

## 0.8A Sensitive Gate SCRs

### Product Summary

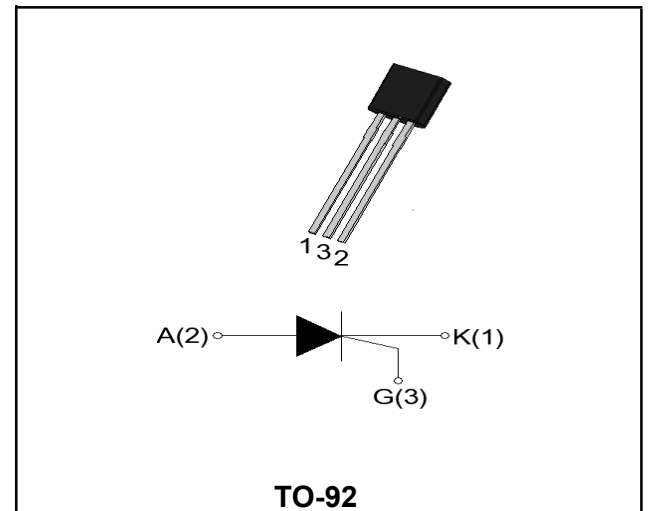
| Symbol            | Value  | Unit    |
|-------------------|--------|---------|
| $I_{T(RMS)}$      | 0.8    | A       |
| $V_{DRM} V_{RRM}$ | 600    | V       |
| $I_{GT}$          | 10~200 | $\mu A$ |

### Features

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

### Application

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.



### Absolute maximum ratings (Ta=25°C unless otherwise noted)

| Parameter                                                             | Symbol       | Value     | Unit             |
|-----------------------------------------------------------------------|--------------|-----------|------------------|
| Repetitive peak off-state voltage                                     | $V_{DRM}$    | 600       | V                |
| Repetitive peak reverse voltage                                       | $V_{RRM}$    | 600       | V                |
| RMS on-state current                                                  | $I_{T(RMS)}$ | 0.8       | A                |
| Non repetitive surge peak on-state current (full cycle, F=50Hz)       | $I_{TSM}$    | 8         | A                |
| $I^2t$ value for fusing (tp=10ms)                                     | $I^2t$       | 0.32      | A <sup>2</sup> s |
| Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ ) | $di_T/dt$    | 50        | A/ $\mu s$       |
| Peak gate current                                                     | $I_{GM}$     | 0.2       | A                |
| Average gate power dissipation                                        | $P_G (AV)$   | 0.1       | W                |
| Junction Temperature                                                  | $T_J$        | -40~+110  | °C               |
| Storage Temperature                                                   | $T_{STG}$    | -40 ~+150 | °C               |

**Electrical characteristics (TA=25°C, unless otherwise noted)**

| Parameter                                    | Symbol    | Test Condition                                                | Value |     | Unit    |
|----------------------------------------------|-----------|---------------------------------------------------------------|-------|-----|---------|
|                                              |           |                                                               | Min   | Max |         |
| Gate trigger current                         | $I_{GT}$  | $V_D=12V$<br>$I_T=10mA$<br>$T_J=25^\circ C$                   | 10    | 200 | $\mu A$ |
| Gate trigger voltage                         | $V_{GT}$  |                                                               | -     | 0.8 | V       |
| Gate non-trigger voltage                     | $V_{GD}$  | $V_D = 1/2 V_{DRM}$ $T_J = 110^\circ C$                       | 0.2   | -   | V       |
| latching current                             | $I_L$     | $V_D = 12V$ $I_G=0.5mA$<br>$R_{GK}=1k\Omega$ $T_J=25^\circ C$ | -     | 3   | mA      |
| Holding current                              | $I_H$     |                                                               | -     | 4   | mA      |
| Critical-rate of rise of commutation voltage | $dV_D/dt$ | $V_D=2/3 V_{DRM}$ Gate Open $T_J=110^\circ C$                 | 10    | -   | V/us    |

**STATIC CHARACTERISTICS**

|                                   |           |                                |                   |      |           |
|-----------------------------------|-----------|--------------------------------|-------------------|------|-----------|
| Forward "on" voltage              | $V_{TM}$  | $I_{TM} = 1.2A$ $t_p=380\mu s$ | -                 | 1.55 | V         |
| Repetitive Peak Off-State Current | $I_{DRM}$ | $V_D=V_{DRM}$ $V_R=V_{RRM}$    | $T_J=25^\circ C$  | -    | 5 $\mu A$ |
| Repetitive Peak Reverse Current   | $I_{RRM}$ |                                | $T_J=110^\circ C$ | -    | 0.1 mA    |

**THERMAL RESISTANCES**

|                    |               |                      |      |     |              |
|--------------------|---------------|----------------------|------|-----|--------------|
| Thermal resistance | $R_{th(j-c)}$ | Junction to case(AC) | TYP. | 60  | $^\circ C/W$ |
|                    | $R_{th(j-a)}$ | Junction to ambient  | TYP. | 150 | $^\circ C/W$ |

