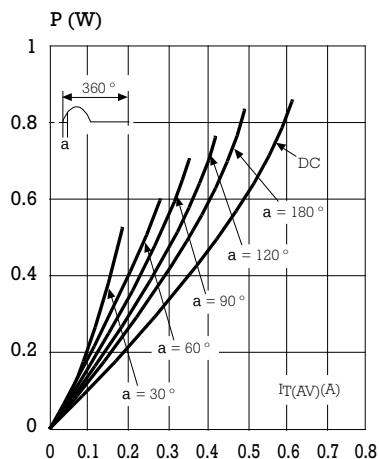


Fig. 3: Average on-state current versus tab temperature

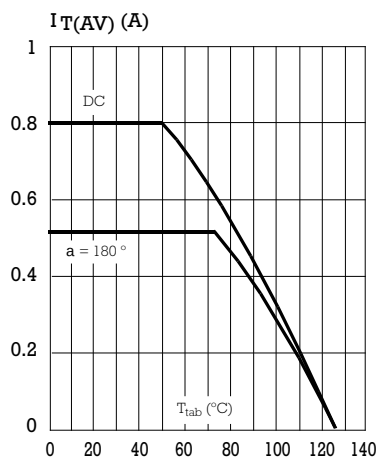


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

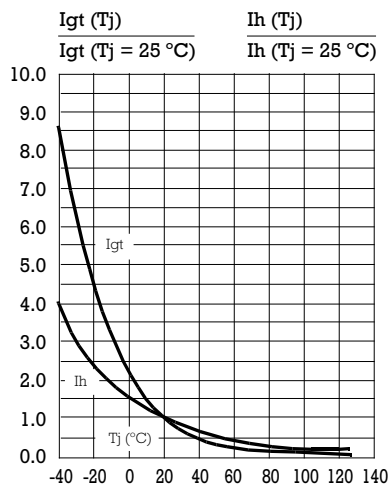


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperature (Tamb and Ttab).

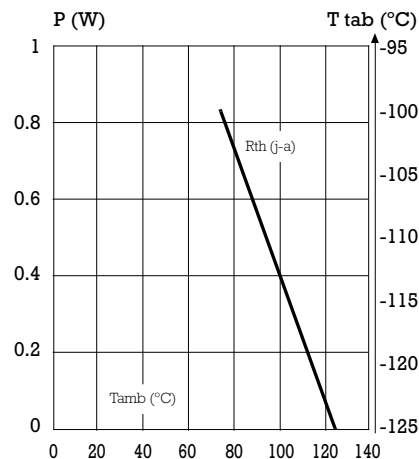


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

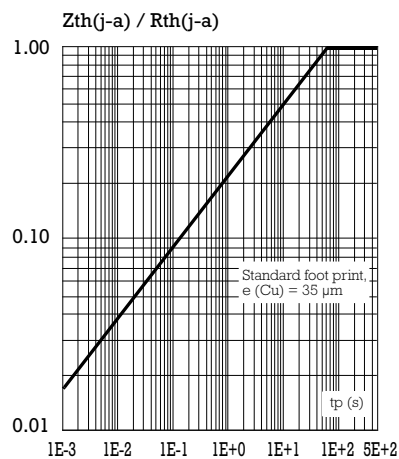
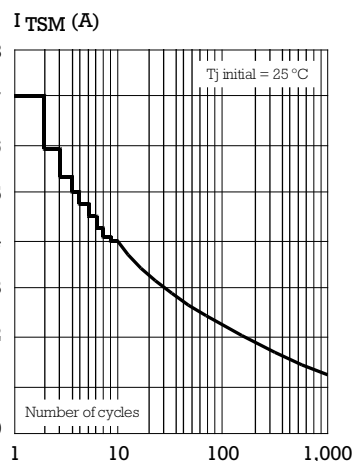


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



SURFACE MOUNT SCR

Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width: tp £ 10 ms, and corresponding value of I²t.

