

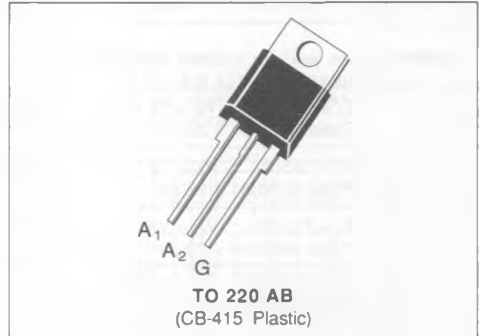


LOGIC LEVEL TRIACS

- $I_{TRMS} = 6 \text{ A}$ at $T_c = 80 \text{ }^\circ\text{C}$.
- $V_{DRM} : 200 \text{ V}$ to 800 V .
- $I_{GT} = 10 \text{ mA}$ (QI-II-III).
- $(di/dt)_c = 3.5 \text{ A/ms}$ @ $(dv/dt)_c = 50 \text{ V}/\mu\text{s}$.
- SUITED FOR LOW POWER TRIGGER CIRCUITS (INTEGRATED CIRCUITS AND MICROPROCESSORS).
- GLASS PASSIVATED CHIP.
- HIGH EFFICIENCY SWITCHING.
- AVAILABLE IN INSULATED VERSION → BTA SERIES (INSULATING VOLTAGE : 2500 V_{RMS}) OR IN UNINSULATED VERSION → BTB SERIES.
- UL RECOGNIZED FOR BTA SERIES (E81734).

DESCRIPTION

New range suited for applications such as phase control and static switching on inductive or resistive load.



ABSOLUTE RATINGS (limiting values)

| Symbol | Parameter | Value | Unit |
|-------------------|--|--|--------------------------------------|
| I_{TRMS} | RMS on-state current (360 ° conduction angle) | $T_c = 80 \text{ }^\circ\text{C}$ 6 | A |
| I_{TSM} | Non repetitive surge peak on-state current (T_j initial = $25 \text{ }^\circ\text{C}$) | $t = 8.3 \text{ ms}$ | 95 |
| | | $t = 10 \text{ ms}$ | 85 |
| I^2t | I^2t value | $t = 10 \text{ ms}$ | 36 |
| di/dt | Critical rate of rise of on-state current (1) | Repetitive $F = 50 \text{ Hz}$ | 20 |
| | | Non Repetitive | 100 |
| T_{sj} T_j | Storage and operating junction temperature range | - 40, + 150 - 40, + 110 | $^\circ\text{C}$ $^\circ\text{C}$ |

| Symbol | Parameter | BTA/BTB 06- | | | | | Unit |
|-----------|---------------------------------------|-------------|-----------|-----------|-----------|-----------|------|
| | | 200 SW | 400 SW | 600 SW | 700 SW | 800 SW | |
| V_{DRM} | Repetitive peak off-state voltage (2) | ± 200 | ± 400 | ± 600 | ± 700 | ± 800 | V |

(1) Gate supply : $I_G = 100 \text{ mA}$ – $di_G/dt = 1 \text{ A}/\mu\text{s}$.
 (2) $T_j = 110 \text{ }^\circ\text{C}$.

THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|------------------|---|-------|------|
| $R_{th(j-a)}$ | Junction to ambient | 60 | °C/W |
| $R_{th(j-c)}$ DC | Junction to case for DC | 4.8 | °C/W |
| $R_{th(j-c)}$ AC | Junction to case for 360 ° conduction angle (F = 50 Hz) | 3.6 | °C/W |

GATE CHARACTERISTICS (maximum values)

$P_{GM} = 40\text{ W}$ ($t = 10\ \mu\text{s}$) $P_{G(AV)} = 1\text{ W}$ $I_{GM} = 4\text{ A}$ ($t = 10\ \mu\text{s}$) $V_{GM} = 16\text{ V}$ ($t = 10\ \mu\text{s}$).

