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### Product: Sensitive Gate SCRs

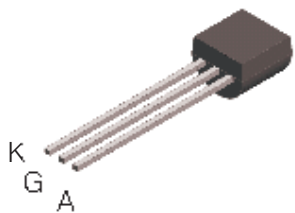
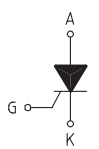
Sensitive Gate SCRs are easy to drive thanks to their very low gate current triggering.

This high gate sensitivity allows direct triggering from outputs of low power microcontrollers or logic IC, simplifying drive circuit design and reducing component and assembly cost.

They are suitable for low power applications where low consumption is mandatory.

Product	Family	$I_{T(RMS)}$	$V_{RRM}/V_{DRM}$ (V)	$I_{TSM}$ (A)	$I_{GT\ min}$ ( $\mu$ A)	$I_{GT\ min}$ (mA)	$I_{GT\ max}$ ( $\mu$ A)	$I_{GT\ max}$ (mA)	$dv/dt_{(min)}$ V/ $\mu$ s	PACKAGE
<a href="#">FS0202DA</a>	FS02A(SeG)	1.25	400	22.5	-		200		10	TO92

**SENSITIVE GATE SCR**

<p style="text-align: center;">TO92 (Plastic)</p> <div style="text-align: center;">  </div> <p style="text-align: center;">FS02...A</p> <div style="text-align: center;">  </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 50%;"><b>On-State Current</b></td> <td style="text-align: center; width: 50%;"><b>Gate Trigger Current</b></td> </tr> <tr> <td style="text-align: center;">1.25 Amp</td> <td style="text-align: center;">&lt; 200 <math>\mu</math>A</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;"><b>Off-State Voltage</b></td> </tr> <tr> <td colspan="2" style="text-align: center;">200 V <math>\div</math> 800 V</td> </tr> </table> <p style="padding-top: 20px;">This series of <b>Silicon Controlled Rectifiers</b> uses a high performance PNPN technology.</p> <p>This part is intended for general purpose applications where high gate sensitivity is required.</p>	<b>On-State Current</b>	<b>Gate Trigger Current</b>	1.25 Amp	< 200 $\mu$ A	<b>Off-State Voltage</b>		200 V $\div$ 800 V	
<b>On-State Current</b>	<b>Gate Trigger Current</b>								
1.25 Amp	< 200 $\mu$ A								
<b>Off-State Voltage</b>									
200 V $\div$ 800 V									

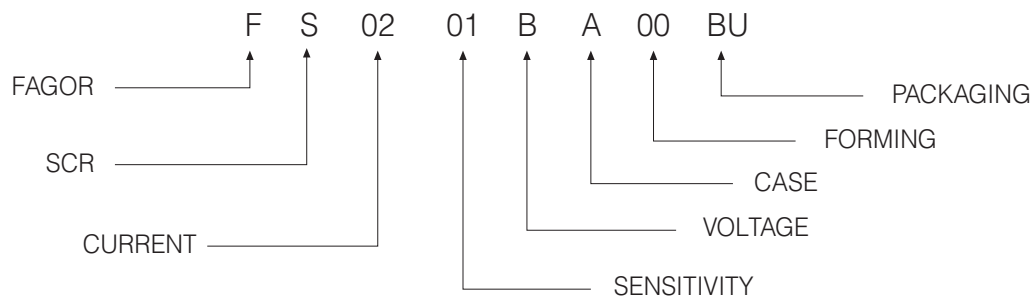
**Absolute Maximum Ratings, according to IEC publication No. 134**

SYMBOL	PARAMETER	CONDITIONS	Value	Unit
$I_{T(RMS)}$	On-state Current	180° Conduction Angle, $T_c = 115\text{ }^\circ\text{C}$	1.25	A
$I_{T(AV)}$	Average On-state Current	Half Cycle, $\Theta = 180^\circ$ , $T_c = 115\text{ }^\circ\text{C}$	0.8	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 60 Hz	25	A
$I_{TSM}$	Non-repetitive On-State Current	Half Cycle, 50 Hz	22.5	A
$I^2t$	Fusing Current	$t_p = 10\text{ms}$ , Half Cycle	2.5	A <sup>2</sup> s
$I_{GM}$	Peak Gate Current	20 $\mu$ s max.	1.2	A
$P_{GM}$	Peak Gate Dissipation	20 $\mu$ s max.	3	W
$P_{G(AV)}$	Gate Dissipation	20ms max.	0.2	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	S	N	
$V_{DRM}$ $V_{RRM}$	Repetitive Peak Off State Voltage	$R_{GK} = 1\text{ k}\Omega$	200	400	600	700	800	V

