- **Description:**

  High current density due to single mesa trchnology;
  SIPOS and Glass Passivation.

- **Applications:**

  T8XX series triacs is suitable for general purpose AC switching.
  They can be used as an ON/OFF function in applications such
  as static relays,heating regulation,induction motor stating circuits...
  or for phase contol operation light dimmers,motorspeed controllers.

- **Features:**

  T8XX are 3 Quandrants TRIACS, They are specially recommended
  for use on inductive loads.
  T8XX are isolated internally,they providesa 2500V RMS isolation
  voltage from all three terminals to extemal heetsink.
  Blocking voltage to 800V
  On-state RMS current to 8A
  Non-repetitive peak on-state current to 80A



- **Absolute Maximum Ratings**
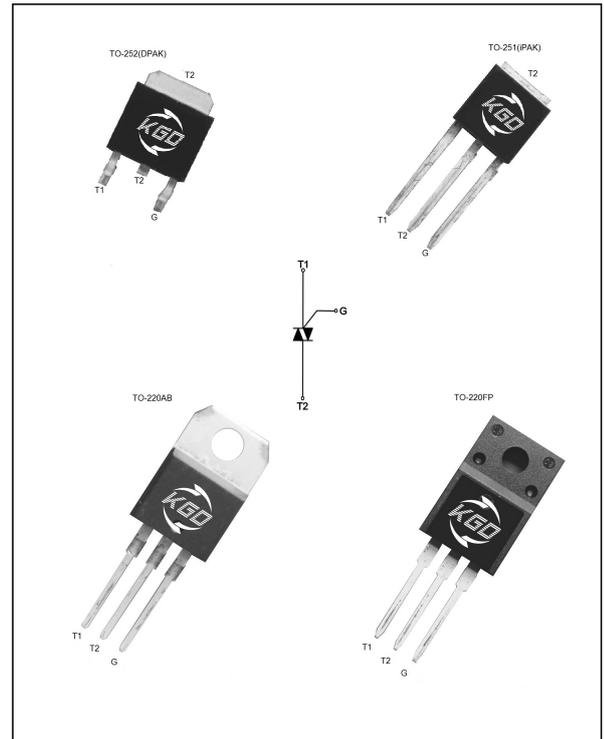
| Symbol | Parameter | Conditions | Min | Max | Unit |
|---|---|---|---|---|---|
| $V_{DRM}$ | Repetitive peak off-state voltage | $T_J=25℃$ | - | 800 | V |
| $I_{T(RMS)}$ | RMSon-statecurrent | F=60Hz,Tc=110℃ | - | 8 | A |
| $I_{TSM}$ | Non-repetitive peak On-state current | F=50Hz, t=20ms | - | 80 | A |
| | | F=60Hz, t=16.7ms | - | 84 | A |
| $I^2t$ | $I^2t$ for fusing | Tp=10ms | - | 36 | $A^2S$ |
| di/dt | Rate of rise of on-state current | $I_G=2×I_{GT},t_r≤100ns, T_j=150℃$ | - | 50 | A/μs |
| $I_{GM}$ | Peak gate current | | - | 4 | A |
| $P_{GM}$ | Peak gate power | $t_p=20μs, T_j=150℃$ | - | 5 | W |
| $P_{G(AV)}$ | Average gate power | | - | 1 | W |
| $T_{STG}$ | Storage temperature | | -40 | 150 | ℃ |
| $T_J$ | Junction temperature | | -40 | 125 | ℃ |

- **Thermal Characteristics**

| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| $R_{th(j-mb)}$ | Junction to Case(AC) | DPAK/IPAK | 1.6 | ℃/W |
| | | TO-220AB Insulated/TO-220FP | 2.5 | |
| $R_{th(j-a)}$ | Junction to am bient | DPAK/IPAK | 60 | ℃/W |
| | | TO-220AB Insulated/TO-220FP | | |

- **Electrical Characteristics**

| Symbol | Conditions | Quadrant | | Numerical | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | | | T805 | T810 | T835 | T850 | |
| $V_{TM}$ | $I_T$=17A,tp=380µs | $T_J$=25℃ | MAX | | 1.55 | | | V |
| $I_{DRM}$ $I_{RRM}$ | $V_D$=$V_{DRM}$,$V_R$=$V_{RRM}$ | $T_J$=25℃ | MAX | | 10 | | | µA |
| | | $T_J$=150℃ | MAX | | 3.0 | | | mA |
| $I_{GT}$ | $V_D$=12V,$R_L$=33Ω | I-II-III | MAX | 5 | 10 | 35 | 50 | mA |
| $V_{GT}$ | | I-II-III | MAX | | 1.5 | | | V |
| $V_{GD}$ | $V_D$=$V_{DRM}$,$R_L$=3.3KΩ, $T_j$=150℃ | I-II-III | MIN | | 0.2 | | | V |
| $I_L$ | $I_T$=1.2$I_{GT}$ | I-III | MAX | 10 | 25 | 50 | 70 | mA |
| | | II | MAX | 15 | 30 | 60 | 80 | mA |
| $I_H$ | $I_T$=100mA | | MAX | 10 | 15 | 35 | 50 | Ma |
| dv/dt | $V_{DM}$=67%$V_{DRM}$,gate open,$T_j$=150℃ | | MIN | 20 | 40 | 400 | 1000 | V/µs |

