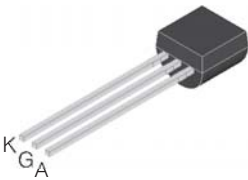
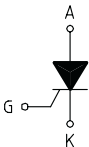


## SENSITIVE GATE SCR

<p><b>TO92</b> (Plastic)</p>  <p>FS01...A</p> 	<p><b>On-State Current</b> 0.8 Amp</p> <p><b>Gate Trigger Current</b> &lt; 200 <math>\mu</math>A</p> <p><b>Off-State Voltage</b> 200 V to 800 V</p> <p>This series of <b>Silicon C</b>ontrolled <b>R</b>ectifiers uses a high performance PNP technology.</p> <p>This part is intended for general purpose applications where high gate sensitivity is required.</p>
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## Absolute Maximum Ratings, according to IEC publication No. 134

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 115\text{ }^\circ\text{C}$	0.8	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180^\circ$ , $T_c = 115\text{ }^\circ\text{C}$	0.5	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 60 Hz	8	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 50 Hz	7	A
$I^2t$	Fusing Current	$t_p = 10\text{ms}$ , Half Cycle	0.24	$\text{A}^2\text{s}$
$I_{GM}$	Peak Gate Current	20 $\mu\text{s}$ max.	1	A
$P_{GM}$	Peak Gate Dissipation	20 $\mu\text{s}$ max.	2	W
$P_{G(AV)}$	Gate Dissipation	20 $\mu\text{s}$ max.	0.1	W
$T_j$	Operating Temperature		(-40 to + 125)	$^\circ\text{C}$
$T_{stg}$	Storage Temperature		(-40 to + 150)	$^\circ\text{C}$
$T_{sld}$	Soldering Temperature	10s max.	260	$^\circ\text{C}$

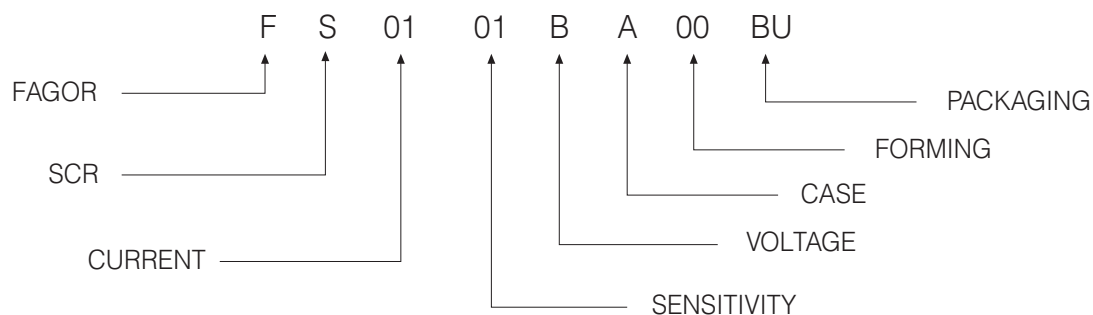
SYMBOL	PARAMETER	CONDITIONS	VOLTAGE				Unit
			B	D	M	N	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	800	V

## SENSITIVE GATE SCR

### Electrical Characteristics

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY					Unit	
			01	02	03	04	18		
I <sub>GT</sub>	Gate Trigger Current	V <sub>D</sub> = 12 V <sub>DC</sub> , R <sub>L</sub> = 140Ω, T <sub>j</sub> = 25 °C	MIN	1		20	15	0.5	μA
			MAX	20	200	200	50	5	
V <sub>GT</sub>	Gate Trigger Voltage	V <sub>D</sub> = 12 V <sub>DC</sub> , R <sub>L</sub> = 140Ω, T <sub>j</sub> = 25 °C	MAX	0.8					V
V <sub>GD</sub>	Gate Non Trigger Voltage	V <sub>D</sub> = V <sub>DRM</sub> , R <sub>L</sub> = 3.3kΩ, R <sub>GK</sub> = 220Ω T <sub>j</sub> = 125 °C	MIN	0.1					V
V <sub>RGM</sub>	Reverse Gate Voltage	I <sub>RG</sub> = 10μA,	MIN	8					V
I <sub>H</sub>	Holding Current	I <sub>T</sub> = 50 mA, R <sub>GK</sub> = 1kΩ, T <sub>j</sub> = 25 °C	MAX	5					mA
I <sub>L</sub>	Latching Current	I <sub>G</sub> = 1 mA, R <sub>GK</sub> = 1 kΩ	MAX	6					mA
dV / dt	Critical Rate of Voltage Rise	V <sub>D</sub> = 0.67 x V <sub>DRM</sub> , R <sub>GK</sub> = 1 kΩ, T <sub>j</sub> = 125 °C	MIN	80	75	20	15	80	V/μs
dI / dt	Critical Rate of Current Rise	I <sub>G</sub> = 2 x I <sub>GT</sub> , tr ≤ 100 ns, f = 60 Hz, T <sub>j</sub> = 125 °C	MIN	50					A/μs
V <sub>TM</sub>	On-state Voltage	at I <sub>T</sub> = 1.6 Amp, tp = 380 μs, T <sub>j</sub> = 25 °C	MAX	1.95					V
V <sub>t0</sub>	Threshold Voltage	T <sub>j</sub> = 125 °C	MAX	0.95					V
r <sub>d</sub>	Dynamic resistance	T <sub>j</sub> = 125 °C	MAX	600					mΩ
I <sub>DRM</sub> / I <sub>RRM</sub>	Off-State Leakage Current	V <sub>D</sub> = V <sub>DRM</sub> , R <sub>GK</sub> = 1kΩ, T <sub>j</sub> = 125 °C	MAX	100					μA
		V <sub>R</sub> = V <sub>RRM</sub> , T <sub>j</sub> = 25 °C	MAX	1					μA
R <sub>th(j-c)</sub>	Thermal Resistance Junction-Amb for DC	for AC 360° conduction angle		80					°C/W
R <sub>th(j-a)</sub>	Thermal Resistance Junction-Amb for DC	S = 1cm <sup>2</sup>		150					°C/W

