# T810-600B

## Three quadrant triacs

**HAOPIN MICROELECTRONICS CO.,LTD.**

注：该产品为管装，每管80PCS，每一盒为4K

### Description

Passivated high commutation triacs in a plastic envelope intended for use in circuits where high static and dynamic dV/dt and high dI/dt can occur. These devices will commutate the full rated ms current at the maximum rated junction temperature without the aid of a snubber.

| Symbol | Simplified outline |
|---|---|
|   |   TO-252 |

| Pin | Description |
|---|---|
| 1 | Main terminal 1 (T1) |
| 2 | Main terminal 2 (T2) |
| 3 | gate (G) |
| TAB | Main terminal 2 (T2) |

### Applications:

- Motor control
- Industrial and domestic lighting
- Heating
- Static switching

### Features

- Blocking voltage to 600 V
- On-state RMS current to 8 A

| SYMBOL | PARAMETER | Value | Unit |
|---|---|---|---|
| $V_{DRM}$ | Repetitive peak off-state voltages | 600 | V |
| $I_{T(RMS)}$ | RMS on-state current （full sine wave） | 8 | A |
| $I_{TSM}$ | Non-repetitive peak on-state current (full cycle,Tj initial=25℃) | 84 | A |

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Rth( j-c) | Junction to case(AC) | | - | 1.6 | - | ℃/W |
| Rth( j-a) | Junction to ambient | | - | 70 | - | ℃/W |

Limiting values in accordance with the Maximum system(IEC 134)

| SYMBOL | PARAMETER | CONDITIONS | | | MIN | Value | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{DRM}/V_{RRM}$ | Repetitive peak off-state Voltages | | | | - | 600 | V |
| $I_{T(RMS)}$ | RMS on-state current | Full sine wave;$T_C$=110℃ | | | - | 8 | A |
| $I_{TSM}$ | Non repetitive surge peak on-state current | full cycle, Tj initial= 25℃ | F=50Hz | t=20ms | - | 80 | A |
| | | | F=60Hz | t=16.7ms | - | 84 | A |
| $I^2t$ | $I^2t$ value for fusing | tp=10ms | | | - | 36 | $A^2S$ |
| dI/dt | Critical rate of rise of on-state current | $I_G$=2x $I_{GT}$,tr<=100ns | F=120Hz | Tj=125℃ | - | 50 | A/μs |
| $I_{GM}$ | Peak gate current | | tp=20us | Tj=125℃ | - | 4 | A |
| $I_{DRM}$ | $V_{DRM}=V_{RRM}$ | | | Tj=25℃ | - | 5 | μA |
| $I_{RRM}$ | | | | Tj=125℃ | - | 1 | mA |
| $P_{G(AV)}$ | Average gate power dissipation | | | Tj=125℃ | - | 1 | W |
| $T_{stg}$ | Storage junction temperature range | | | | -40 | 150 | ℃ |
| $T_j$ | Operating junction temperature range | | | | -40 | 125 | ℃ |

$T_J$=25℃ unless otherwise stated

| SYMBOL | PARAMETER | CONDITIONS | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| Static characteristics | | | | | | | |
| $I_{GT}(1)$ | | $V_D$=12V; RL=30Ω | I-II-III | - | - | 10 | mA |
| $V_{GT}$ | | | I-II-III | | | 1.3 | V |
| $I_L$ | | $I_G$=1.2 $I_{GT}$ | I-III | - | - | 25 | mA |
| | | | II | - | - | 30 | mA |
| $I_H(2)$ | | $I_T$=100mA | | - | - | 15 | mA |
| $V_{GD}$ | | $V_D=V_{DRM}$ $R_L$=3.3KΩ Tj=125℃ | I-II-III | 0.2 | - | - | V |
| dV/dt(2) | | $V_D$=67%$V_{DRM}$ gate open;Tj=125℃ | | 40 | - | - | V/μs |
| (dI/dt)c(2) | | (dv/dt)c=0.1V/μS Tj=125℃ | | 5.4 | - | - | V/μs |
| | | (dv/dt)c=10V/μS Tj=125℃ | | 2.8 | | | |