**Ordering Information**

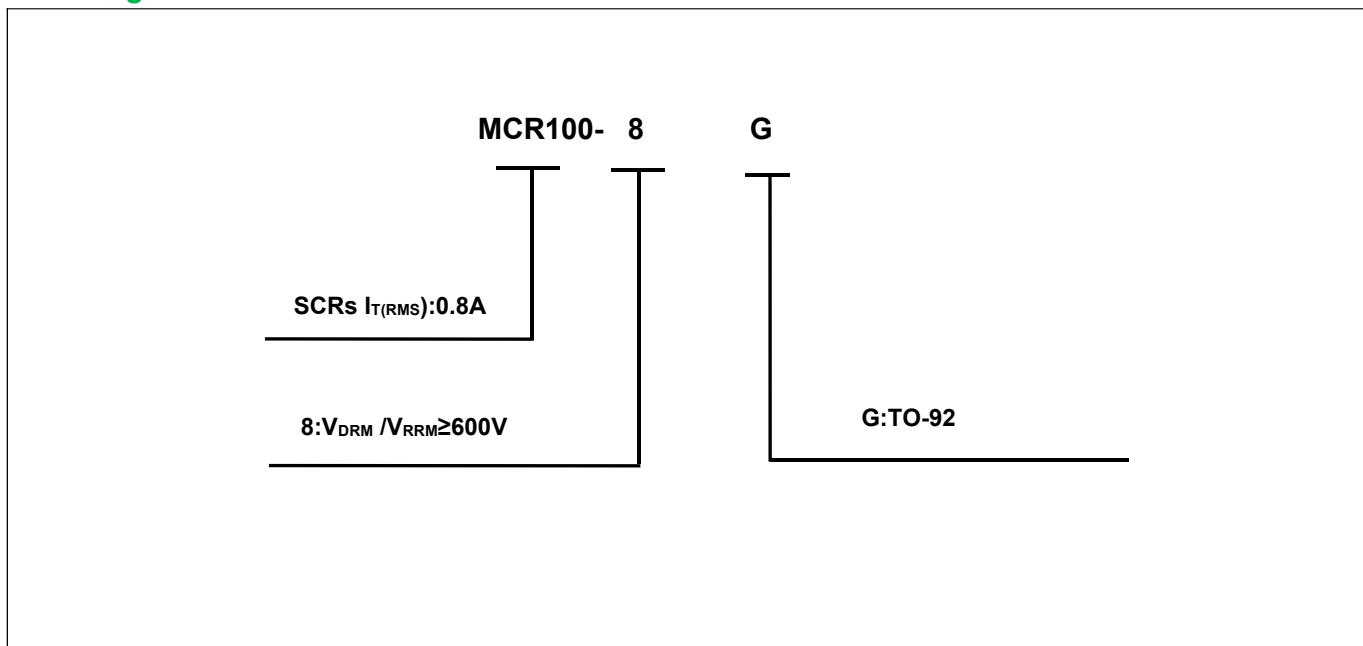


FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

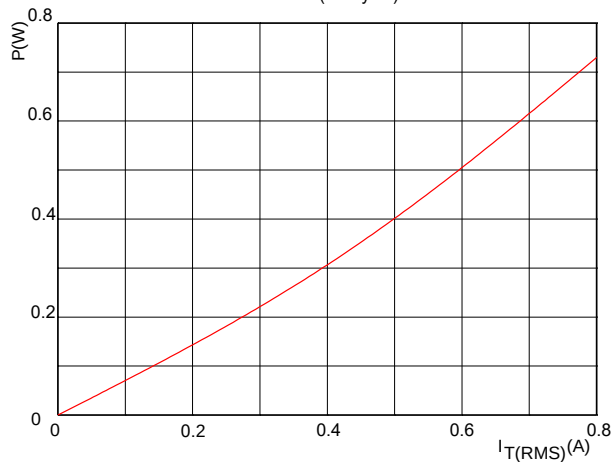


FIG.2: RMS on-state current versus case temperature (full cycle)

