

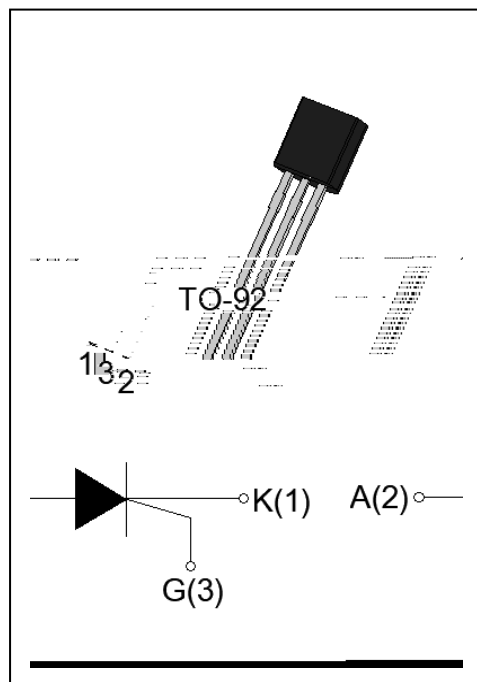


## ^ Z / W d / K E W

The MCR100-6 SCR provides high  $dV/dt$  rate with strong resistance to electromagnetic interface. It is especially recommended for use on residual current circuit breaker, straight hair, igniter etc. Complying with UL standards (File ref: E252906). Package TO-92 is RoHS compliant.

## D / E & d h Z ^

| Symbol              | Value | Unit    |
|---------------------|-------|---------|
| $I_{T(RMS)}$        | 0.8   | A       |
| $V_{DRM} / V_{RRM}$ | 800   | V       |
| $I_{GT}$            | 200   | $\mu A$ |



## ^ K b d D y / D h D Z d / E ' ^

|  |              |                      |           |
|--|--------------|----------------------|-----------|
| Storage junction temperature range   | $T_{stg}$    | -40-150              |           |
| Operating junction temperature range   | $T_j$        | -40-125 <sup>7</sup> |           |
| Repetitive peak off-state voltage ( $T_j=25$ )                                       | $V_{DRM}$    | 800                  | V         |
| Repetitive peak reverse voltage ( $T_j=25$ )   | $V_{RRM}$    | 800                  | V         |
| Average on-state current ( $T_c 060$ )   | $I_{T(AV)}$  | 0.5                  | A         |
| RMS on-state current ( $T_c 060$ )   | $I_{T(RMS)}$ | 0.8                  | A         |
| Non repetitive surge peak on-state current ( $t_p=10ms$ , $T_j=25$ )                 | $I_{TSM}$    | 8                    | A         |
| Non repetitive surge peak on-state current ( $t_p=8.3ms$ , $T_j=25$ )                |              | 9                    |           |
| $I^2t$ value for fusing ( $t_p=10ms$ , $T_j=25$ )                                    | $I^2t$       | 0.32                 | $A^2s$    |
| Critical rate of rise of on-state current ( $I_G=2 I_{GT}$ , $f=100Hz$ , $T_j=125$ ) | $di/dt$      | 50                   | $A/\mu s$ |
| Peak gate current ( $t_p=20\mu s$ , $T_j=125$ )                                      | $I_{GM}$     | 1                    | A         |



|  |             |     |    |
|--|-------------|-----|----|
| Average gate power dissipation ( $T_j=125$ )                       | $P_{G(AV)}$ | 0.1 | W  |
| Peak gate power  | $P_{GM}$    | 2   | W  |
| Peak pulse voltage<br>( $T_j=25$ ; non-repetitive,off-state;FIG.7) | $V_{pp}$    | 1   | kV |

Operating junction temperature  $T_j$  is up to 125 when a resistor 1k is connected between Gate and Cathode. Without this resistor, the  $T_j$  is up to 110 only.

> d Z / > , Z d Z / A d n unless otherwise specified •

|          |                       |     |     |     |         |
|----------|-----------------------|-----|-----|-----|---------|
|          |                       |     |     |     |         |
| $I_{GT}$ | $V_D=12V R_L=33$      | -   | 50  | 200 | $\mu A$ |
| $V_{GT}$ |                       | -   | 0.6 | 0.8 | V       |
| $V_{GD}$ | $V_D=V_{DRM} T_j=125$ | 0.2 | -   | -   | V       |
| $I_L$    | $I_G=1.2 I_{GT}$      | -   | -   | 4   | mA      |
| $I_H$    | $I_T=0.05A$           | -   | -   | 3   | mA      |



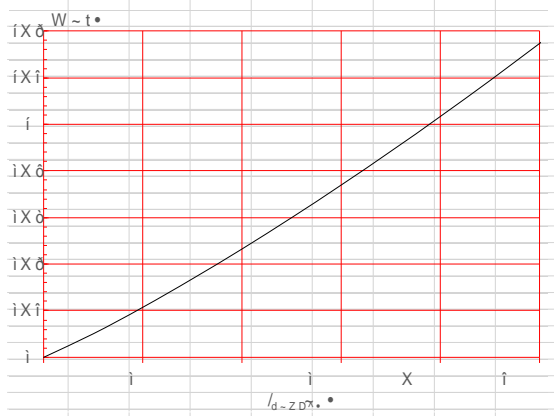
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D Z</E'