ELECTRICAL CHARACTERISTICS

| Symbol | Test Conditions | | | Quadrants | Min. | Typ. | Max. | Unit |
|---------------|---|--|----------------------------|-----------|------|------|------|------------------|
| I_{GT} | $T_j = 25\text{ °C}$ | $V_D = 12\text{ V}$ | $R_L = 33\ \Omega$ | I-II-III | | | 10 | mA |
| | Pulse duration > 20 μs | | | | | | | |
| V_{GT} | $T_j = 25\text{ °C}$ | $V_D = 12\text{ V}$ | $R_L = 33\ \Omega$ | I-II-III | | | 1.5 | V |
| | Pulse duration > 20 μs | | | | | | | |
| V_{GD} | $T_j = 110\text{ °C}$ | $V_D = V_{DRM}$ | $R_L = 3.3\text{ k}\Omega$ | I-II-III | 0.2 | | | V |
| | Pulse duration > 20 μs | | | | | | | |
| I_H^* | $T_j = 25\text{ °C}$ | $I_T = 100\text{ mA}$ | | | | | 25 | mA |
| | Gate open $R_L = 140\ \Omega$ | | | | | | | |
| I_L | $T_j = 25\text{ °C}$ | $V_D = 12\text{ V}$ | $R_L = 33\ \Omega$ | I-III | | 25 | | mA |
| | | | | II | | 50 | | |
| | Pulse duration > 20 μs | | | | | | | |
| V_{TM}^* | $T_j = 25\text{ °C}$ | $I_{TM} = 8.5\text{ A}$ | | | | | 1.75 | V |
| | $t_p = 10\text{ ms}$ | | | | | | | |
| I_{DRM}^* | $T_j = 25\text{ °C}$ | V_{DRM} rated | Gate open | | | | 10 | μA |
| | $T_j = 110\text{ °C}$ | | | | | 500 | | |
| dv/dt^* | $T_j = 110\text{ °C}$ | Gate open | | | 50 | | | V/ μs |
| | Linear slope up to 0.67 V_{DRM} | | | | | | | |
| $(di/dt)_c^*$ | $T_j = 110\text{ °C}$ | $(dv/dt)_c = 0.1\text{ V}/\mu\text{s}$ | | | 3.5 | 5 | | A/ms |
| | $T_j = 110\text{ °C}$ | $(dv/dt)_c = 50\text{ V}/\mu\text{s}$ | | | 2.7 | 3.5 | | |
| t_{gt} | $T_j = 25\text{ °C}$ | $di_G/dt = 1\text{ A}/\mu\text{s}$ | $I_G = 50\text{ mA}$ | I-II-III | | 2 | | μs |
| | $I_T = 8.5\text{ A}$ $V_D = V_{DRM}$ | | | | | | | |

* For either polarity of electrode A₂ voltage with reference to electrode A₁.

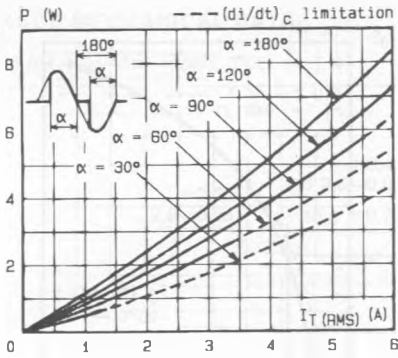


Fig. 1 - Maximum mean power dissipation versus RMS on-state current ($f = 60$ Hz).

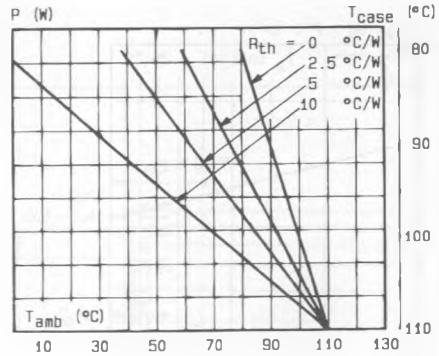


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

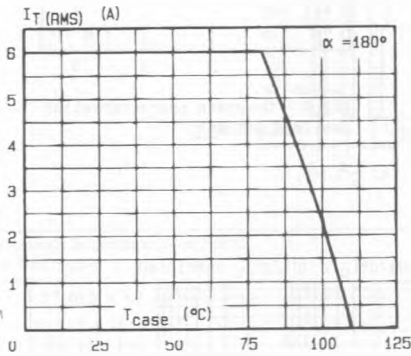


Fig. 3 - RMS on-state current versus case temperature.

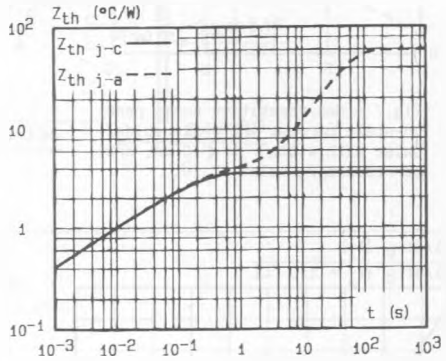


Fig. 4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

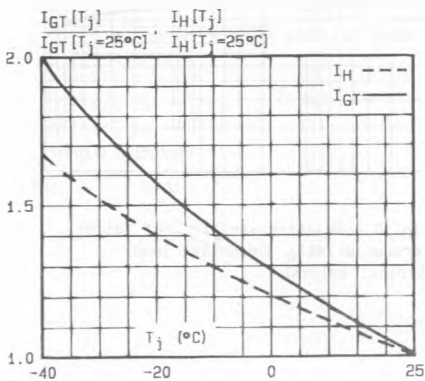


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

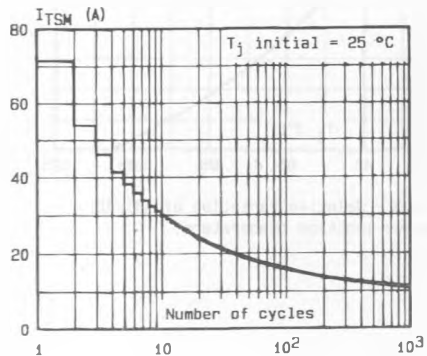


Fig. 6 - Non repetitive surge peak on-state current versus number of cycles.