### PART NUMBER INFORMATION



## SENSITIVE GATE SCR

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

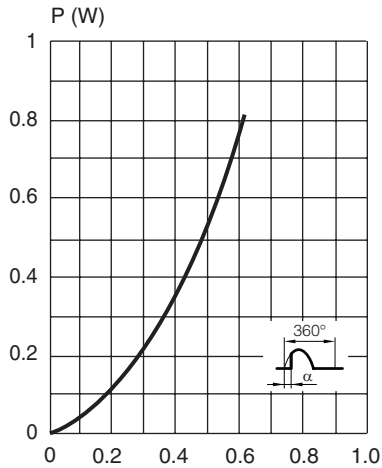


Fig. 2: Average and D.C. on-state current versus case temperature

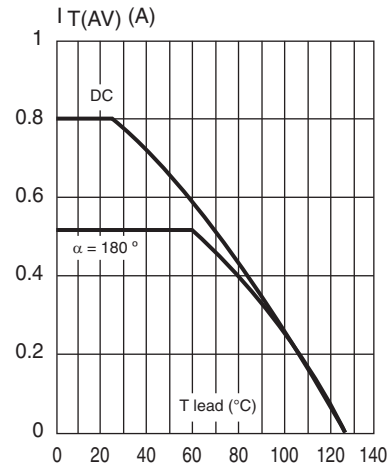


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration

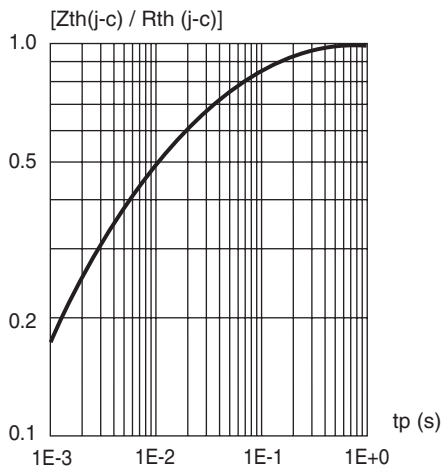


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature

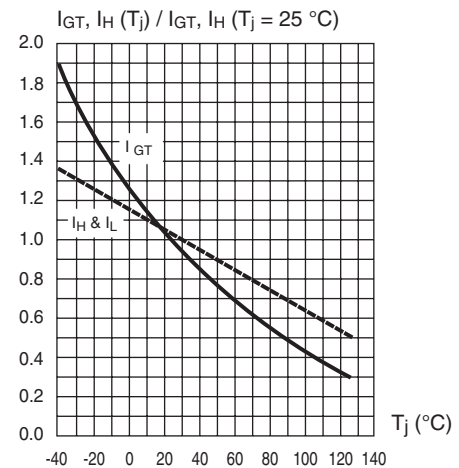


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

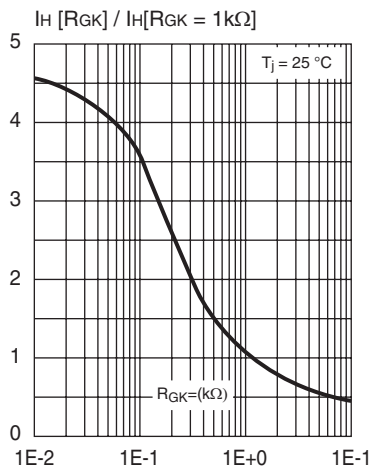
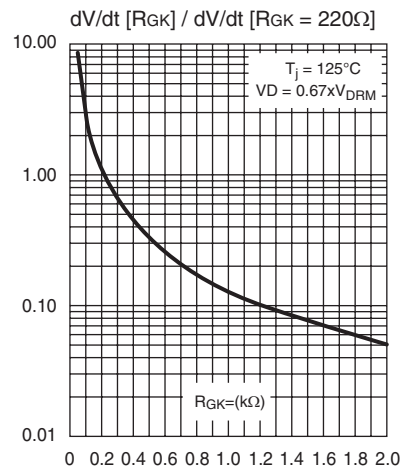


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).