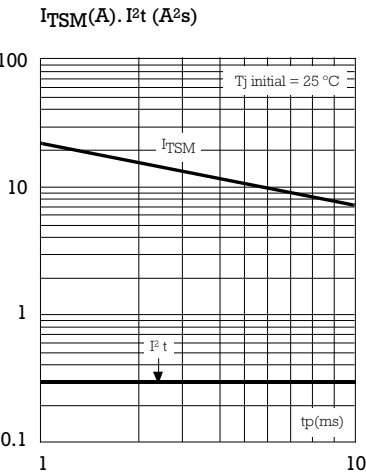


Fig. 8: On-state characteristics (maximum values).

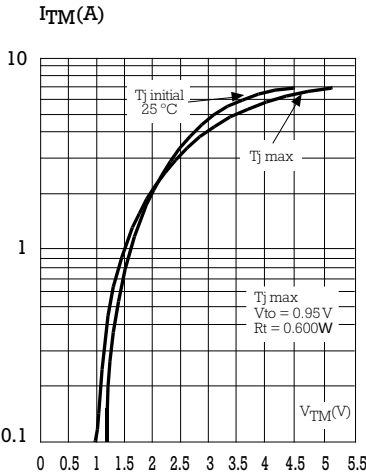
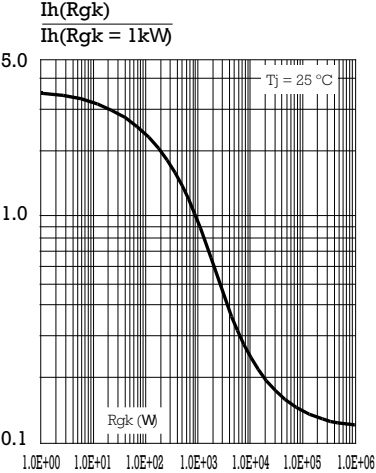
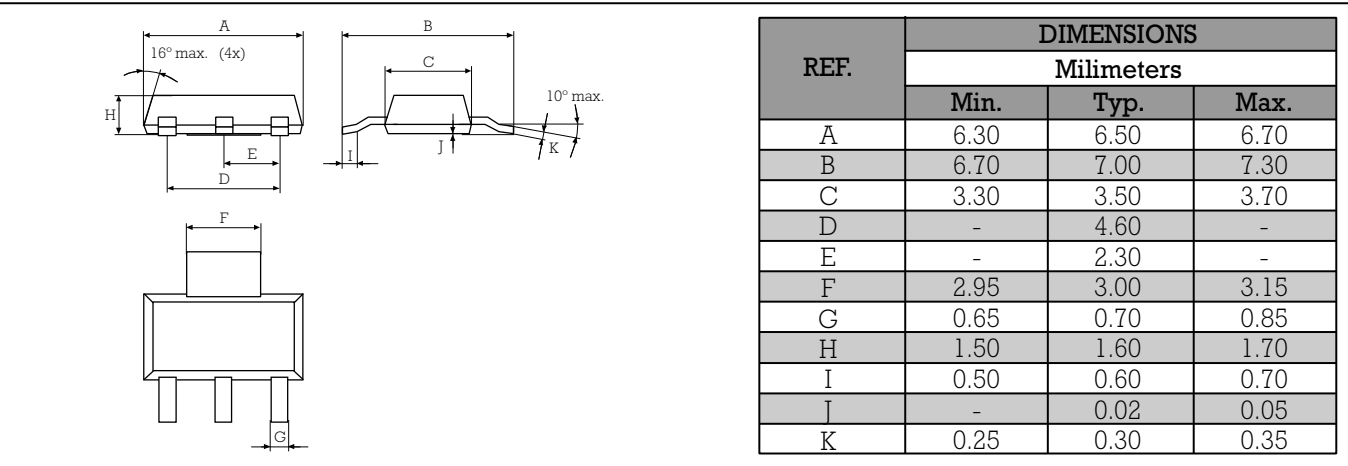


Fig. 9: Relative variation of holding current versus gate-cathode resistance (typical values).



PACKAGE MECHANICAL DATA SOT223 (Plastic)



Weight: 0.11 g

FOOT PRINT