Dynamic Characteristics

| | | | | | | |
|---|---|---|---|---|---|---|
| $V_{TM}(2)$ | $I_{TM}$=11A tp=380μs | Tj=25℃ | - | - | 1.55 | V |
| $V_{to}(2)$ | Threshold voltage | Tj=125℃ | - | - | 0.85 | V |
| $R_d(2)$ | Dynamic resistance | Tj=125℃ | | | 50 | mΩ |

Note1:minimum $I_{GT}$ is guaranted at 5% of $I_{GT}$ max.

Note2: for both polarities of A2 referenced to A1.

Description

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

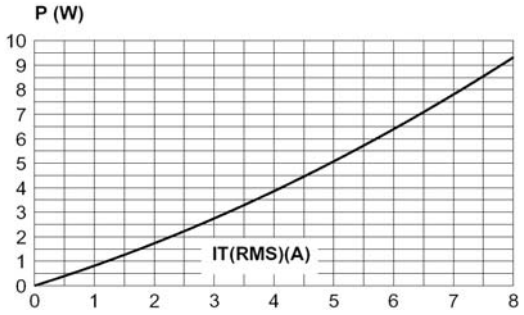



**Fig. 2-1:** RMS on-state current versus case temperature (full cycle).

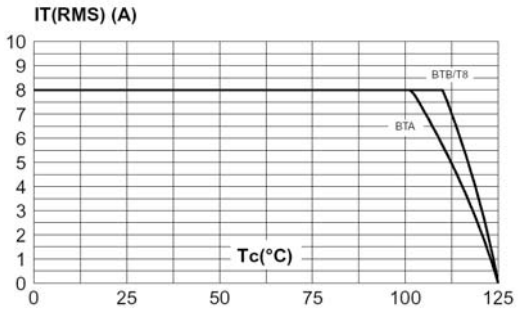



**Fig. 2-2:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35µm),full cycle.

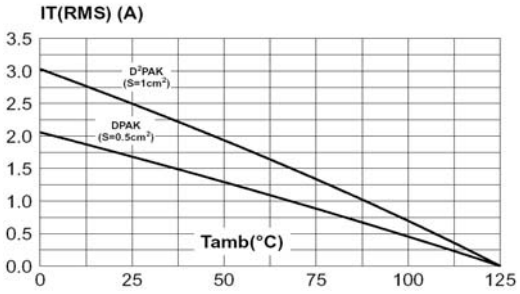



**Fig. 3:** Relative variation of thermal impedance versus pulse duration.

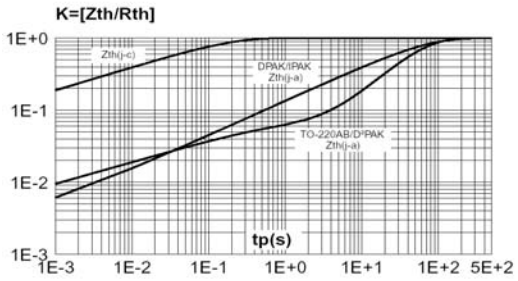



**Fig. 4:** On-state characteristics (maximum values).

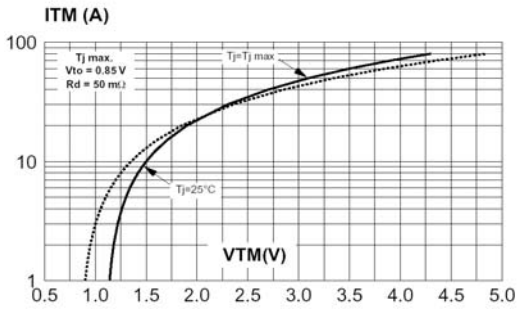
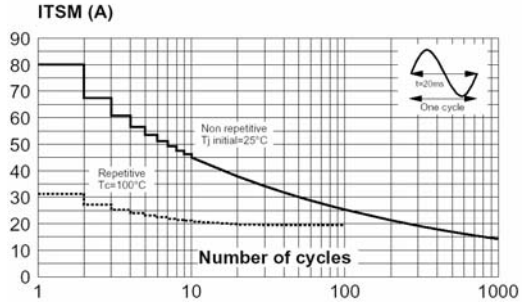



