

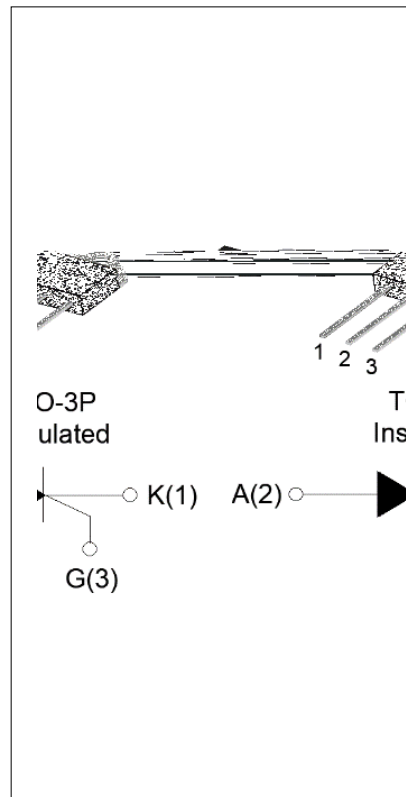


DESCRIPTION:

With high ability to withstand the shock loading of large current, JCT1255Z SCR provides high dV/dt rate with strong resistance to electromagnetic interference. It is especially recommended for use on solid state relay, motorcycle, power charger, T-tools etc. From all three terminals to external heatsink, JCT1255Z provides a rated insulation voltage of 2500 V_{RMS}, complying with UL standards (File ref: E252906). Package TO-3P is RoHS compliant.

MAIN FEATURES

| Symbol | Value | Unit |
|-------------------|-------|------|
| $I_{T(RMS)}$ | 55 | A |
| V_{DRM}/V_{RRM} | 1200 | V |
| I_{GT} | 50 | mA |



ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|--------------|---------|------------------------|
| Storage junction temperature range | T_{stg} | -40-150 | |
| Operating junction temperature range | T_j | -40-125 | |
| Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$) | V_{DRM} | 1200 | V |
| Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$) | V_{RRM} | 1200 | V |
| Average on-state current ($T_c = 60^\circ\text{C}$) | $I_{T(AV)}$ | 35 | A |
| RMS on-state current ($T_c = 60^\circ\text{C}$) | $I_{T(RMS)}$ | 55 | A |
| Non repetitive surge peak on-state current ($t_p=10\text{ms}, T_j=25^\circ\text{C}$) | I_{TSM} | 700 | A |
| Non repetitive surge peak on-state current ($t_p=8.3\text{ms}, T_j=25^\circ\text{C}$) | | 750 | |
| I^2t value for fusing ($t_p=10\text{ms}, T_j=25^\circ\text{C}$) | I^2t | 2450 | A^2s |
| Critical rate of rise of on-state current ($I_G=2 I_{GT}, f=100\text{Hz}, T_j=125^\circ\text{C}$) | di/dt | 200 | $\text{A}/\mu\text{s}$ |

| | | | |
|--|-------------|-----|----|
| Peak gate current ($t_p=20\mu s$, $T_j=125$) | I_{GM} | 10 | A |
| Average gate power dissipation ($T_j=125$) | $P_{G(AV)}$ | 1 | W |
| Peak gate power | P_{GM} | 20 | W |
| Peak pulse voltage ($T_j=25$; non-repetitive,off-state;FIG.7) | V_{pp} | 0.7 | kV |

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

| Symbol | Test Condition | Value | | | Unit |
|----------|------------------------------------|-------|------|------|------|
| | | MIN. | TYP. | MAX. | |
| I_{GT} | $V_D=12V$ $R_L=33$ | - | - | 50 | mA |
| V_{GT} | | - | - | 1 | V |
| V_{GD} | $V_D=V_{DRM}$ $T_j=125$ $R_L=3.3K$ | 0.2 | - | - | V |
| I_L | $I_G=1.2I_{GT}$ | - | - | 120 | mA |

