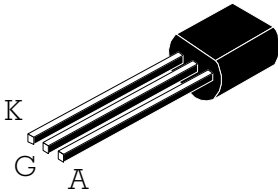
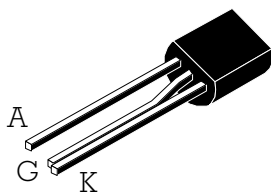


**SENSITIVE GATE SCR**

| TO92<br>(Plastic)                                                                 | RD26<br>(Plastic)                                                                 | On-State Current<br>0.8 Amp                                                                                                                                                                                             | Gate Trigger Current<br>< 200 $\mu$ A |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
|  |  | Off-State Voltage<br>200 V ÷ 600 V                                                                                                                                                                                      |                                       |
| FS01...A                                                                          | FS01...B                                                                          | <p>This series of <b>S</b>ilicon <b>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> |                                       |

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

| SYMBOL       | PARAMETER                       | CONDITIONS                                       | Min. | Max. | Unit             |
|--------------|---------------------------------|--------------------------------------------------|------|------|------------------|
| $I_{T(RMS)}$ | On-state Current                | All Conduction Angle, $T_L = 60^\circ C$         | 0.8  |      | A                |
| $I_{T(AV)}$  | Average On-state Current        | Half Cycle, $Q = 180^\circ$ , $T_L = 60^\circ C$ | 0.5  |      | A                |
| $I_{TSM}$    | Non-repetitive On-State Current | Half Cycle, 60 Hz, $T_j = 25^\circ C$            | 8    |      | A                |
| $I_{TSM}$    | Non-repetitive On-State Current | Half Cycle, 50 Hz, $T_j = 25^\circ C$            | 7    |      | A                |
| $I^2t$       | Fusing Current                  | $t = 10ms$ , Half Cycle                          | 0.24 |      | A <sup>2</sup> s |
| $V_{GRM}$    | Peak Reverse Gate Voltage       | $I_{GR} = 10 \mu A$                              | 8    |      | V                |
| $I_{GM}$     | Peak Gate Current               | 20 $\mu s$ max.                                  |      | 1    | A                |
| $P_{GM}$     | Peak Gate Dissipation           | 20 $\mu s$ max.                                  |      | 2    | W                |
| $P_{G(AV)}$  | Gate Dissipation                | 20ms max.                                        |      | 0.1  | W                |
| $T_j$        | Operating Temperature           |                                                  | -40  | +125 | $^\circ C$       |
| $T_{stg}$    | Storage Temperature             |                                                  | -40  | +150 | $^\circ C$       |
| $T_{sld}$    | Soldering Temperature           | 1.6 mm from case, 10s max.                       |      | 260  | $^\circ C$       |

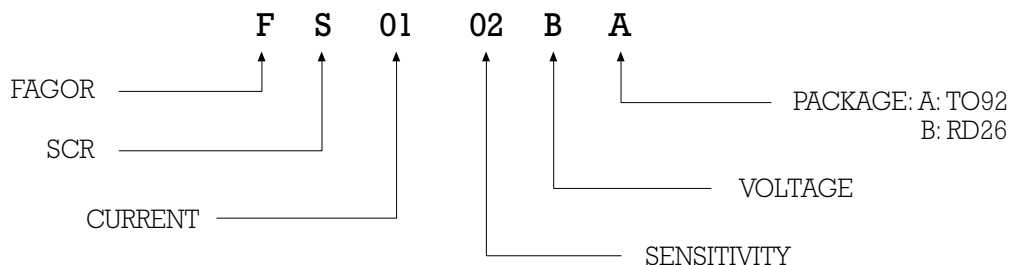
| SYMBOL                 | PARAMETER                         | CONDITIONS                                      | VOLTAGE |     |     | Unit |
|------------------------|-----------------------------------|-------------------------------------------------|---------|-----|-----|------|
|                        |                                   |                                                 | B       | D   | M   |      |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive Peak Off State Voltage | $T_j = -40$ to $+125^\circ C$ , $R_{GK} = 1 KW$ | 200     | 400 | 600 | V    |

