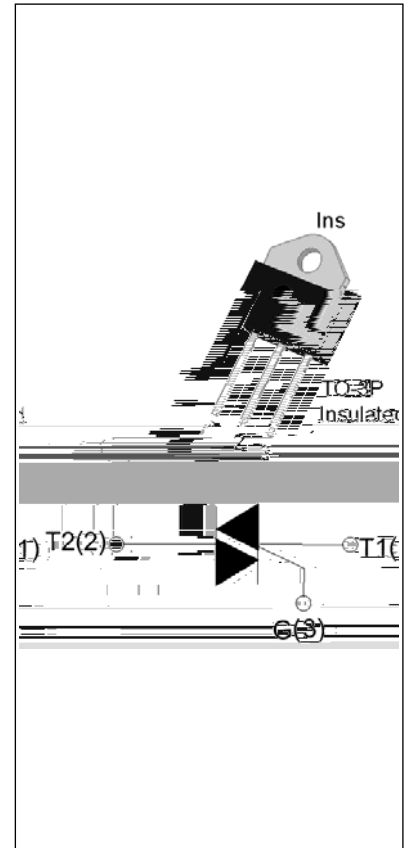


The JST30Z-1200BW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. JST30Z-1200BW snubberless triac is especially recommended for use on inductive loads. By using an internal ceramic pad, JST30Z-1200BW provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-3P is RoHS compliant.



| Symbol | Value | Unit |
|-------------------|----------|------|
| $I_{T(RMS)}$ | 30 | A |
| V_{DRM}/V_{RRM} | 1200 | V |
| $I_{GT} / /$ | 50/50/50 | mA |

| 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 |
| RMS on-state current ($T_c = 79^\circ\text{C}$) | $I_{T(RMS)}$ | 30 | A |
| Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$) | I_{TSM} | 300 | A |
| Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$) | | 330 | |
| I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$) | I^2t | 450 | A^2s |
| Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$) | di/dt | 100 | $\text{A}/\mu\text{s}$ |
| Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$) | I_{GM} | 4 | A |

| | | | |
|--|-------------|-----|----|
| Average gate power dissipation ($T_j=125$) | $P_{G(AV)}$ | 0.5 | W |
| Peak gate power | P_{GM} | 10 | W |
| Peak pulse voltage ($T_j=25$; non-repetitive, off-state; FIG.7) | V_{pp} | 2.5 | kV |

($T_j=25$ unless otherwise specified)

| Symbol | Test Condition | Quadrant | Value | Unit | |
|-------------|---|----------|-------|------|------------|
| I_{GT} | $V_D=12V R_L=33$ | - - | MAX. | 50 | mA |
| V_{GT} | | - - | MAX. | 1.3 | V |
| V_{GD} | $V_D=V_{DRM} T_j=125$ $R_L=3.3k$ | - - | MIN. | 0.15 | V |
| I_L | $I_G=1.2I_{GT}$ | - | MAX. | 90 | mA |
| | | | | 100 | |
| I_H | $I_T=500mA$ | | MAX. | 80 | mA |
| dV/dt | $V_D=800V$ Gate Open $T_j=125$ | | MIN. | 1200 | V/ μs |
| $(dI/dt)_c$ | $(dV/dt)_c=20V/\mu s T_j=125$ | | MIN. | 25 | A/ms |
| t_{on} | $I_G=80mA I_A=400mA I_R=40mA$ $T_j=25$ | | TYP. | 10 | μs |
| t_{off} | | | | 70 | |

| Symbol | Parameter | Value(MAX.) | Unit |
|-----------|---------------------------------------|-------------|---------|
| V_{TM} | $I_{TM}=42A t_p=380\mu s$ $T_j=25$ | 1.5 | V |
| V_{TO} | Threshold voltage $T_j=125$ | 0.73 | V |
| R_D | Dynamic resistance $T_j=125$ | 25 | m |
| I_{DRM} | $V_D=V_{DRM} V_R=V_{RRM}$ $T_j=25$ | 10 | μA |
| I_{RRM} | $j=125$ | 4 | mA |

| | | | | | |
|-----------------------------------|-----------|------------------|--------------|-----------------------|----------------|
| <u>J</u> | <u>ST</u> | <u>30</u> | <u>Z</u> | <u>-1200</u> | <u>BW</u> |
| JieJie Microelectronics Co., Ltd. | Triacs | $I_{T(RMS)}:30A$ | Z:TO-3P(Ins) | | BW:IGT1-3 50mA |
| | | | | 1200:VDRM /VRRM 1200V | |

