

0.8A Sensitive Gate SCRs

Product Summary

| Symbol | Value | Unit |
|-------------------|---------|------|
| $I_{T(AV)}$ | 0.8 | A |
| $V_{DRM} V_{RRM}$ | 600/800 | V |
| I_{GT} | 10~200 | uA |

Features

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

Application

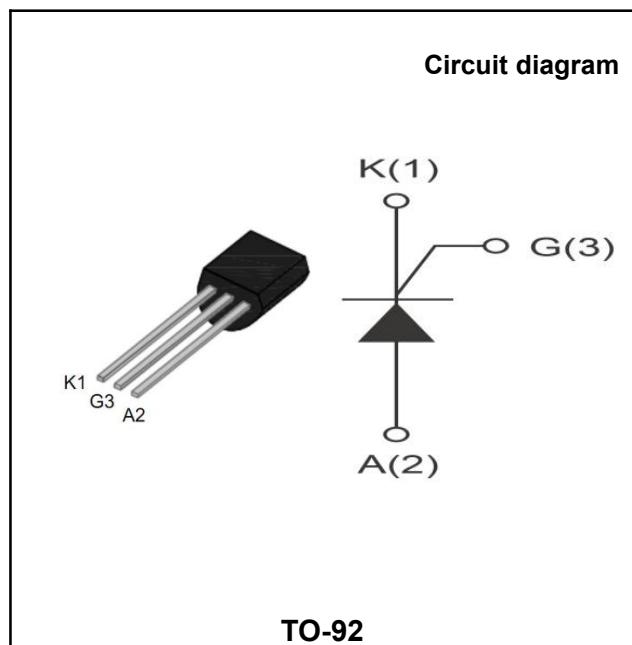
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Order Information

| Part Number | Package | Marking | Packing | Packing Quantity |
|-------------|---------|---------------|---------|------------------|
| MCR100-8G | TO-92 | MCR100-8 XXXX | Box | 1000 PCS/Box |

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

| Parameter | Symbol | Value | Unit |
|--|------------|-----------|--------|
| Repetitive peak off-state voltage | V_{DRM} | 600/800 | V |
| Repetitive peak reverse voltage | V_{RRM} | 600/800 | 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 ($t_p=10ms$) | I^2t | 0.32 | A^2s |
| Critical rate of rise of on-state current ($I_G = 2 \times _{GT} $) | dI_T/dt | 50 | A/us |
| 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 |



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

| Parameter | Symbol | Test Condition | Value | | Unit |
|--|---------------------|--|-------|-----|------|
| | | | Min | Max | |
| Gate trigger current | I _{GT} | V _D =12V I _T =10mA T _j =25°C | 10 | 200 | μA |
| Gate trigger voltage | V _{GT} | | - | 0.8 | V |
| Gate non-trigger voltage | V _{GD} | V _D =1/2V _{DRM} T _J =110°C | 0.2 | - | V |
| latching current | I _L | V _D =12V I _G =0.5mA R _{GK} =1kΩ T _j =25°C | - | 3 | mA |
| Holding current | I _H | | - | 4 | mA |
| Critical-rate of rise of commutation voltage | dV _D /dt | V _D =2/3V _{DRM} Gate Open T _j =110°C | 10 | - | V/us |

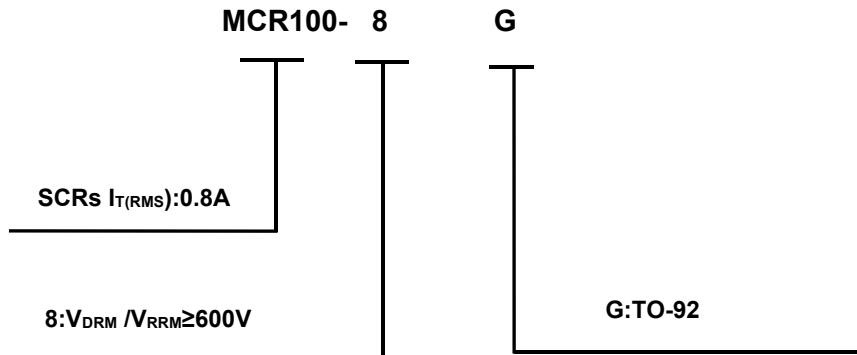
STATIC CHARACTERISTICS

| | | | | | | |
|-----------------------------------|------------------|---|-----------------------|------|-----|----|
| Forward "on" voltage | V _{TM} | I _{TM} =1.2A tp=380us | - | 1.55 | V | |
| Repetitive Peak Off-State Current | I _{DRM} | V _D =V _{DRM} V _R =V _{RRM} | T _j =25°C | - | 5 | μA |
| Repetitive Peak Reverse Current | I _{RRM} | | T _j =110°C | - | 0.1 | mA |

