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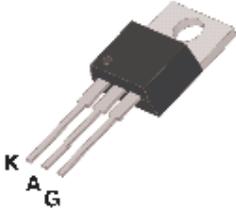
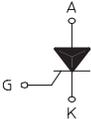
Product: Standard Gate SCRs

Standard SCRs uses a high performance glass passivated technology.

This general purpose Family of Silicon Controlled Rectifiers is designed for power supplies.

| Product | Family | $I_T(\text{RMS})$ | $V_{\text{RRM}}/V_{\text{DRM}}$ (V) | I_{TSM} (A) | $I_{\text{GT min}}$ (μA) | $I_{\text{GT min}}$ (mA) | $I_{\text{GT max}}$ (μA) | $I_{\text{GT max}}$ (mA) | $dv/dt(\text{min})$ V/ μs | PACKAGE |
|--------------------------|------------|-------------------|--|-------------------------|--|-----------------------------|--|-----------------------------|---|---------|
| FS0809MH | FS08H(StG) | 8 | 600 | 95 | | 4 | | 15 | 150 | TO220AB |

STANDARD SCR

| | | | | | | | | | |
|--|--|-------------------------|-----------------------------|-------|---------------|--------------------------|--|---------------|--|
| <p style="text-align: center;">TO-220-AB</p> <div style="text-align: center;">  <p>K A G</p> </div> <div style="text-align: center; margin-top: 20px;">  </div> | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 50%;">On-State Current</td> <td style="text-align: center; width: 50%;">Gate Trigger Current</td> </tr> <tr> <td style="text-align: center;">8 Amp</td> <td style="text-align: center;">2 mA to 15 mA</td> </tr> <tr> <td colspan="2" style="text-align: center; padding-top: 10px;">Off-State Voltage</td> </tr> <tr> <td colspan="2" style="text-align: center;">200 V ÷ 800 V</td> </tr> </table> <p style="margin-top: 20px;">These series of Silicon Controlled Rectifier use a high performance PNP technology.</p> <p>These parts are intended for general purpose applications where high gate sensitivity is required.</p> | On-State Current | Gate Trigger Current | 8 Amp | 2 mA to 15 mA | Off-State Voltage | | 200 V ÷ 800 V | |
| On-State Current | Gate Trigger Current | | | | | | | | |
| 8 Amp | 2 mA to 15 mA | | | | | | | | |
| Off-State Voltage | | | | | | | | | |
| 200 V ÷ 800 V | | | | | | | | | |

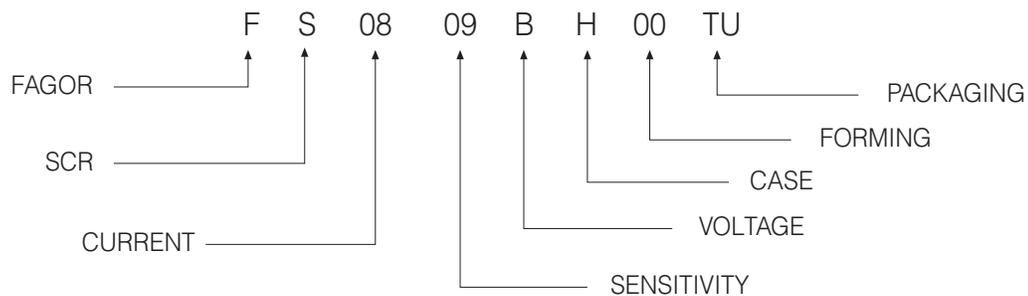
Absolute Maximum Ratings, according to IEC publication No. 134

| SYMBOL | PARAMETER | CONDITIONS | Value | Unit |
|--------------|---------------------------------|---|---------------|------------------|
| $I_{T(RMS)}$ | On-state Current | 180° Conduction Angle, $T_c = 110\text{ °C}$ | 8 | A |
| $I_{T(AV)}$ | Average On-state Current | Half Cycle, $\Theta = 180\text{ °}$, $T_c = 110\text{ °C}$ | 5 | A |
| I_{TSM} | Non-repetitive On-State Current | Half Cycle, 60 Hz | 100 | A |
| I_{TSM} | Non-repetitive On-State Current | Half Cycle, 50 Hz | 95 | A |
| I^2t | Fusing Current | $t_b = 10\text{ms}$, Half Cycle | 45 | A ² s |
| I_{GM} | Peak Gate Current | 20 μs max. | 4 | A |
| P_{GM} | Peak Gate Dissipation | 20 μs max. | 10 | W |
| $P_{G(AV)}$ | Gate Dissipation | 20ms max. | 1 | W |
| T_j | Operating Temperature | | (-40 to +125) | °C |
| T_{stg} | Storage Temperature | | (-40 to +150) | °C |
| T_{sld} | Soldering Temperature | 10s max. | 260 | °C |
| V_{RGM} | Reverse Gate Voltage | | 5 | V |