## SENSITIVE GATE SCR

### Electrical Characteristics

| SYMBOL              | PARAMETER                                | CONDITIONS                                                                                                                                                                    |            | SENSITIVITY |     | Unit         |
|---------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-----|--------------|
|                     |                                          |                                                                                                                                                                               |            | 01          | 02  |              |
| $I_{GT}$            | Gate Trigger Current                     | $V_D = 12 V_{DC}$ , $R_L = 140W$ , $T_j = 25^\circ C$                                                                                                                         | MIN<br>MAX | 1<br>20     | 200 | $\mu A$      |
| $I_{DRM} / I_{RRM}$ | Off-State Leakage Current                | $V_D = V_{DRM}$ , $R_{GK} = 1KW$ , $T_j = 125^\circ C$<br>$V_R = V_{RRM}$ , $T_j = 25^\circ C$                                                                                | MAX<br>MAX | 100<br>1    |     | $\mu A$      |
| $V_{TM}$            | On-state Voltage                         | at $I_T = 1.6$ Amp, $t_p = 380 \mu s$ , $T_j = 25^\circ C$                                                                                                                    | MAX        | 1.93        |     | V            |
| $V_{T(TO)}$         | On-state Threshold Voltage               | $T_j = 125^\circ C$                                                                                                                                                           | MAX        | 0.95        |     | V            |
| $r_T$               | On-state slope Resistance                | $T_j = 125^\circ C$                                                                                                                                                           | MAX        | 600         |     | mW           |
| $V_{GT}$            | Gate Trigger Voltage                     | $V_D = 12 V_{DC}$ , $R_L = 140W$ , $T_j = 25^\circ C$                                                                                                                         | MAX        | 0.8         |     | V            |
| $I_H$               | Holding Current                          | $I_T = 50$ mA, $R_{GK} = 1KW$ , $T_j = 25^\circ C$                                                                                                                            | MAX        | 5           |     | mA           |
| $I_L$               | Latching Current                         | $I_G = 1$ 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        | 75          |     | V/ $\mu s$   |
| $di / dt$           | Critical Rate of Current Rise            | $I_G = 10$ mA, $di_G/dt = 0.1$ A/ $\mu s$ , $T_j = 125^\circ C$                                                                                                               | MIN        | 30          |     | A/ $\mu s$   |
| $t_{gd}$            | Gate Controlled Delay Time               | $I_G = 10$ mA, $di_G/dt = 0.1$ A/ $\mu s$ , $T_j = 25^\circ C$<br>$I_{TM} = 3 \times I_{T(AV)}$ $V_D = V_{DRM}$                                                               | TYP        | 500         |     | ns           |
| $t_q$               | Commutated Turn-Off Time                 | $I_{TM} = 3 \times I_{T(AV)}$ $V_R = 35$ V<br>$di/dt = 10$ A/ $\mu s$ $t_p = 100 \mu s$<br>$dv/dt = 10$ V/ $\mu s$ $T_j = 125^\circ C$<br>$V_D = 67\% V_{DRM}$ $R_{GK} = 1KW$ | MAX        | 200         |     | $\mu s$      |
| $R_{th(j-l)}$       | Thermal Resistance Junction-Leads for DC |                                                                                                                                                                               |            | 80          |     | $^\circ C/W$ |
| $R_{th(j-a)}$       | Thermal Resistance Junction-Ambient      |                                                                                                                                                                               |            | 150         |     | $^\circ C/W$ |