- **Ordering Information**

T 8 xx x T

Kacoda TRIAC SERIES

$I_{T(RMS)}$: 8A

20:$I_{GT1}$/$I_{GT2}$/$I_{GT3}$≤20mA
35:$I_{GT1}$/$I_{GT2}$/$I_{GT3}$≤35mA
50:$I_{GT1}$/$I_{GT2}$/$I_{GT3}$≤50mA

F:TO-220FP
T:TO-220AB
B:TO-252/DPAK
H:TO-251/IPAK

6:$V_{DRM}$/$V_{RRM}$≥600V
8:$V_{DRM}$/$V_{RRM}$≥800V

● **Package Outline Dimensions**

## TO-220AB
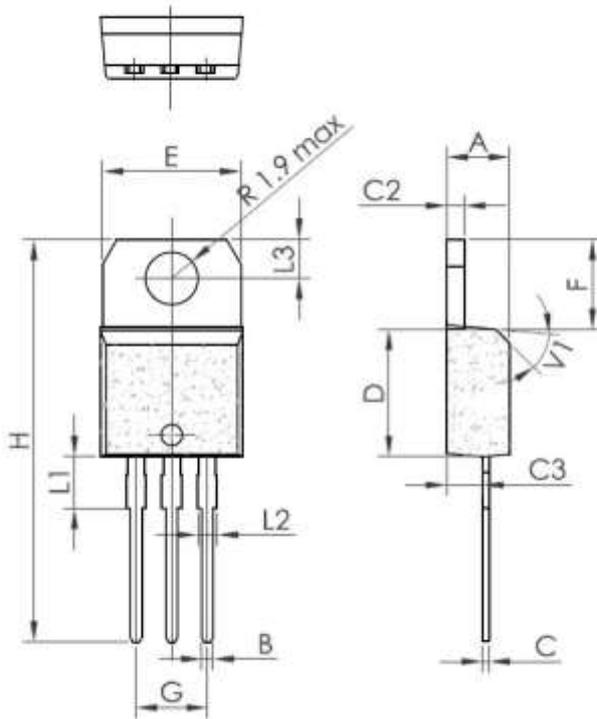


| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.4 | | 4.6 | 0.173 | | 1.181 |
| B | 0.61 | | 0.88 | 0.024 | | 0.034 |
| C | 0.49 | | 0.70 | 0.019 | | 0.027 |
| C2 | 1.23 | | 1.32 | 0.048 | | 0.051 |
| C3 | 2.4 | | 2.72 | 0.094 | | 0.107 |
| D | 8.6 | | 9.7 | 0.338 | | 0.382 |
| E | 10 | | 10.4 | 0.393 | | 0.409 |
| F | 6.2 | | 6.6 | 0.244 | | 0.259 |
| G | 4.8 | | 5.4 | 0.189 | | 0.213 |
| H | 28.0 | | 29.8 | 11.0 | | 11.7 |
| L1 | | 3.75 | | | 0.147 | |
| L2 | 1.14 | | 1.7 | 0.044 | | 0.066 |
| L3 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| V1 | | 40° | | | 40° | |