| 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 |

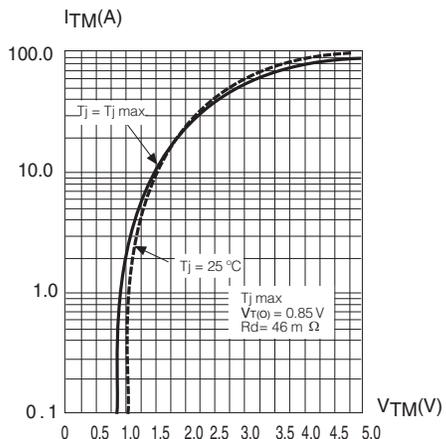
STANDARD SCR
Electrical Characteristics

| SYMBOL | PARAMETER | CONDITIONS | SENSITIVITY | | Uni |
|---------------------|---|--|-------------|---------|---------------|
| | | | | | |
| | | | | 09 | |
| I_{GT} | Gate Trigger Current | $V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$ | MIN MAX | 2 15 | m A |
| V_{GT} | Gate Trigger Voltage | $V_D = 12 V_{DC}, R_L = 140\Omega, T_j = 25^\circ C$ | MAX | 1.3 | 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 | 0.2 | V |
| I_H | Holding Current | $I_T = 500 \text{ mA}$ | MAX | 30 | mA |
| I_L | Latching Current | $I_G = 1.2 I_{GT}$ | MAX | 70 | mA |
| dV / dt | Critical Rate of Voltage Rise | $V_D = 0.67 \times V_{DRM}, \text{ Gate open}, T_j = 125^\circ C$ | MIN | 150 | V/ μ s |
| dI / dt | Critical Rate of Current Rise | $I_G = 2 \times I_{GT}, tr \leq 100 \text{ ns}, f = 60 \text{ Hz}, T_j = 125^\circ C$ | MIN | 50 | A/ μ s |
| V_{TM} | On-state Voltage | at $I_T = 16 \text{ Amp}, tp = 380 \mu\text{s}, T_j = 25^\circ C$ | MAX | 1.6 | V |
| $V_{t(o)}$ | Threshold Voltage | $T_j = 125^\circ C$ | MAX | 0.85 | V |
| r_d | Dynamic resistance | $T_j = 125^\circ C$ | MAX | 46 | $m\Omega$ |
| 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 | 2 5 | mA μ A |
| $R_{th(j-c)}$ | Thermal Resistance Junction-Case for DC | for AC 360° conduction angle | | 1.6 | $^\circ C/W$ |
| $R_{th(j-a)}$ | Thermal Resistance Junction-Amb for DC | $S = 1 \text{ cm}^2$ | | 60 | $^\circ C/W$ |

PART NUMBER INFORMATION


STANDARD SCR

Fig. 7: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA

TO-220AB

| REF. | DIMENSIONS | |
|------|------------|-------|
| | Milimeters | |
| | Min. | Max. |
| A | 3.56 | 4.83 |
| A1 | 0.50 | 1.40 |
| A2 | 2.00 | 2.92 |
| b | 0.38 | 1.02 |
| b2 | 1.14 | 1.78 |
| c | 0.35 | 0.61 |
| D | 14.22 | 16.51 |
| D1 | 8.38 | 9.02 |
| E | 9.65 | 10.67 |
| e | 2.49 | 2.59 |
| e1 | 5.03 | 5.13 |
| H1 | 5.84 | 6.86 |
| L | 12.70 | 14.74 |
| L1 | | 6.35 |
| P | 3.53 | 4.09 |
| Q | 2.54 | 3.43 |

Mounting Torque

1 N.m

(*) Limiting values and life support applications, see Web page.