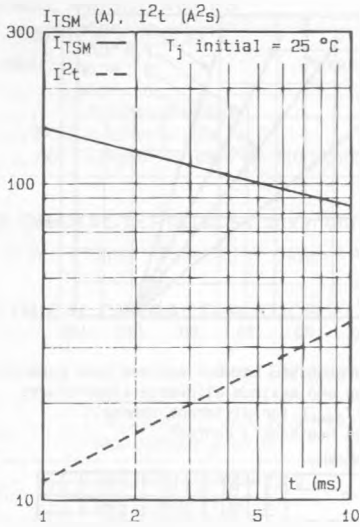


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

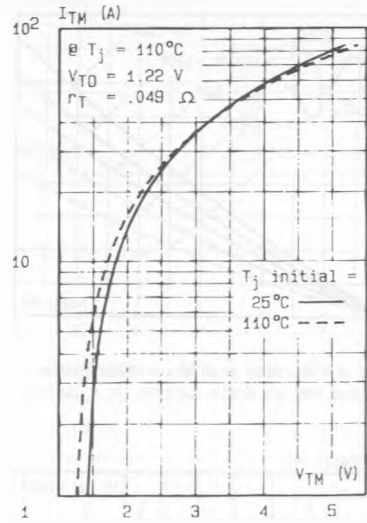


Fig.8 - On-state characteristics (maximum values).

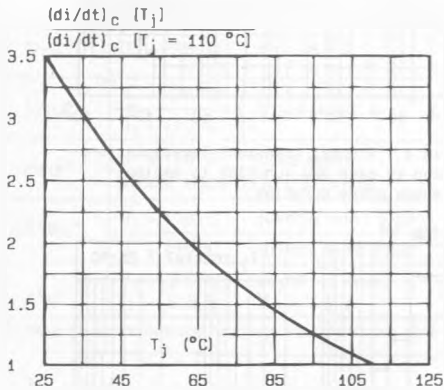


Fig.9 - Relative variation of $(di/dt)_C$ versus junction temperature.

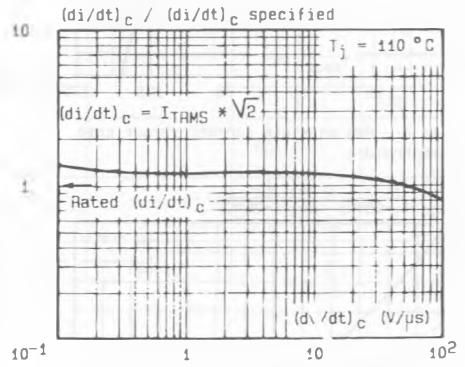
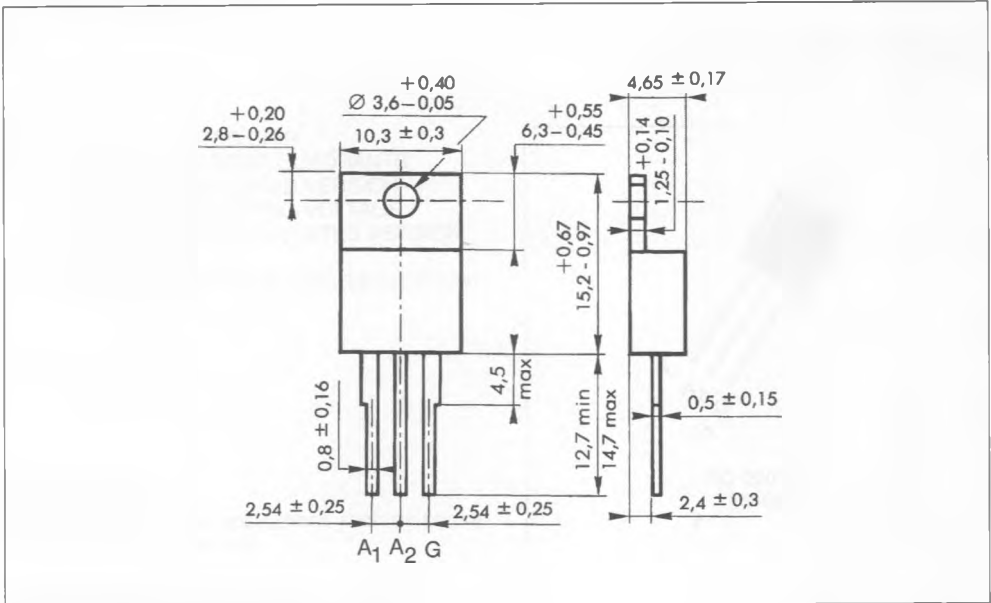


Fig.10 - Relative variation of $(di/dt)_C$ versus $(dv/dt)_C$ (inductive load) (typical values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g