### PART NUMBER INFORMATION



## SENSITIVE GATE SCR

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

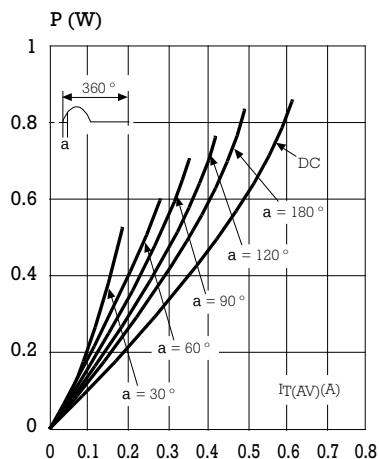


Fig. 3: Average on-state current versus lead temperature

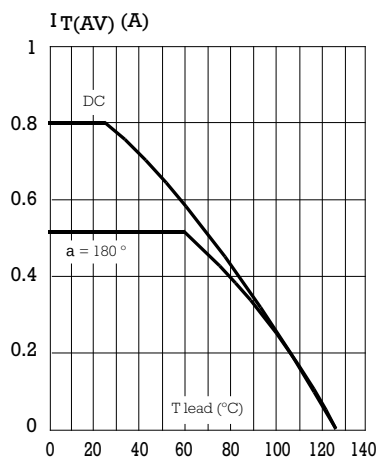


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

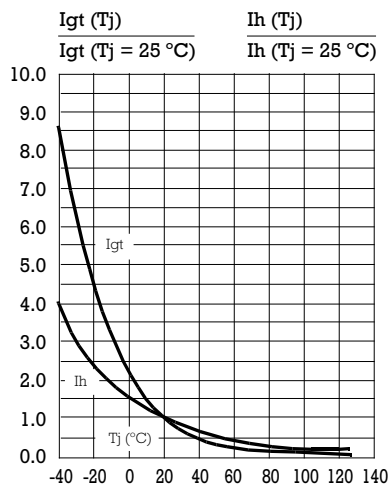


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperature ( $T_{amb}$  and  $T_{lead}$ ).

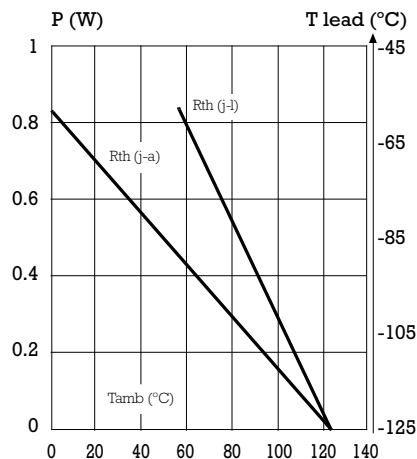


Fig. 4: Relative variation of thermal impedance junction to ambient versus pulse duration.

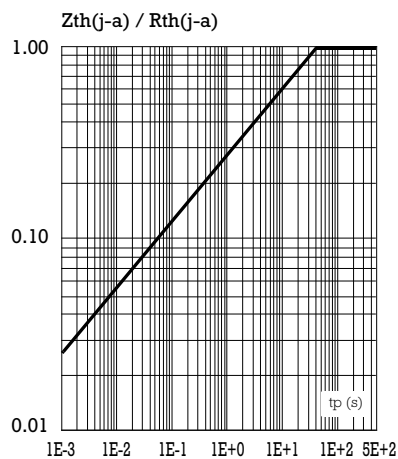
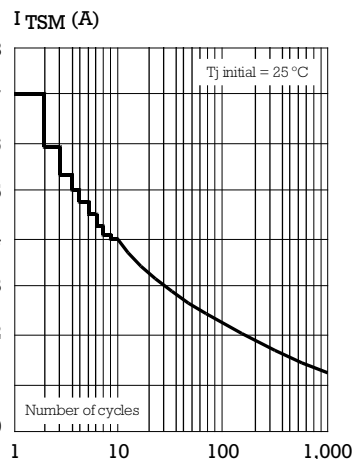


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.



SENSITIVE GATE SCR

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

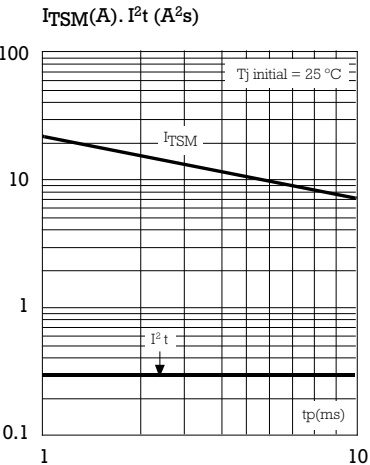


Fig. 8: On-state characteristics (maximum values).