## TO-252 / DPAK
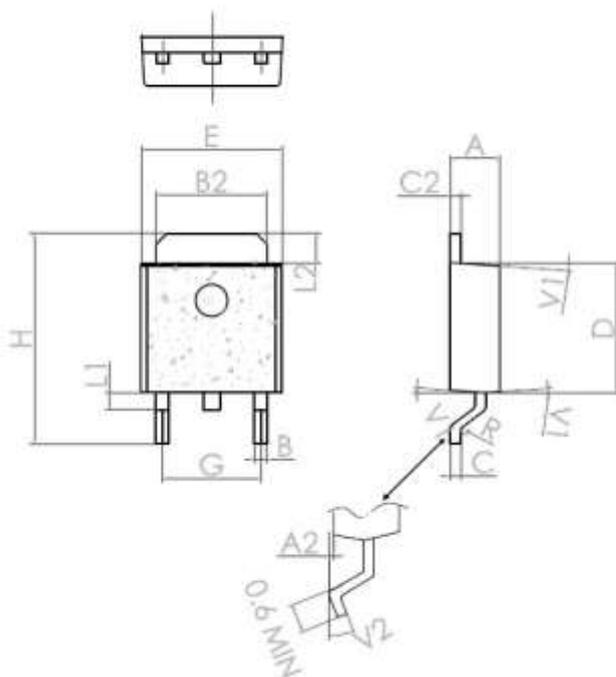


| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 2.2 | | 2.4 | 0.086 | | 0.095 |
| A2 | 0.03 | | 0.23 | 0.001 | | 0.009 |
| B | 0.55 | | 0.65 | 0.021 | | 0.026 |
| B2 | 5.2 | | 5.4 | 0.204 | | 0.212 |
| C | 0.45 | | 0.62 | 0.017 | | 0.024 |
| C2 | 0.48 | | 0.62 | 0.019 | | 0.024 |
| D | 6 | | 6.2 | 0.236 | | 0.244 |
| E | 6.4 | | 6.6 | 0.251 | | 0.259 |
| G | 4.40 | | 4.60 | 0.173 | | 0.181 |
| H | 9.35 | | 10.1 | 0.368 | | 0.397 |
| L1 | | 0.8 | | | 0.031 | |
| L2 | 1.37 | | 1.5 | 0.054 | | 0.059 |
| V1 | | 4° | | | 4° | |
| V2 | 0° | | 8° | 0° | | 8° |

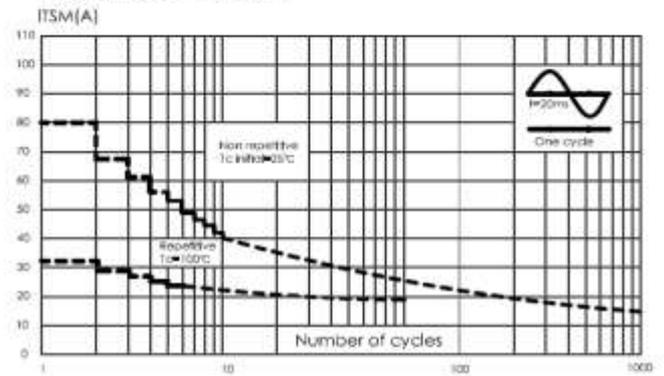**FIG.1:** Maximum power dissipation versus RMS on-state current(full cycle)
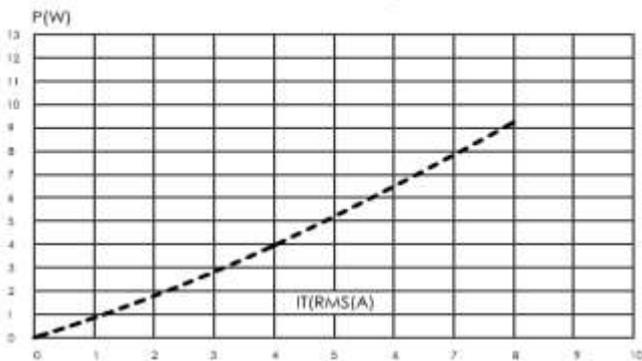


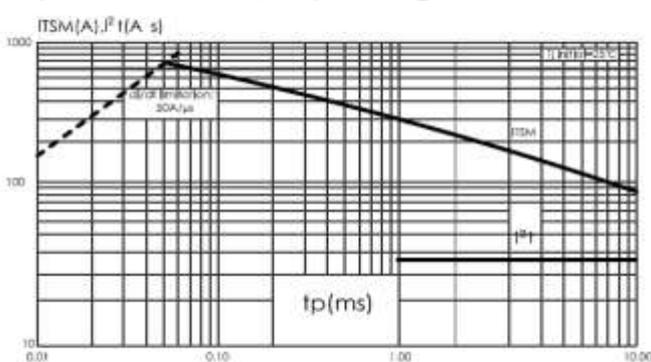**FIG.2:** RMS on-state current versus case temperature(full cycle)
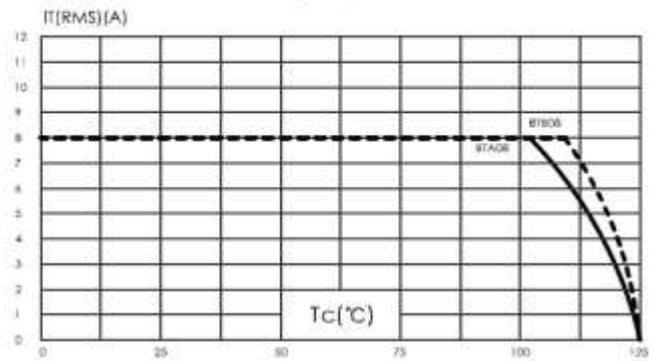


**FIG.3:** On-state characteristics (maximum values)
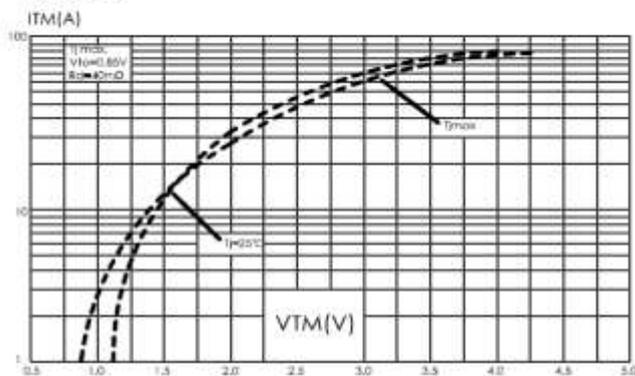


**FIG.4:** Surge peak on-state current versus number of cycles.



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I²t



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