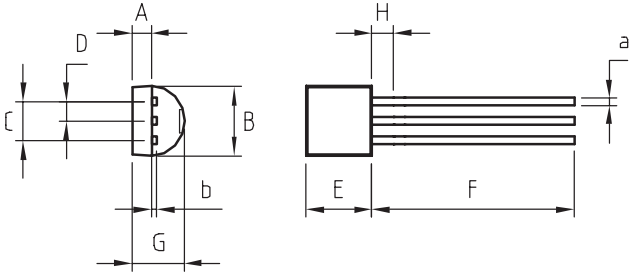
**SENSITIVE GATE SCR**
**Electrical Characteristics**

SYMBOL	PARAMETER	CONDITIONS	SENSITIVITY				Uni	
			01	02	03	04		
$I_{GT}$	Gate Trigger Current	$V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$	MIN MAX	1 20	200	20 200	15 50	$\mu A$
$V_{GT}$	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	$V_D = V_{DRM}, R_L = 3.3k\Omega, R_{GK} = 220\Omega, T_j = 125^\circ C$	MIN	0.1				V
$V_{RGM}$	Reverse Gate Voltage	$I_{RG} = 10\mu A,$	MIN	8				V
$I_H$	Holding Current	$I_T = 50 mA, R_{GK} = 1k\Omega, T_j = 25^\circ C$	MAX	5				mA
$I_L$	Latching Current	$I_G = 1 mA, R_{GK} = 1k\Omega$	MAX	6				mA
dV / dt	Critical Rate of Voltage Rise	$V_D = 0.67 \times V_{DRM}, R_{GK} = 1k\Omega, T_j = 125^\circ C$	MIN	15	10	30	30	V/ $\mu s$
dI / dt	Critical Rate of Current Rise	$I_G = 2 \times I_{GT}, tr \leq 100 ns, f = 60 Hz, T_j = 125^\circ C$	MIN	50				A/ $\mu s$
$V_{TM}$	On-state Voltage	at $I_T = 2.5 Amp, tp = 380 \mu s, T_j = 25^\circ C$	MAX	1.45				V
$V_{t0}$	Threshold Voltage	$T_j = 125^\circ C$	MAX	0.95				V
$r_d$	Dynamic resistance	$T_j = 125^\circ C$	MAX	400				m $\Omega$
$I_{DRM} / I_{RRM}$	Off-State Leakage Current	$V_D = V_{DRM}, R_{GK} = 1k\Omega, T_j = 125^\circ C$ $V_R = V_{RRM}, T_j = 25^\circ C$	MAX MAX	100 1				$\mu A$ $\mu A$
$R_{th(j-c)}$	Thermal Resistance Junction-Case for DC	for AC 360° conduction angle		60				°C/W
$R_{th(j-a)}$	Thermal Resistance Junction-Amb for DC	$S = 1cm^2$		150				°C/W

**PART NUMBER INFORMATION**


**SENSITIVE GATE SCR**

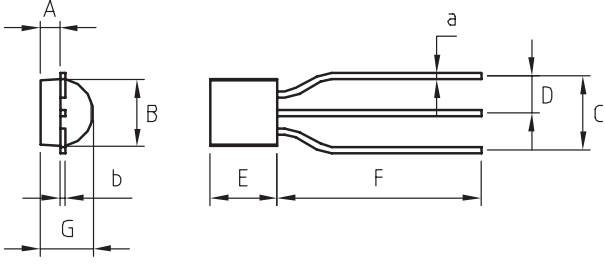
**PACKAGE MECHANICAL DATA TO92**



REF.	DIMENSIONS		
	Millimeters		
	Min.	Typ.	Max.
A	0.9	1.2	1.5
B	4.40	4.6	4.80
C	2.34	2.54	2.74
D	1.07	1.27	1.47
E	4.40	4.6	4.80
F	12.7	14.1	15.5
G	3.40	3.6	3.86
H	1.30	1.5	1.70
a	0.38	0.44	0.51
b	0.33	0.41	0.51

Marking: type number  
Weight: 0.2 g

**PACKAGE MECHANICAL DATA TO92 (FOR TAPE & REEL)**



REF.	DIMENSIONS		
	Millimeters		
	Min.	Typ.	Max.
A	-	1.5	-
B	4.55	4.6	4.65
C	4.96	5.08	5.2
D	2.42	2.54	2.66
E	4.55	4.6	4.65
F	12.7	14.1	15.5
G	3.55	3.6	3.65
a	0.38	0.43	0.48
b	0.33	0.38	0.43

Marking: type number  
Weight: 0.2 g