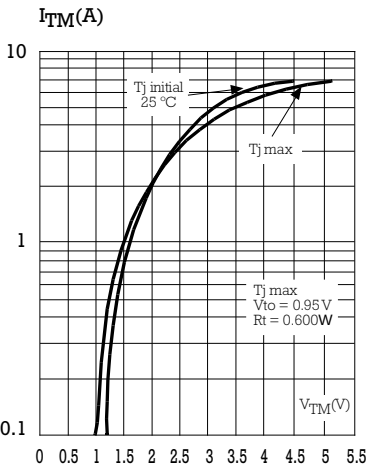
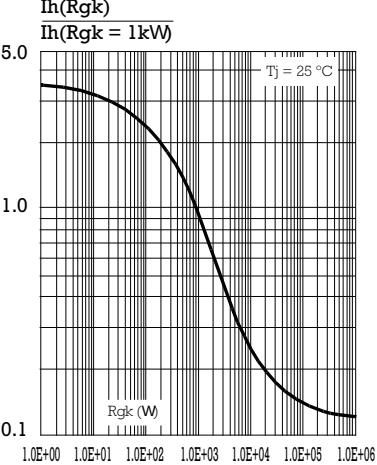
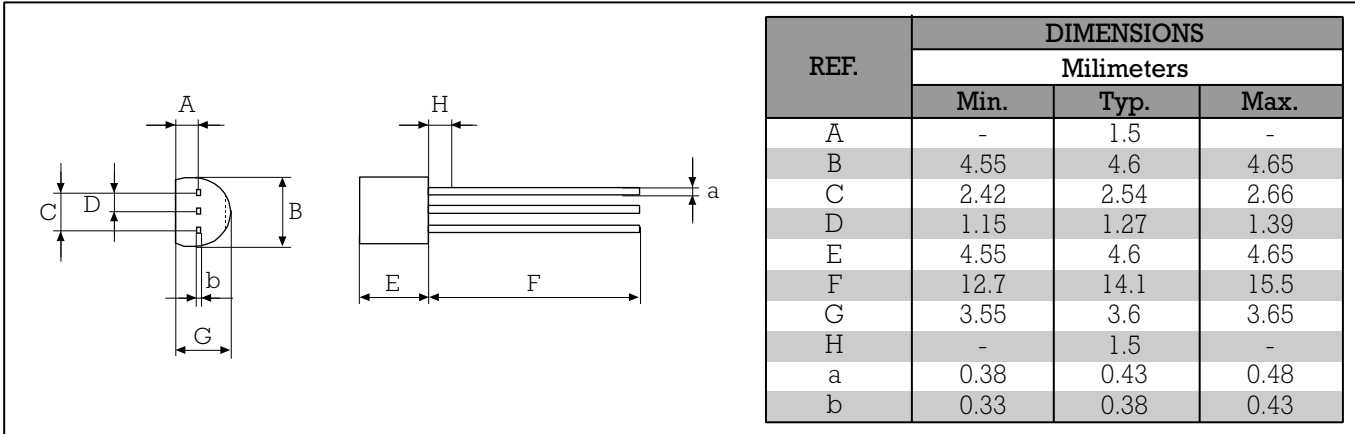


Fig. 9: Relative variation of holding current versus gate-cathode resistance (typical values).

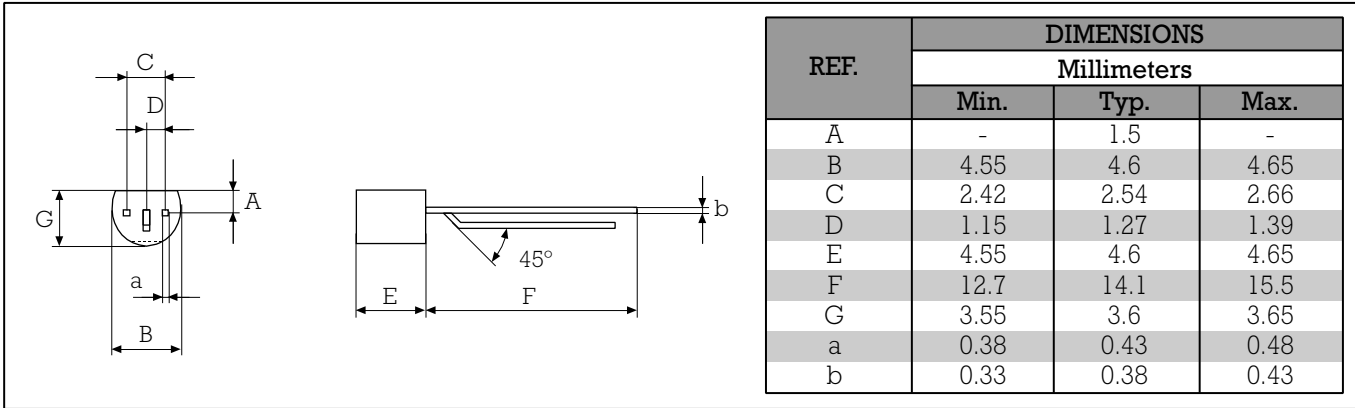


PACKAGE MECHANICAL DATA TO92 (Plastic)



Marking: type number  
Weight: 0.2 g

PACKAGE MECHANICAL DATA RD26 (Plastic)



Marking: type number  
Weight: 0.2 g