THERMAL RESISTANCES

| | | | | | |
|--------------------|----------------------|----------------------|------|-----|------|
| Thermal resistance | R _{th(j-c)} | Junction to case(AC) | TYP. | 60 | °C/W |
| | R _{th(j-a)} | Junction to ambient | TYP. | 150 | °C/W |

Ordering Information



Typical Characteristics

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

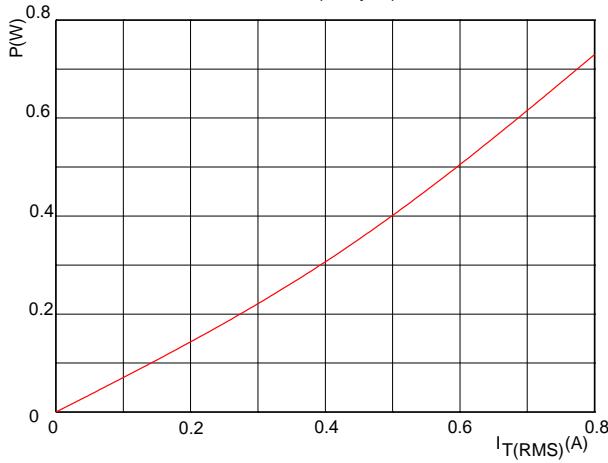


FIG.2: RMS on-state current versus case temperature (full cycle)

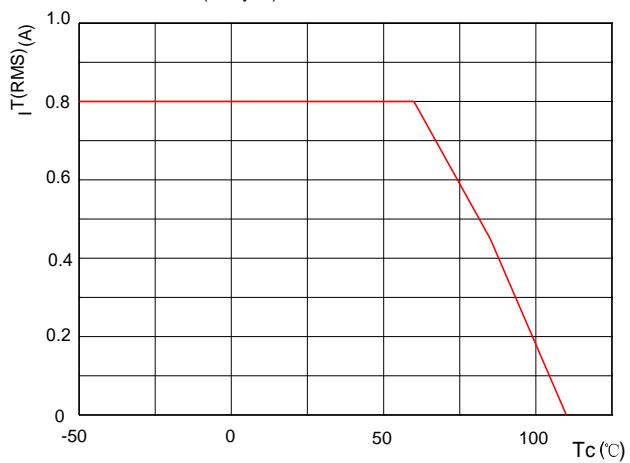


FIG.3: Surge peak on-state current versus number of cycles

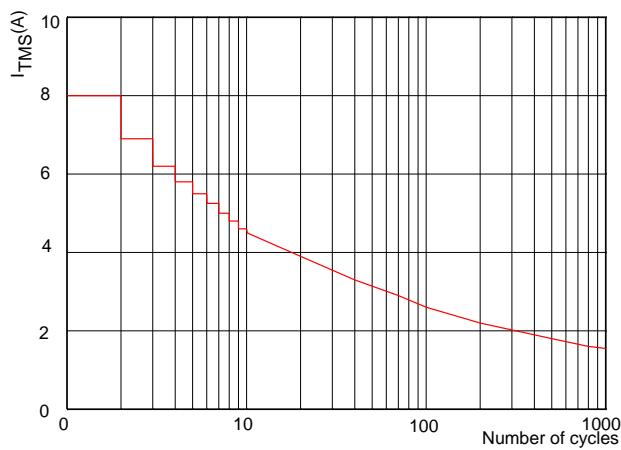


FIG.4: On-state characteristics (maximum values)