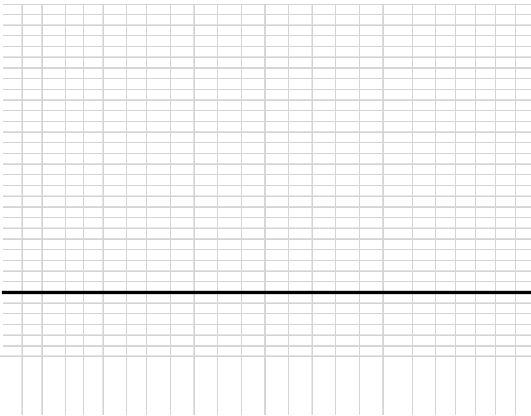
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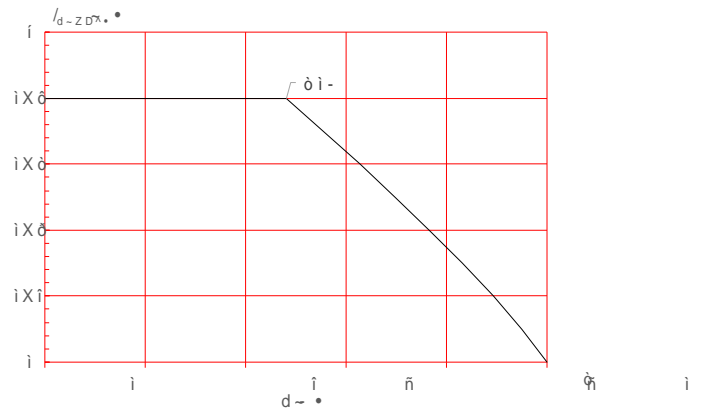
Maximum power dissipation versus RMS on-state current



Surge peak on-state current versus number of cycles



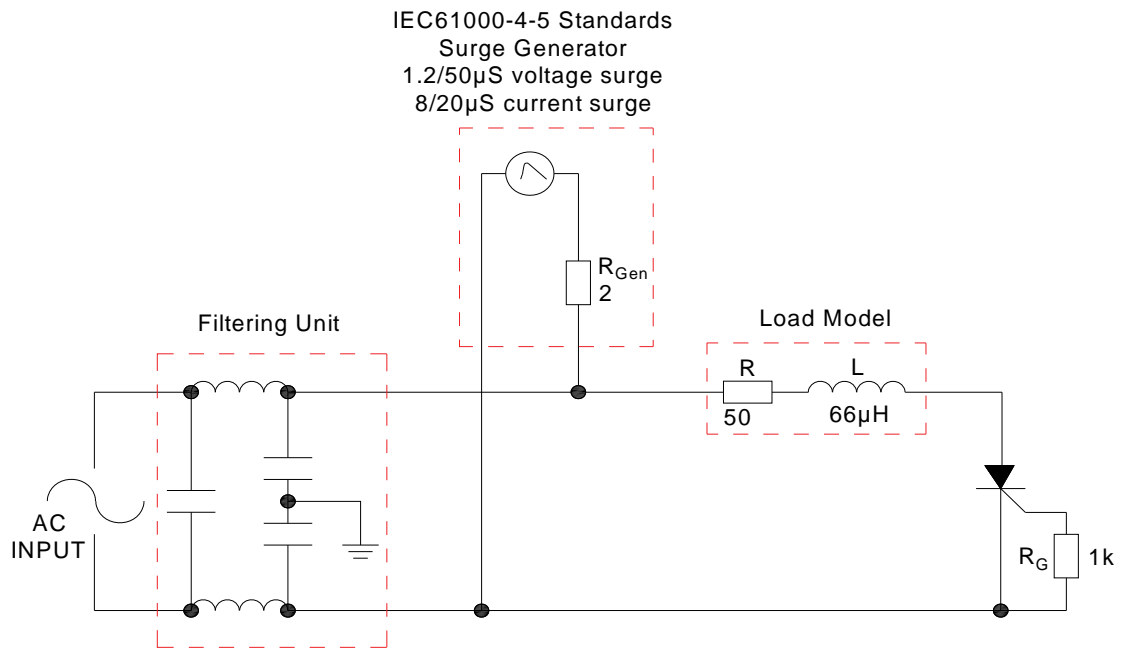
RMS on-state current versus case temperature



On-state characteristics



FIG.7 ÖTest circuit for inductive and resistive loads to IEC-61000-4-5 standards.



> &KZD/E' E ^K> Z/E'

Refer to the application note "Assembly Instructions for Thyristors in Through-hole Package" released by JieJie D] OE} o šOE}v] •



KZ Z/E' /E&KZD d/KE



| Date          | Revision | Changes                        |
|---------------|----------|--------------------------------|
| May.23, 2023  | A.1.0    | Last update                    |
| Mar.28, 2025  | A.2.0    | Renew PACKAGE MECHANICAL DATA  |
| Sept.28, 2025 | A.2.1    | Revise PACKAGE MECHANICAL DATA |



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