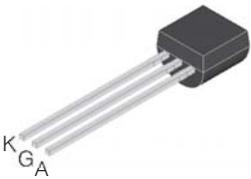
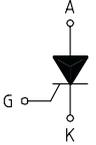


## SENSITIVE GATE SCR

|  |   |                                    |  |  |  |
|--|---|------------------------------------|--|--|--|
| <p style="text-align: center;"><b>TO92</b><br/>(Plastic)</p> <div style="text-align: center;">  <p style="margin-top: 10px;">K<br/>G<br/>A</p> </div> <p style="text-align: center; margin-top: 20px;">FS01...A</p> <div style="text-align: center; margin-top: 20px;">  </div> | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 5px;"><b>On-State Current</b><br/>0.8 Amp</td> <td style="width: 50%; text-align: center; padding: 5px;"><b>Gate Trigger Current</b><br/>&lt; 200 <math>\mu</math>A</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;"><b>Off-State Voltage</b><br/>200 V to 800 V</td> </tr> </table> <p style="margin-top: 20px;">This series of <b>Silicon C</b>ontrolled <b>R</b>ectifiers 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><br>0.8 Amp | <b>Gate Trigger Current</b><br>< 200 $\mu$ A | <b>Off-State Voltage</b><br>200 V to 800 V |  |
| <b>On-State Current</b><br>0.8 Amp   | <b>Gate Trigger Current</b><br>< 200 $\mu$ A  |                                    |  |  |  |
| <b>Off-State Voltage</b><br>200 V to 800 V   |   |                                    |  |  |  |

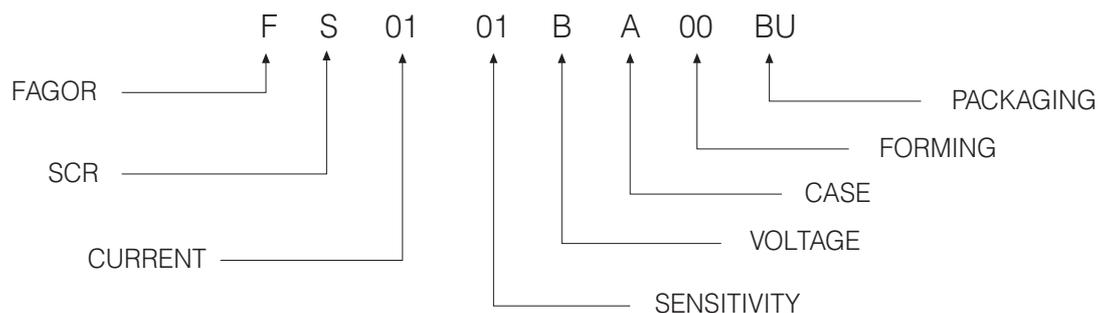
### Absolute Maximum Ratings, according to IEC publication No. 134

| SYMBOL       | PARAMETER                       | CONDITIONS   | Value          | Unit                 |
|--------------|---------------------------------|--|----------------|----------------------|
| $I_{T(RMS)}$ | On-state Current                | 180° Conduction Angle, $T_c = 115\text{ }^\circ\text{C}$             | 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   |      |
| $V_{DRM}$<br>$V_{RRM}$ | 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<br>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,<br>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,<br>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<br>Junction-Amb for DC | for AC 360° conduction angle  |             | 80   |     |     |    |      | °C/W |
| R <sub>th(j-a)</sub>                | Thermal Resistance<br>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

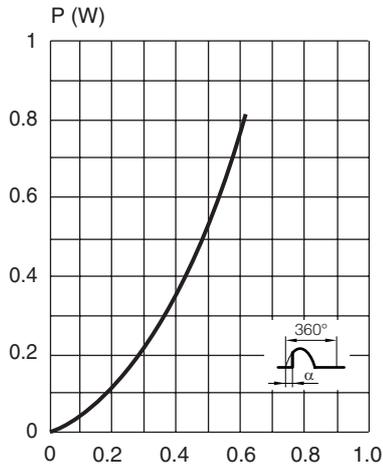


Fig. 2: Average and D.C. on-state current versus case temperature

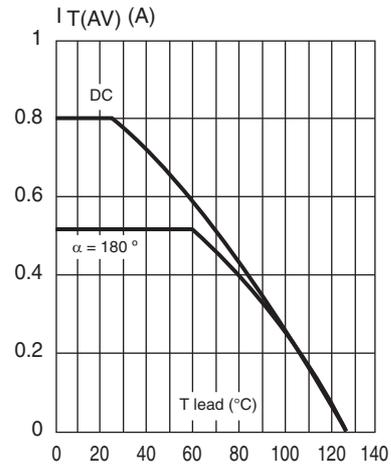


Fig. 3: Relative variation of thermal impedance junction to case versus pulse duration