**Fig. 5:** Surge peak on-state current versus number of cycles.



Description

**Fig. 6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms, and corresponding value of I²t.

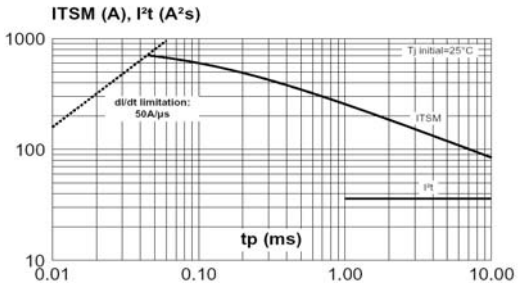



**Fig. 7:** Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

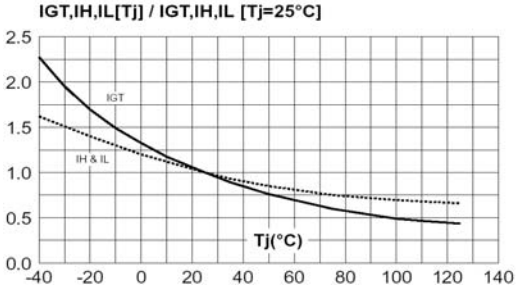



**Fig. 8-1:** Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values). Snubberless & Logic Level Types

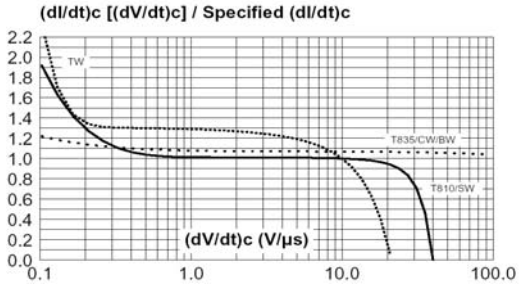



**Fig. 8-2:** Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values). Standard Types

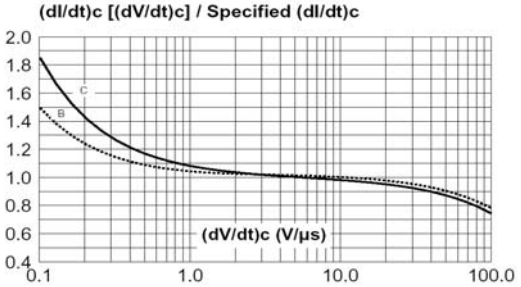



**Fig. 9:** Relative variation of critical rate of decrease of main current versus junction temperature.

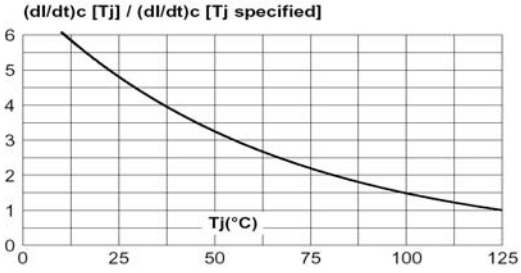
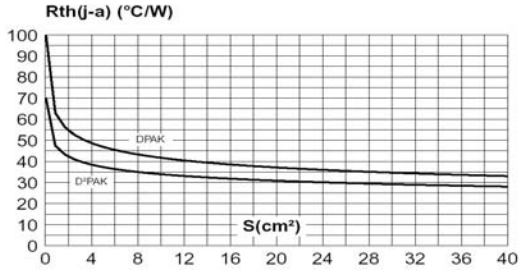



**Fig. 10:** DPAK and D²PAK Thermal resistance junction to ambient versus copper surface under tab (printed circuit board FR4, copper thickness: 35 µm).



MECHANICAL DATA

Dimensions in mm
Net Mass: 2 g