

GENERAL DESCRIPTION

Passivated triacs in a plastic envelope, intended for use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting, heating and static switching.

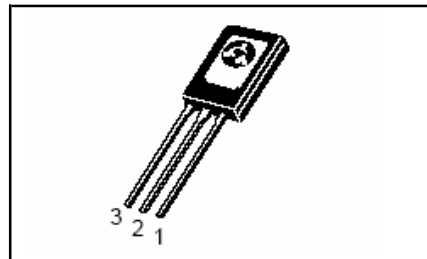
QUICK REFERENCE DATA

| SYMBOL | PARAMETER | MAX. | UNIT |
|--------------|--------------------------------------|------------|------|
| | BT134- | 600 | |
| V_{DRM} | Repetitive peak off-state voltages | 600 | V |
| $I_{T(RMS)}$ | RMS on-state current | 4 | A |
| I_{TSM} | Non-repetitive peak on-state current | 25 | A |

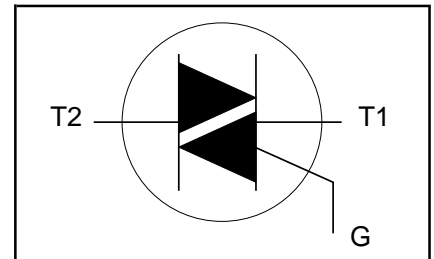
PINNING - TO126

| PIN | DESCRIPTION |
|-----|-----------------|
| 1 | main terminal 1 |
| 2 | main terminal 2 |
| 3 | gate |

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|--------------|--|--|------|------------------|------------------|
| V_{DRM} | Repetitive peak off-state voltages | | - | 600 ¹ | V |
| $I_{T(RMS)}$ | RMS on-state current | full sine wave; $T_{mb} \leq 107\text{ }^\circ\text{C}$ | - | 4 | A |
| I_{TSM} | Non-repetitive peak on-state current | full sine wave; $T_j = 25\text{ }^\circ\text{C}$ prior to surge $t = 20\text{ ms}$ | - | 25 | A |
| | | $t = 16.7\text{ ms}$ | - | 27 | A |
| | | $t = 10\text{ ms}$ | - | 3.1 | A ² s |
| I^2t | I^2t for fusing | | | | |
| dI_T/dt | Repetitive rate of rise of on-state current after triggering | $I_{TM} = 6\text{ A}$; $I_G = 0.2\text{ A}$; $dI_G/dt = 0.2\text{ A}/\mu\text{s}$ | | | |
| | | T2+ G+ | - | 50 | A/ μs |
| | | T2+ G- | - | 50 | A/ μs |
| | | T2- G- | - | 50 | A/ μs |
| | | T2- G+ | - | 10 | A/ μs |
| I_{GM} | Peak gate current | | - | 2 | A |
| V_{GM} | Peak gate voltage | | - | 5 | V |
| P_{GM} | Peak gate power | | - | 5 | W |
| $P_{G(AV)}$ | Average gate power | over any 20 ms period | - | 0.5 | W |
| T_{stg} | Storage temperature | | -40 | 150 | $^\circ\text{C}$ |
| T_j | Operating junction temperature | | - | 125 | $^\circ\text{C}$ |

¹ Although not recommended, off-state voltages up to 800V may be applied without damage, but the triac may switch to the on-state. The rate of rise of current should not exceed 3 A/ μs .

THERMAL RESISTANCES

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|----------------|--|---------------------------|------|------|------|------|
| $R_{th\ j-mb}$ | Thermal resistance junction to mounting base | full cycle | - | - | 3.0 | K/W |
| $R_{th\ j-a}$ | Thermal resistance junction to ambient | half cycle in free air | - | - | 3.7 | K/W |
| | | | - | 60 | - | K/W |

STATIC CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | | UNIT |
|----------|---------------------------|---|------|------|------|------|------|
| I_{GT} | Gate trigger current | BT134- $V_D = 12\text{ V}; I_T = 0.1\text{ A}$ | - | - | ... | ...F | |
| | | T2+ G+ | - | 5 | 35 | 25 | mA |
| | | T2+ G- | - | 8 | 35 | 25 | mA |
| | | T2- G- | - | 11 | 35 | 25 | mA |
| I_L | Latching current | $V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$ | - | - | ... | ...F | |
| | | T2- G+ | - | 30 | 70 | 70 | mA |
| | | T2+ G+ | - | 7 | 20 | 20 | mA |
| | | T2+ G- | - | 16 | 30 | 30 | mA |
| I_H | Holding current | $V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$ | - | - | ... | ...F | |
| | | T2- G- | - | 5 | 20 | 20 | mA |
| | | T2- G+ | - | 7 | 30 | 30 | mA |
| V_T | On-state voltage | $I_T = 5\text{ A}$ | - | 1.4 | 1.70 | | V |
| V_{GT} | Gate trigger voltage | $V_D = 12\text{ V}; I_T = 0.1\text{ A}$ | - | 0.7 | 1.5 | | V |
| | | $V_D = 400\text{ V}; I_T = 0.1\text{ A}; T_j = 125\text{ }^\circ\text{C}$ | 0.25 | 0.4 | - | | V |
| I_D | Off-state leakage current | $V_D = V_{DRM(max)}; T_j = 125\text{ }^\circ\text{C}$ | - | 0.1 | 0.5 | | mA |