**SENSITIVE GATE SCR**

Fig. 7: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).

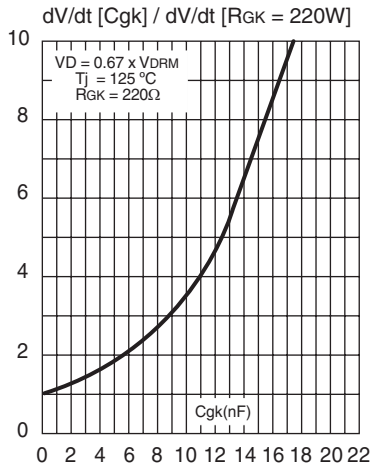


Fig. 8: Non repetitive surge peak on-state current versus number of cycles.

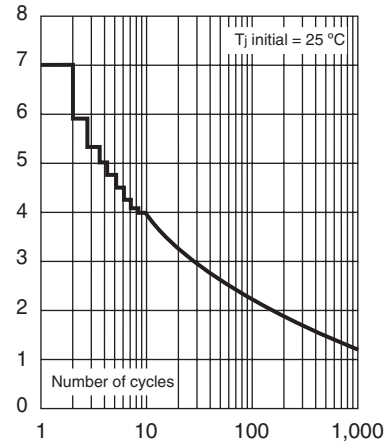


Fig. 9: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10$  ms, and corresponding value of  $I^2t$ .

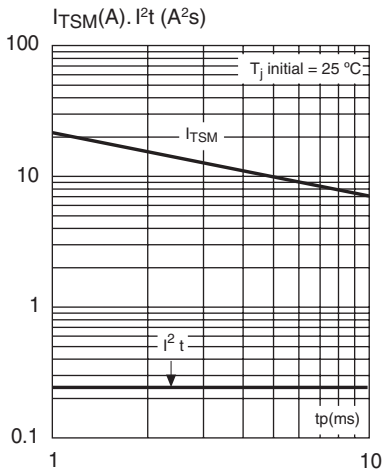
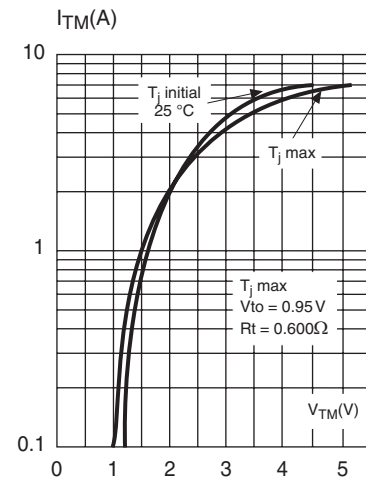
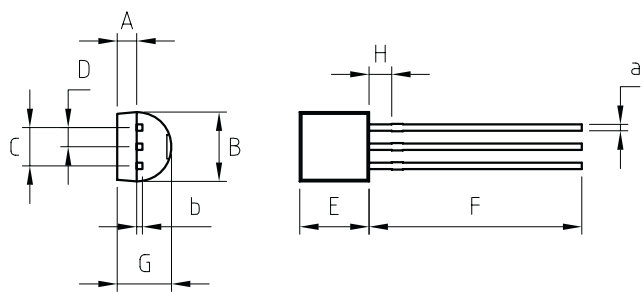


Fig. 10: On-state characteristics (maximum values)



**SENSITIVE GATE SCR**

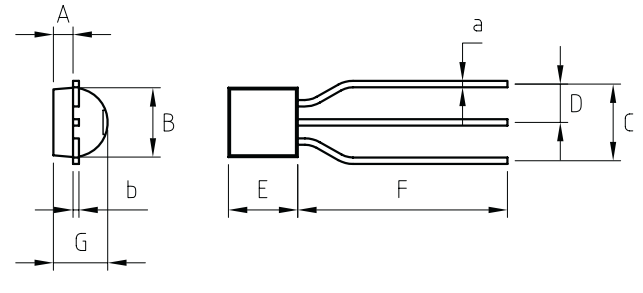
PACKAGE MECHANICAL DATA TO92



REF.	DIMENSIONS		
	Milimeters		
	Min.	Typ.	Max.
A	0.90	1.20	1.50
B	4.40	4.60	4.80
C	2.34	2.54	2.74
D	1.07	1.27	1.47
E	4.40	4.60	4.80
F	12.70	14.10	15.50
G	3.40	3.60	3.86
H	1.30	1.50	1.70
a	0.38	0.44	0.51
	0.33	0.41	0.51

Marking: type number  
Weight: 0.2 g

PACKAGE MECHANICAL DATA TO92 (FOR TAPE & REEL)



REF.	DIMENSIONS		
	Milimeters		
	Min.	Typ.	Max.
A	0.90	1.20	1.50
B	4.40	4.60	4.80
C	4.96	5.08	5.20
D	2.42	2.54	2.66
E	4.40	4.60	4.80
F	12.70	14.10	15.50
G	3.40	3.60	3.86
a	0.38	0.44	0.51
b	0.33	0.41	0.51

Marking: type number  
Weight: 0.2 g