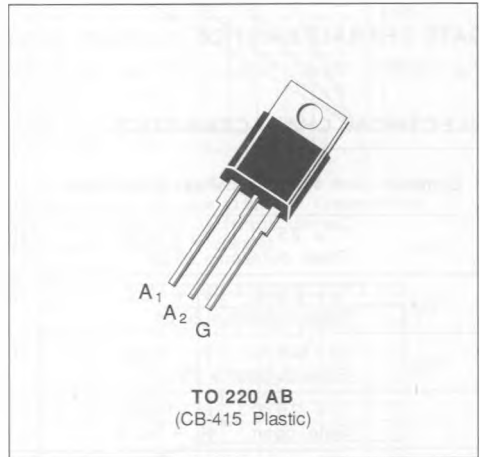


SNUBBERLESS TRIACS

- $I_{TRMS} = 12\text{ A}$ at $T_c = 85\text{ }^\circ\text{C}$.
- $V_{DRM} : 200\text{ V}$ to 800 V .
- $I_{GT} = 75\text{ mA}$ (QI-II-III).
- GLASS PASSIVATED CHIP.
- HIGH SURGE CURRENT : $I_{TSM} = 120\text{ A}$.
- HIGH COMMUTATION CAPABILITY :
(di/dt)_c > 16 A/ms without snubber.
- INSULATING VOLTAGE : 2500 V_{RMS} .
- UL RECOGNIZED (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) | $T_c = 85\text{ }^\circ\text{C}$ | 12 | A |
| I_{TSM} | Non repetitive surge peak on-state current (T_j initial = $25\text{ }^\circ\text{C}$) | $t = 8.3\text{ ms}$ | 126 | A |
| | | $t = 10\text{ ms}$ | 120 | |
| $I^2 t$ | $I^2 t$ value | $t = 10\text{ ms}$ | 72 | $\text{A}^2\text{ s}$ |
| di/dt | Critical rate of rise of on-state current (1) | Repetitive $F = 50\text{ Hz}$ | 20 | A / μs |
| | | Non Repetitive | 100 | |
| T_{stg} T_j | Storage and operating junction temperature range | | - 40, + 150 - 40, + 125 | $^\circ\text{C}$ |

| Symbol | Parameter | BTA 12- | | | | | Unit |
|-----------|---------------------------------------|-----------|-----------|-----------|-----------|-----------|------|
| | | 200 AW | 400 AW | 600 AW | 700 AW | 800 AW | |
| V_{DRM} | Repetitive peak off-state voltage (2) | ± 200 | ± 400 | ± 600 | ± 700 | ± 800 | V |

(1) Gate supply : $I_G = 750\text{ mA} - di_G / dt = 1\text{ A} / \mu\text{s}$.

(2) $T_j = 125\text{ }^\circ\text{C}$.

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 | 3.3 | °C/W |
| $R_{th(j-c)}$ AC | Junction to case for 360 ° conduction angle (F = 50 Hz) | 2.5 | °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} | $T_j = 25\text{ °C}$ $V_D = 12\text{ V}$ $R_L = 33\ \Omega$ Pulse duration > 20 μs | I-II-III | 2 | | 75 | mA |
| V_{GT} | $T_j = 25\text{ °C}$ $V_D = 12\text{ V}$ $R_L = 33\ \Omega$ Pulse duration > 20 μs | I-II-III | | | 1.5 | V |
| V_{GD} | $T_j = 125\text{ °C}$ $V_D = V_{DRM}$ $R_L = 3.3\text{ k}\Omega$ Pulse duration > 20 μs | I-II-III | 0.2 | | | V |
| I_H^* | $T_j = 25\text{ °C}$ $I_T = 100\text{ mA}$ Gate open $R_L = 140\ \Omega$ | | | | 75 | mA |
| I_L | $T_j = 25\text{ °C}$ $V_D = 12\text{ V}$ $I_G = 500\text{ mA}$ Pulse duration > 20 μs | I-III | | 75 | | mA |
| | | II | | 150 | | |
| V_{TM}^* | $T_j = 25\text{ °C}$ $I_{TM} = 17\text{ A}$ $t_p = 10\text{ ms}$ | | | | 1.6 | V |
| I_{DRM}^* | $T_j = 25\text{ °C}$ V_{DRM} rated $T_j = 125\text{ °C}$ Gate open | | | | 0.01 | mA |
| | | | | | 2 | |
| dv/dt^* | $T_j = 125\text{ °C}$ Gate open Linear slope up to 0.67 V_{DRM} | | 750 | 1000 | | V/ μs |
| $(di/dt)_c^*$ | $T_j = 125\text{ °C}$ V_{DRM} rated Without snubber | | 16 | 32 | | A/ms |
| t_{GI} | $T_j = 25\text{ °C}$ $di_G/dt = 3.5\text{ A}/\mu\text{s}$ $I_G = 500\text{ mA}$ $I_T = 17\text{ A}$ $V_D = V_{DRM}$ | I-II-III | | 2 | | μs |

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

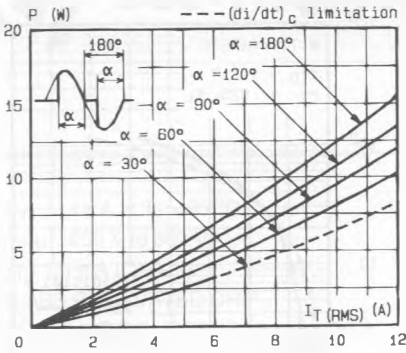


Fig.1 - Maximum mean power dissipation versus RMS on-state current (F = 60 Hz).