DYNAMIC CHARACTERISTICS

$T_j = 25\text{ }^\circ\text{C}$ unless otherwise stated

| SYMBOL | PARAMETER | CONDITIONS | MIN. | | TYP. | MAX. | UNIT | |
|---------------|--|--|------|-----|------|------|------|------------|
| dV_D/dt | Critical rate of rise of off-state voltage | BT134- $V_{DM} = 67\% V_{DRM(max)}; T_j = 125\text{ }^\circ\text{C};$ exponential waveform; gate open circuit | ... | ... | 50 | 250 | - | V/ μ s |
| dV_{com}/dt | Critical rate of change of commutating voltage | $V_{DM} = 400\text{ V}; T_j = 95\text{ }^\circ\text{C}; I_{T(RMS)} = 4\text{ A}; dl_{com}/dt = 1.8\text{ A/ms};$ gate open circuit | - | - | - | 50 | - | V/ μ s |
| t_{gt} | Gate controlled turn-on time | $I_{TM} = 6\text{ A}; V_D = V_{DRM(max)}; I_G = 0.1\text{ A}; dl_G/dt = 5\text{ A}/\mu\text{s}$ | - | - | - | 2 | - | μ s |

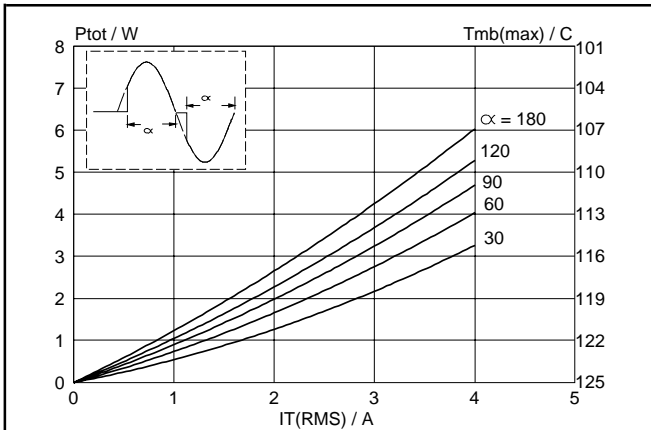


Fig.1. Maximum on-state dissipation, P_{tot} , versus rms on-state current, $I_{T(RMS)}$, where α = conduction angle.

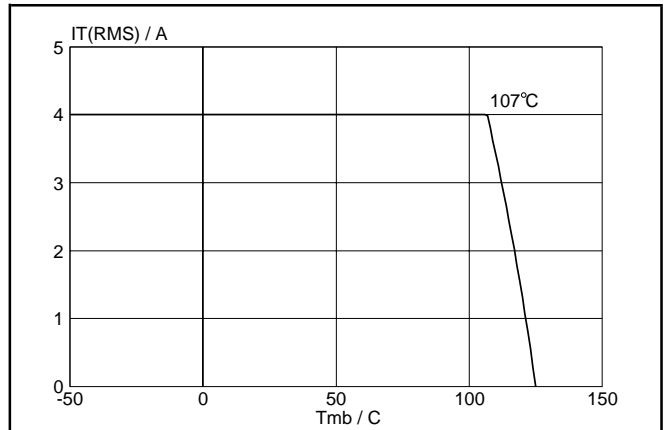


Fig.4. Maximum permissible rms current $I_{T(RMS)}$, versus mounting base temperature T_{mb} .