ORDERING INFORMATION

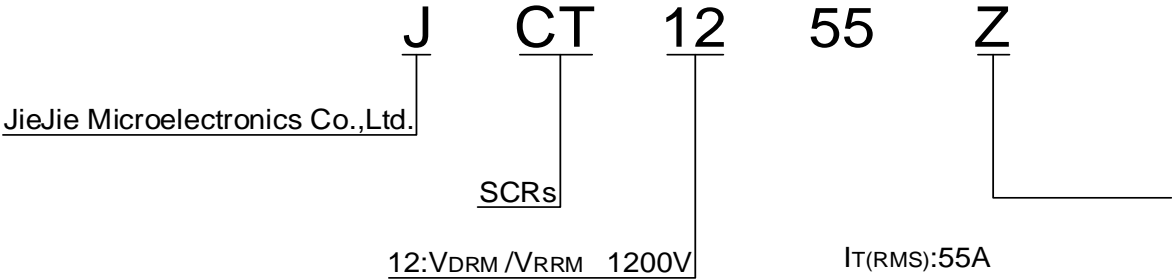


FIG.1 Maximum power dissipation versus RMS on-state current

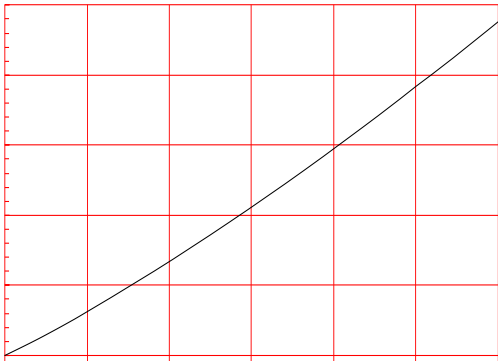


FIG.2: RMS on-state current versus case temperature

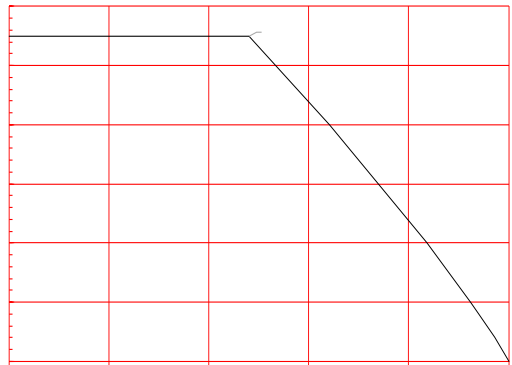


FIG.3: Surge peak on-state current versus number of cycles

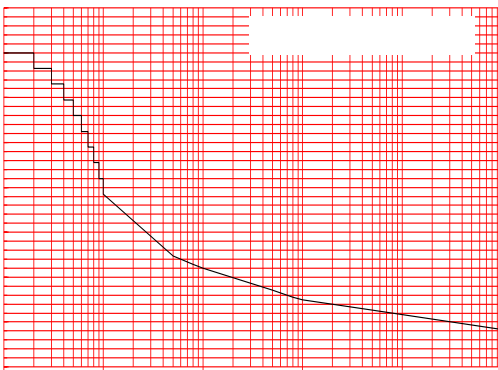


FIG.4: On-state characteristics

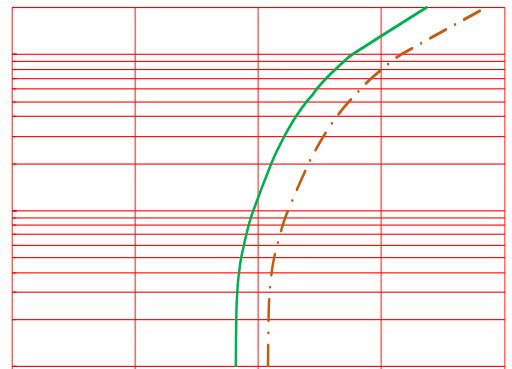
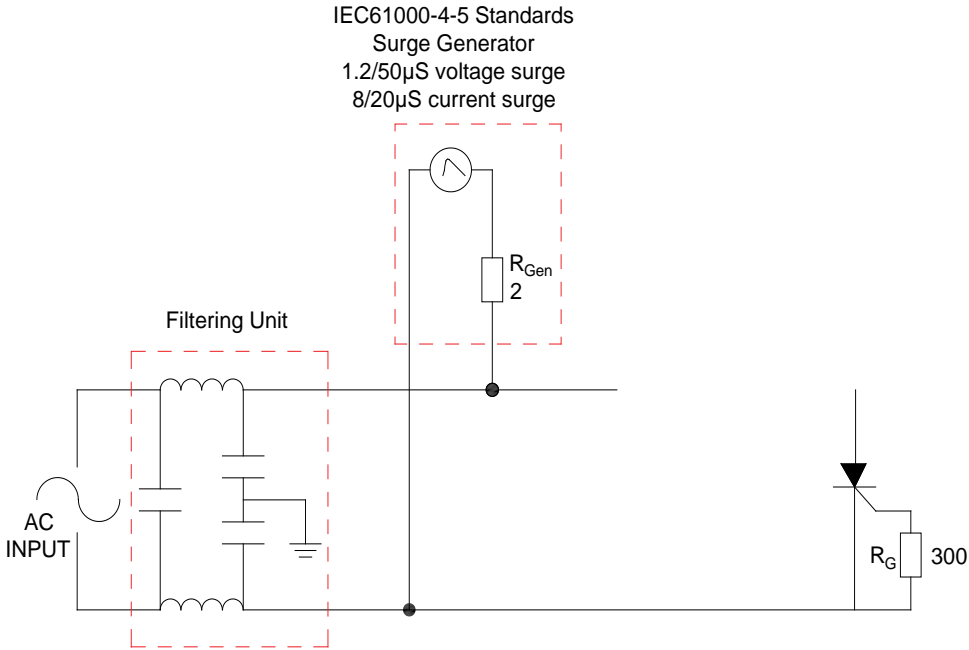


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



ORDERING INFORMATION


| Order code | Voltage V_{DRM}/V_{RRM} (V) | IGT(mA) | Package | Base qty. (pcs) | Delivery mode |
|------------|----------------------------------|---------|------------|--------------------|------------------|
| JCT1255Z | 1200 | 50 | TO-3P(Ins) | 30 | Tube |

Document Revision History

| Date | Revision | Changes |
|--------------|----------|-------------|
| Apr.13, 2023 | A.1.0 | Last update |

JCT1255Z

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