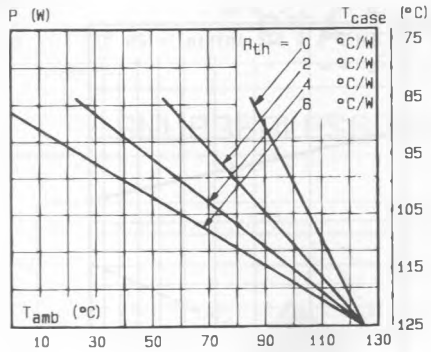


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact

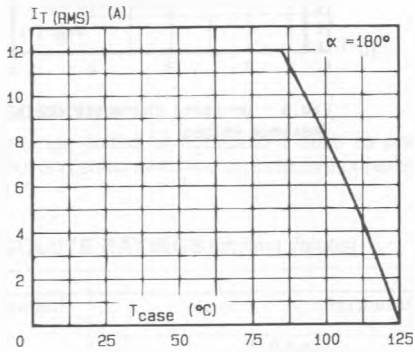


Fig.3 - RMS on-state current versus case temperature.

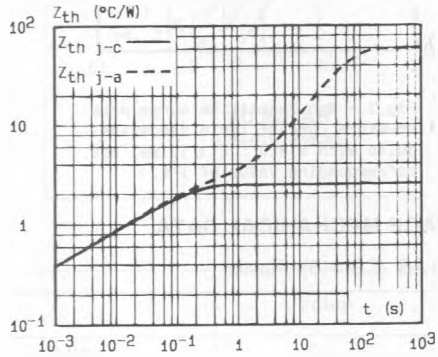


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

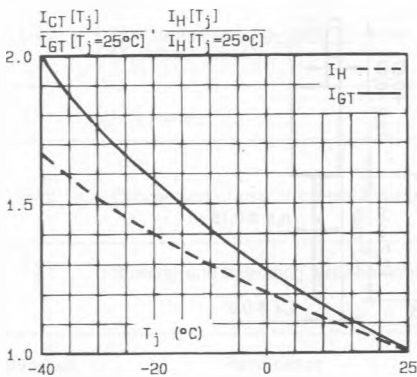


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

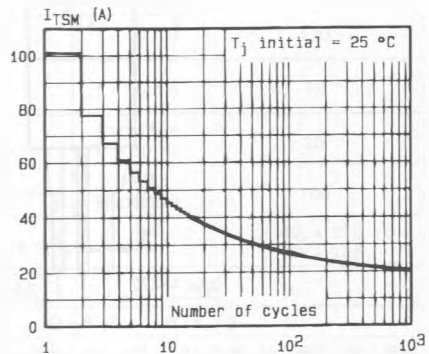


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

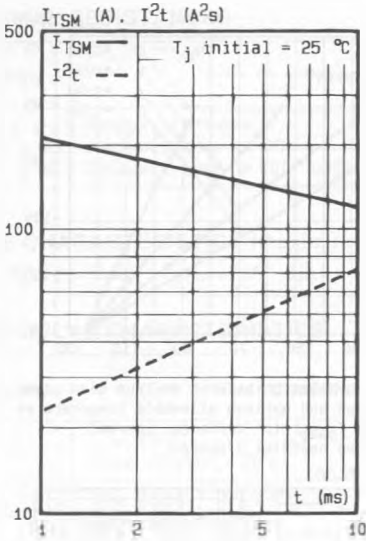


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

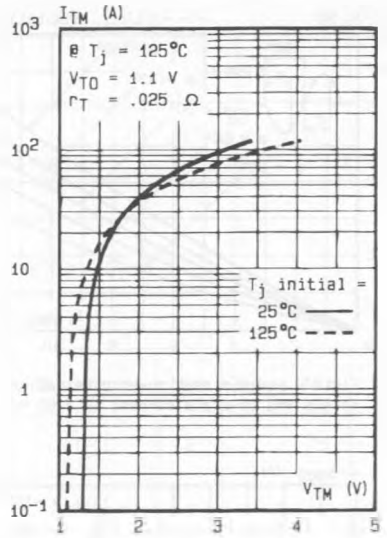
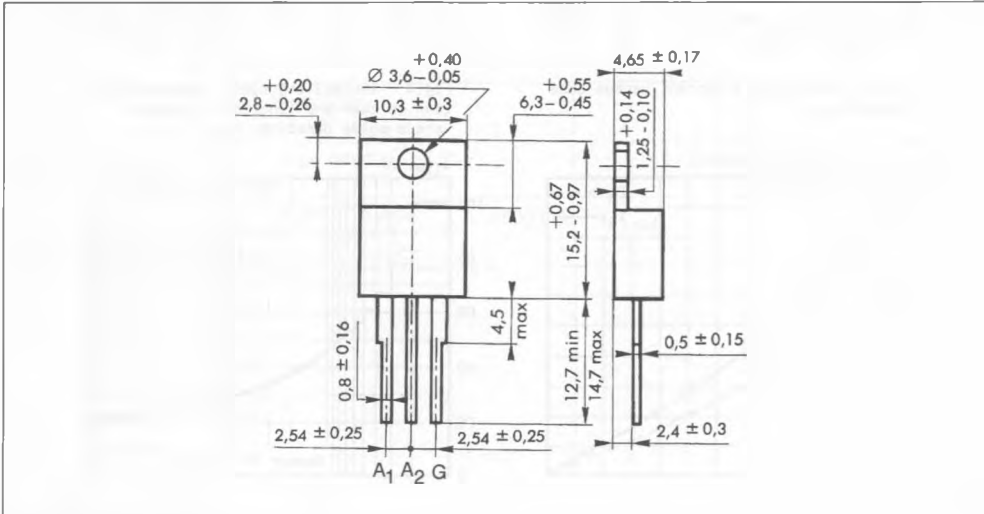


Fig.8 - On-state characteristics (maximum values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g