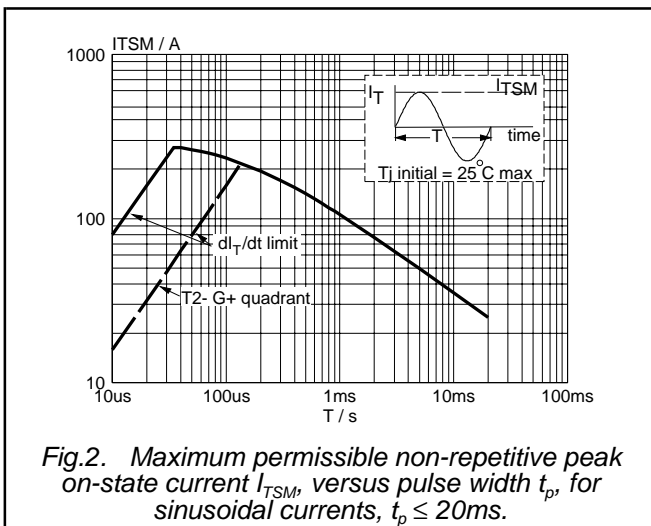


Fig.2. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus pulse width t_p , for sinusoidal currents, $t_p \leq 20ms$.

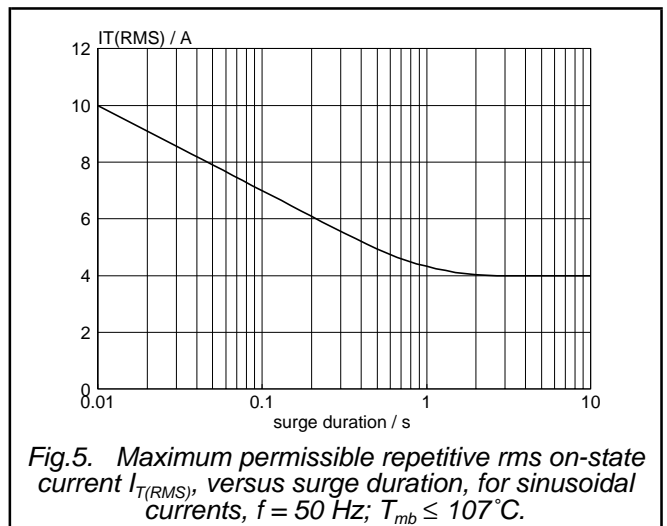


Fig.5. Maximum permissible repetitive rms on-state current $I_{T(RMS)}$, versus surge duration, for sinusoidal currents, $f = 50\text{ Hz}$; $T_{mb} \leq 107^\circ\text{C}$.

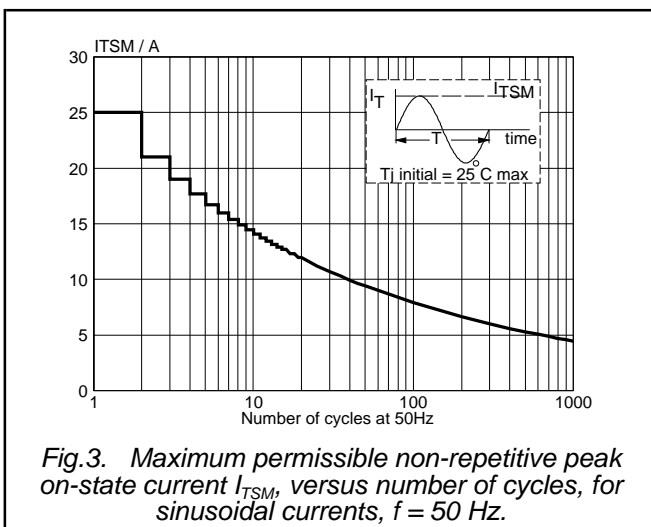


Fig.3. Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50\text{ Hz}$.

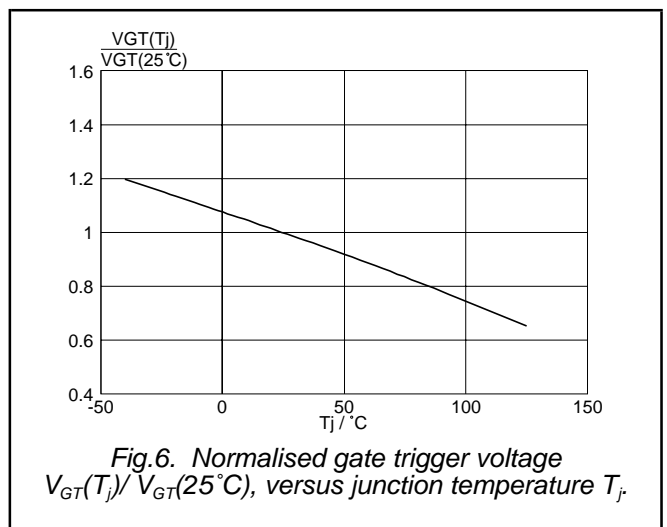


Fig.6. Normalised gate trigger voltage $V_{GT}(T_j)/V_{GT}(25^\circ\text{C})$, versus junction temperature T_j .