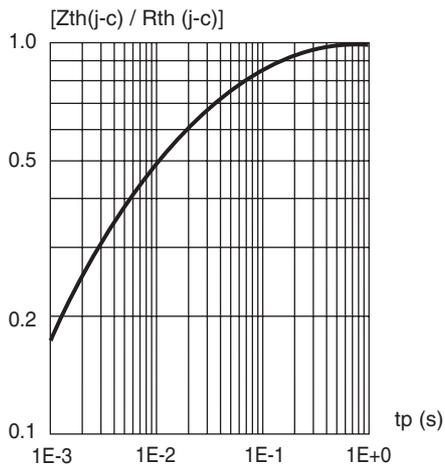


Fig. 4: Relative variation of gate trigger current, holding and latching current versus junction temperature

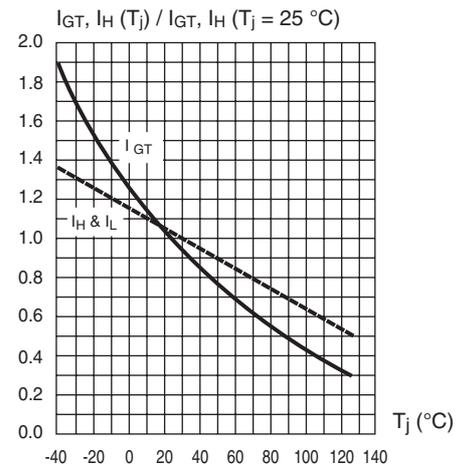


Fig. 5: Relative variation of holding current versus gate-cathode resistance (typical values).

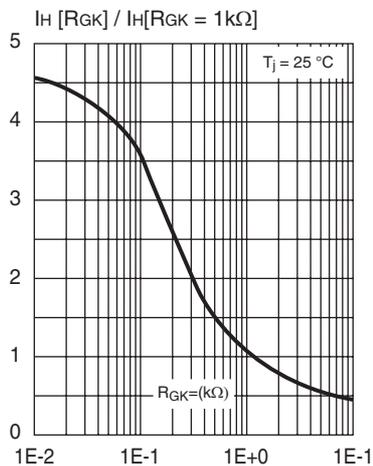
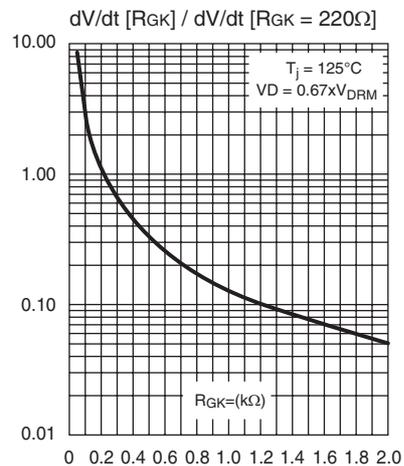


Fig. 6: Relative variation of dV/dt immunity versus gate-cathode resistance (typical values).



**SENSITIVE GATE SCR**

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

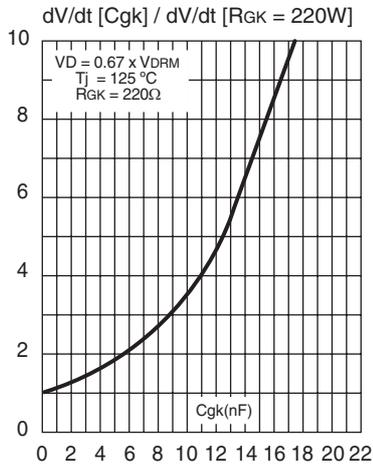


Fig. 8: Non repetitive surge peak on-state current versus number of cycles.

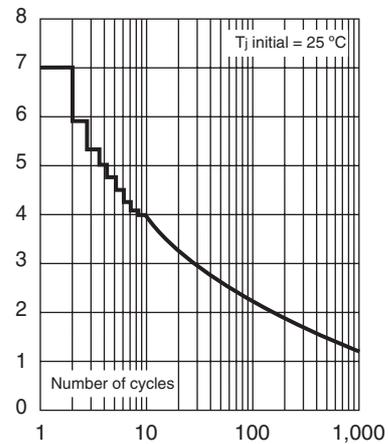


Fig. 9: Non repetitive surge peak on-state current for a sinusoidal pulse with width:  $t_p < 10 \text{ ms}$ , and corresponding value of  $I^2 t$ .