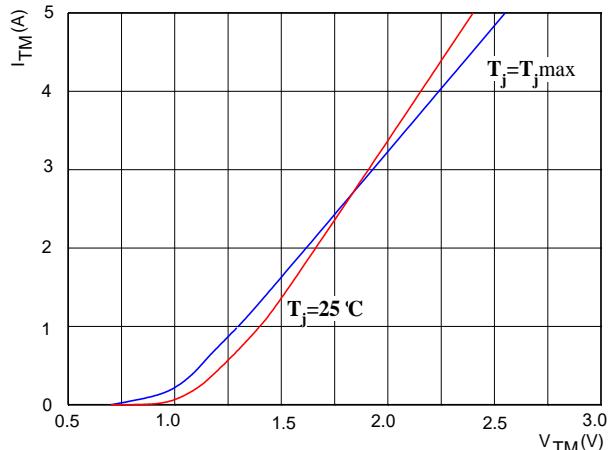


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

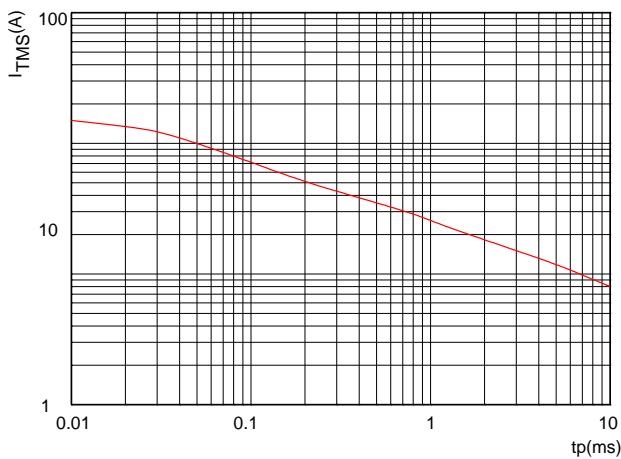
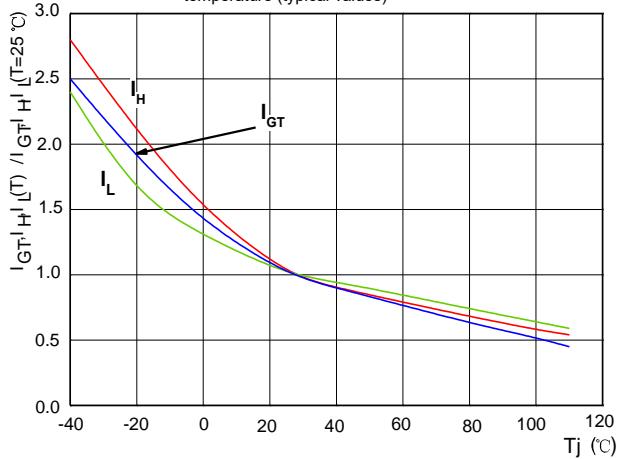
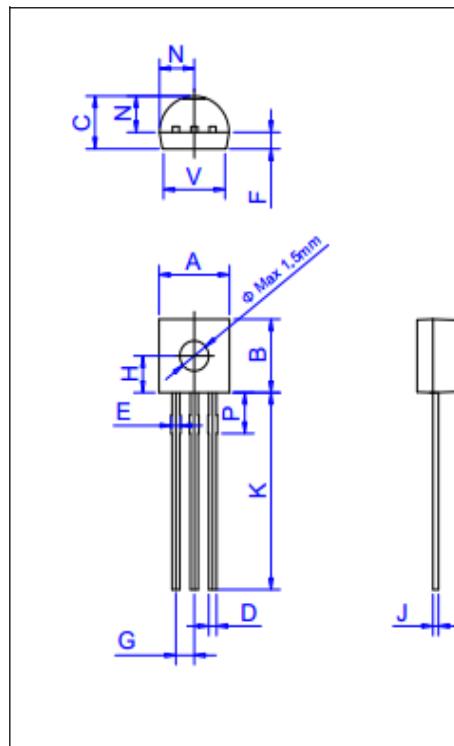


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Package Information

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The diagram illustrates the physical dimensions of a TO-92 package. It includes a top view showing lead spacing (A), lead thickness (B), lead height (C), lead width (D), lead pitch (E), lead height (F), lead width (G), and lead thickness (H). A side view shows the total height (V) and lead thickness (Z). A detailed view of a single lead shows its length (J) and a note indicating a maximum diameter of 1.5mm.

| Ref. | Dimensions | | | | | |
|------|-------------|------|-------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.45 | | 5.20 | 0.175 | | 0.205 |
| B | 4.32 | | 5.33 | 0.170 | | 0.210 |
| C | 3.18 | | 4.19 | 0.125 | | 0.165 |
| D | 0.407 | | 0.533 | 0.016 | | 0.021 |
| E | 0.60 | | 0.80 | 0.024 | | 0.031 |
| F | - | 1.1 | - | - | 0.043 | - |
| G | - | 1.27 | - | - | 0.050 | - |
| H | - | 2.30 | - | - | 0.091 | - |
| J | 0.36 | | 0.50 | 0.014 | | 0.020 |
| K | 12.70 | | 15.0 | 0.500 | | 0.591 |
| N | 2.04 | | 2.66 | 0.080 | | 0.105 |
| P | 1.86 | | 2.06 | 0.073 | | 0.081 |
| V | - | | 4.3 | - | | 0.169 |