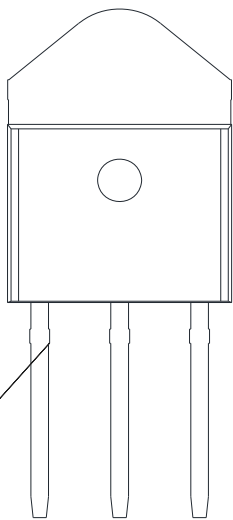


FIG.1: Maximum power dissipation versus RMS on-state current

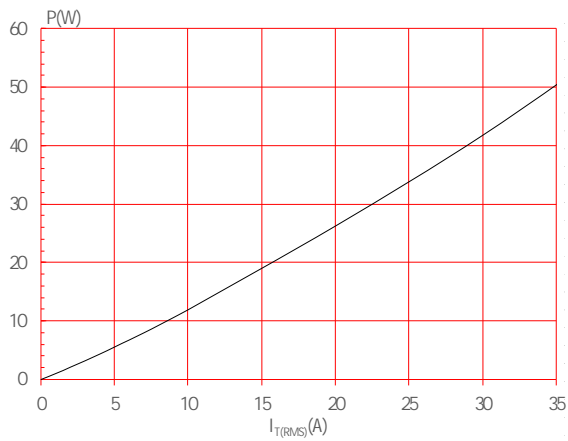


FIG.2: RMS on-state current versus case temperature

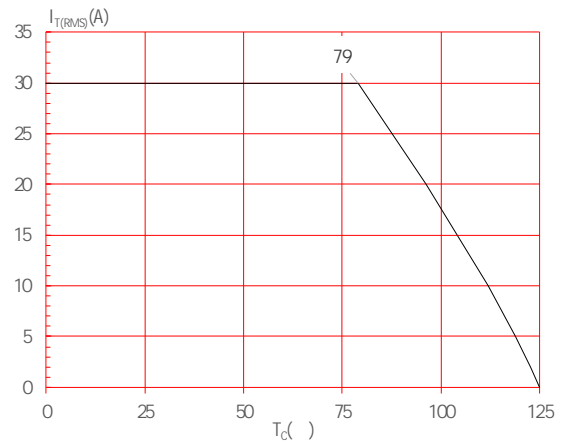


FIG.3: Surge peak on-state current versus number of cycles

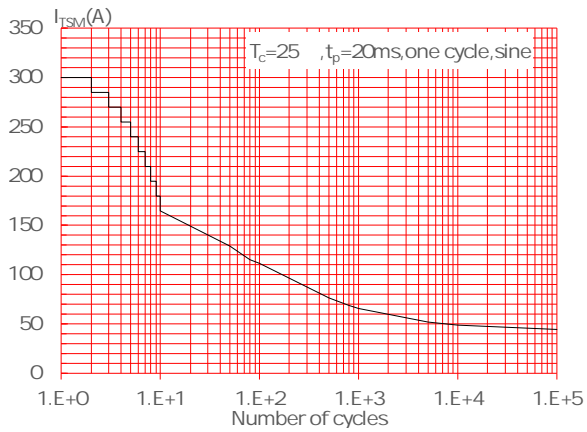


FIG.4: On-state characteristics

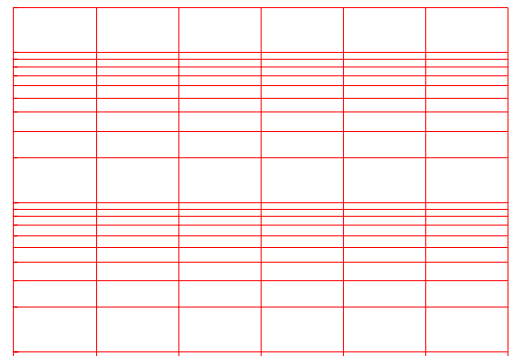
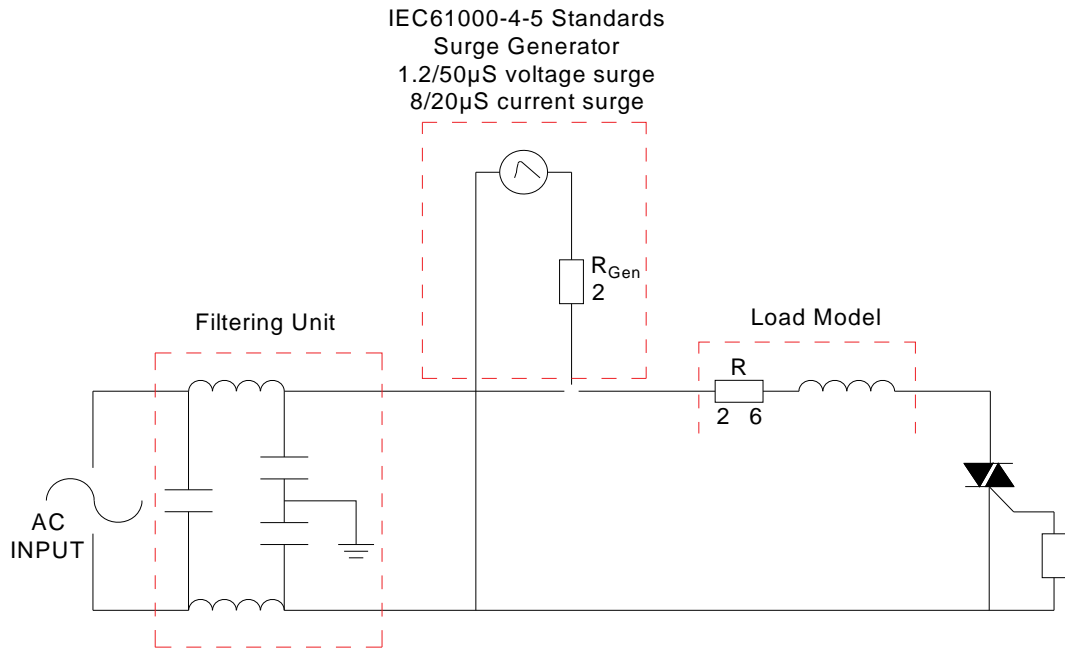


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



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