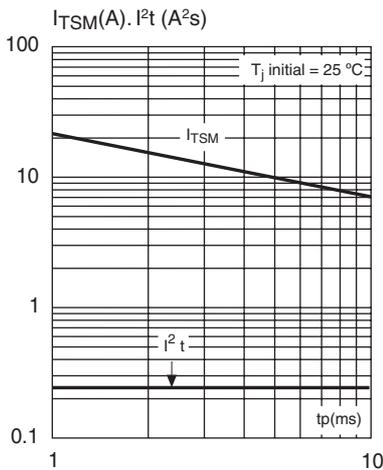
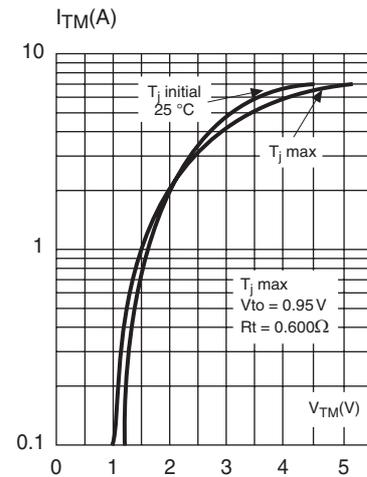


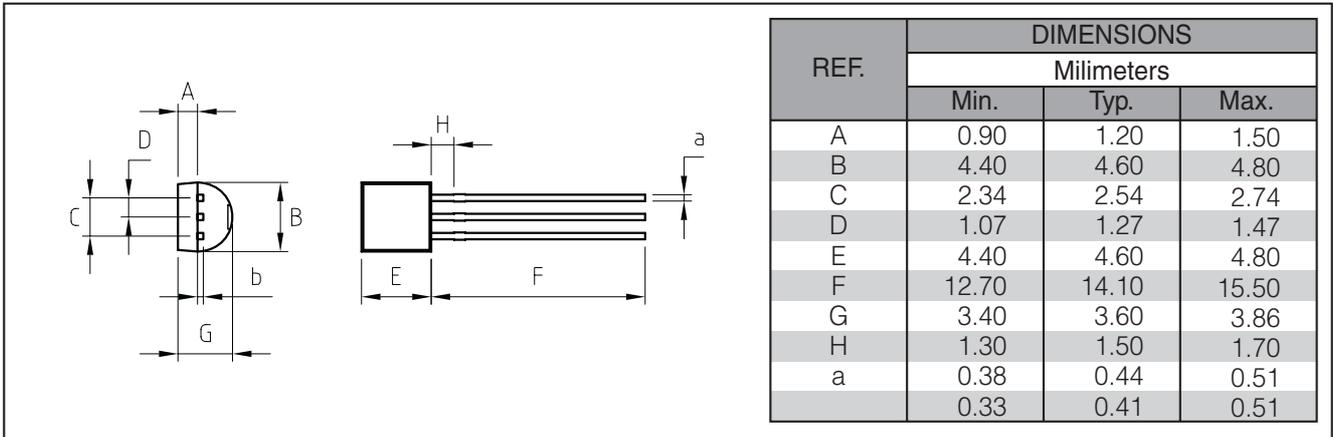
Fig. 10: On-state characteristics (maximum values)



**SENSITIVE GATE SCR**

PACKAGE MECHANICAL DATA

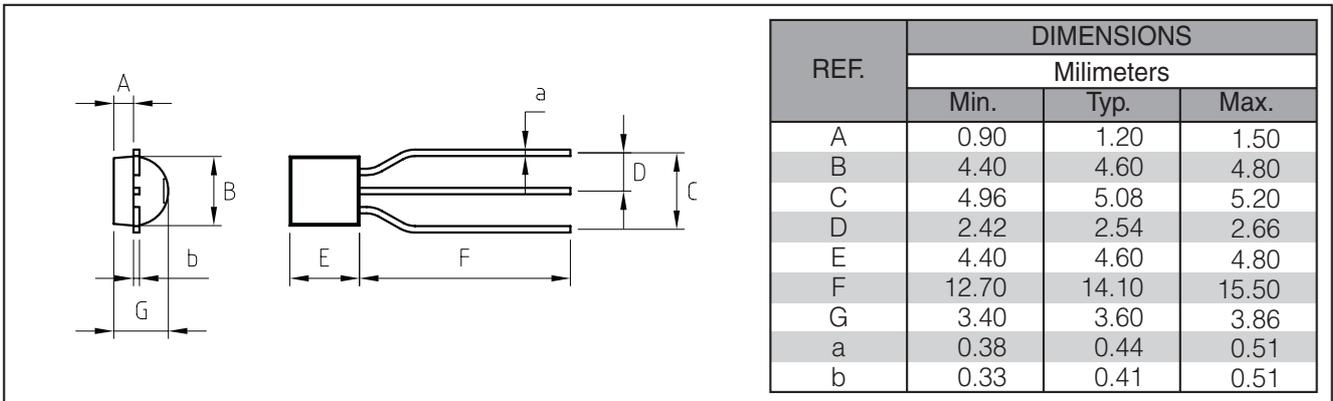
TO92



Marking: type number  
Weight: 0.2 g

PACKAGE MECHANICAL DATA

TO92 (FOR TAPE & REEL)



Marking: type number  
Weight: 0.2 g