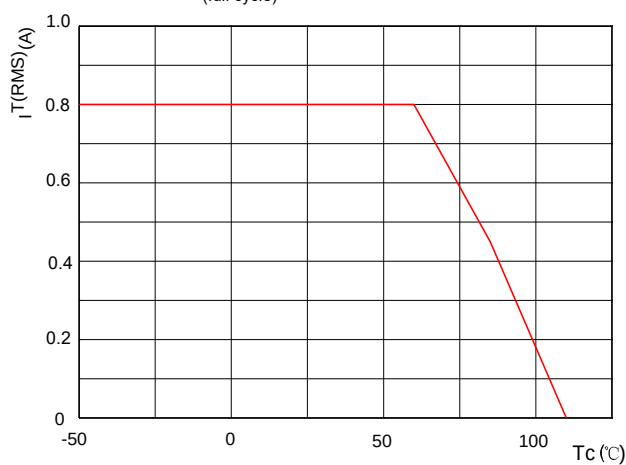


FIG.3: Surge peak on-state current versus number of cycles

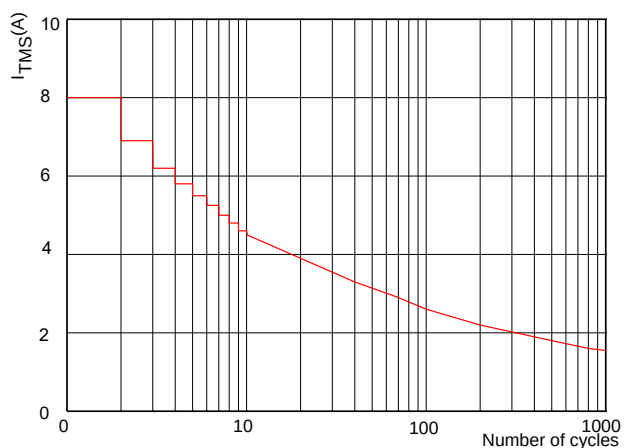


FIG.4: On-state characteristics (maximum values)

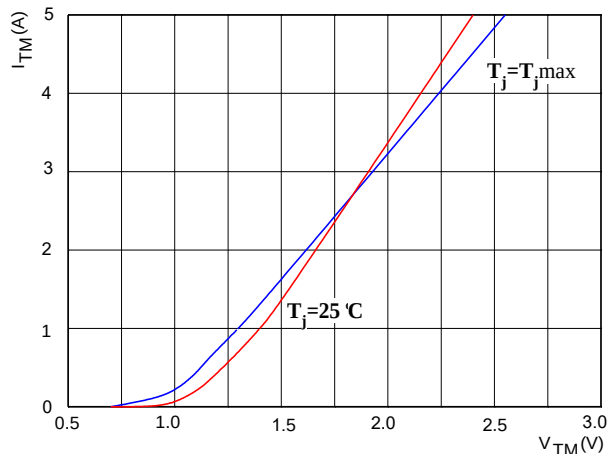


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$

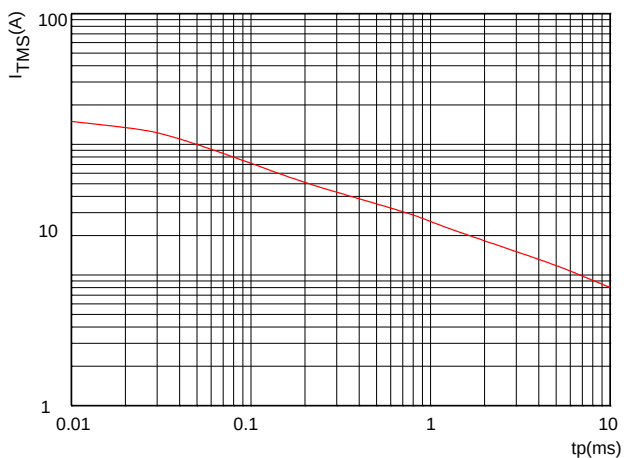
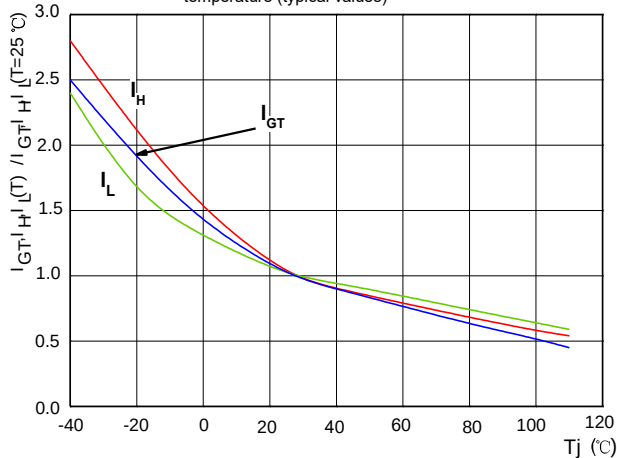


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



**Ordering information**

| Package | Packing Description | Base Quantity |
|---------|---------------------|---------------|
| TO-92   | Bulk                | 1000pcs/Bag   |
|         | Tape                | 2000pcs/Box   |

**Package Dimensions**

**TO-92**

| Dim | Millimeter |       | Inches |       |
|-----|------------|-------|--------|-------|
|     | Min.       | Max.  | Min.   | Max.  |
| A   | 3.30       | 3.70  | 0.130  | 0.146 |
| A1  | 2.30       | 2.70  | 0.091  | 0.106 |
| b   | 0.40       | 0.50  | 0.016  | 0.020 |
| b1  | 0.50       | 0.70  | 0.020  | 0.028 |
| c   | 0.35       | 0.45  | 0.014  | 0.018 |
| D   | 4.45       | 4.70  | 0.175  | 0.185 |
| E   | 4.40       | 4.65  | 0.173  | 0.183 |
| e   | 1.17       | 1.37  | 0.046  | 0.054 |
| e1  | 2.34       | 2.64  | 0.092  | 0.104 |
| L   | 13.50      | 14.50 | 0.531  | 0.571 |
| L1  | 1.80       | 2.20  | 0.071  | 0.087 |

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