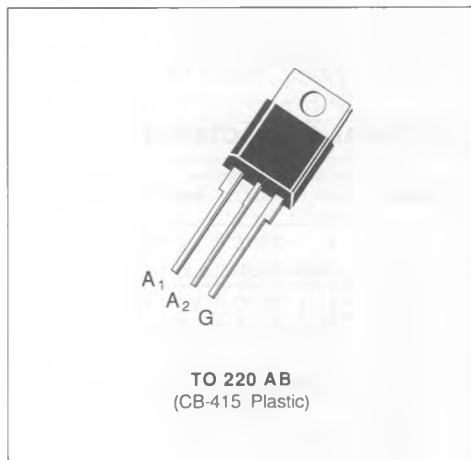


**SNUBBERLESS TRIACS**

- $I_{TRMS} = 10 \text{ A}$  at  $T_c = 90^\circ \text{C}$ .
- $V_{DRM} : 200 \text{ V}$  to  $800 \text{ V}$ .
- $I_{GT} = 35 \text{ mA}$  (QI-II-III).
- GLASS PASSIVATED CHIP.
- HIGH SURGE CURRENT :  $I_{TSM} = 100 \text{ A}$ .
- HIGH COMMUTATION CAPABILITY :  
 $(di/dt)_c > 5.5 \text{ A/ms}$  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)	$T_c = 90^\circ \text{C}$	10	A
$I_{TSM}$	Non repetitive surge peak on-state current ( $T_j$ initial = $25^\circ \text{C}$ )	$t = 8.3 \text{ ms}$	105	A
		$t = 10 \text{ ms}$	100	
$I^2 t$	$I^2 t$ value	$t = 10 \text{ ms}$	50	$\text{A}^2 \text{ s}$
$di/dt$	Critical rate of rise of on-state current (1)	Repetitive $F = 50 \text{ Hz}$	20	A / $\mu\text{s}$
		Non Repetitive	100	
$T_{sig}$ $T_j$	Storage and operating junction temperature range		- 40, + 150 - 40, + 125	$^\circ \text{C}$ $^\circ \text{C}$

Symbol	Parameter	BTA 10-					Unit
		200 CW	400 CW	600 CW	700 CW	800 CW	
$V_{DRM}$	Repetitive peak off-state voltage (2)	$\pm 200$	$\pm 400$	$\pm 600$	$\pm 700$	$\pm 800$	V

(1) Gate supply :  $I_G = 350 \text{ mA}$  -  $di_G / dt = 1 \text{ A} / \mu\text{s}$ .

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

**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 $\mu\text{s}$	I-II-III	1		35	mA
$V_{GT}$	$T_j = 25\text{ °C}$ $V_D = 12\text{ V}$ $R_L = 33\ \Omega$ Pulse duration > 20 $\mu\text{s}$	I-II-III			1.5	V
$V_{GD}$	$T_j = 125\text{ °C}$ $V_D = V_{D\text{DRM}}$ $R_L = 3.3\text{ k}\Omega$ Pulse duration > 20 $\mu\text{s}$	I-II-III	0.2			V
$I_H^*$	$T_j = 25\text{ °C}$ $I_T = 100\text{ mA}$ Gate open $R_L = 140\ \Omega$				35	mA
$I_L$	$T_j = 25\text{ °C}$ $V_D = 12\text{ V}$ $I_G = 350\text{ mA}$ Pulse duration > 20 $\mu\text{s}$	I-III			50	mA
		II			80	
$V_{TM}^*$	$T_j = 25\text{ °C}$ $I_{TM} = 14\text{ A}$ $t_p = 10\text{ ms}$				1.65	V
$I_{DRM}^*$	$T_j = 25\text{ °C}$ $V_{DRM}$ rated $T_j = 125\text{ °C}$ $V_{DRM}$ rated	Gate open			0.01	mA
					2	
$dv/dt^*$	$T_j = 125\text{ °C}$ Gate open Linear slope up to 0.67 $V_{DRM}$		250	500		V/ $\mu\text{s}$
$(di/dt)_c^*$	$T_j = 125\text{ °C}$ $V_{DRM}$ rated Without snubber		5.5	11		A/ms
$t_{gt}$	$T_j = 25\text{ °C}$ $di_G/dt = 1\text{ A}/\mu\text{s}$ $I_G = 350\text{ mA}$ $I_T = 14\text{ A}$ $V_D = V_{DRM}$	I-II-III		2		$\mu\text{s}$

\* For either polarity of electrode A<sub>2</sub> voltage with reference to electrode A<sub>1</sub>.

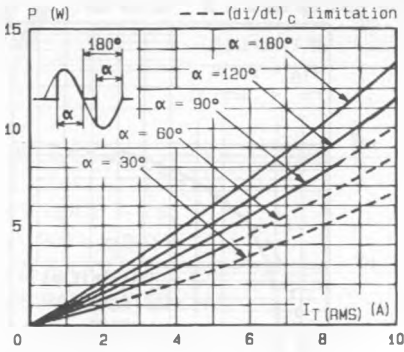


Fig. 1 - Maximum mean power dissipation versus RMS on-state current ( $F = 60 \text{ Hz}$ ).

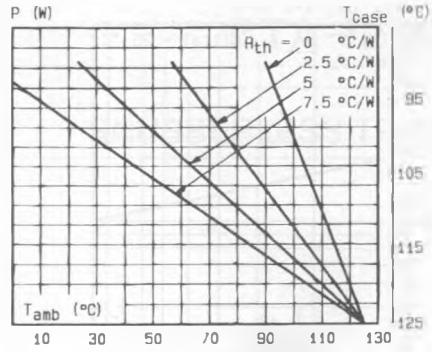


Fig. 2 - Correlation between maximum mean power dissipation and maximum allowable temperatures ( $T_{amb}$  and  $T_{case}$ ) for different thermal resistances heatsink + contact.

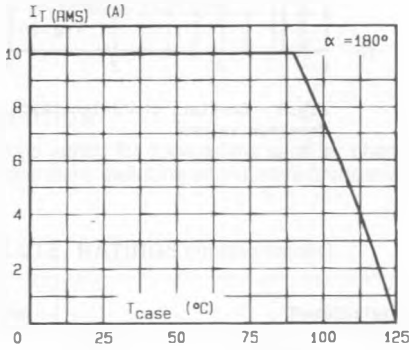


Fig. 3 - RMS on-state current versus case temperature.

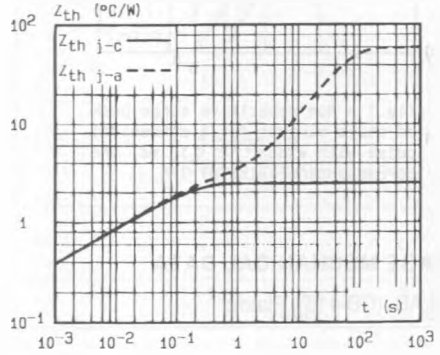


Fig. 4 Thermal transient impedance junction to case and junction to ambient versus pulse duration.

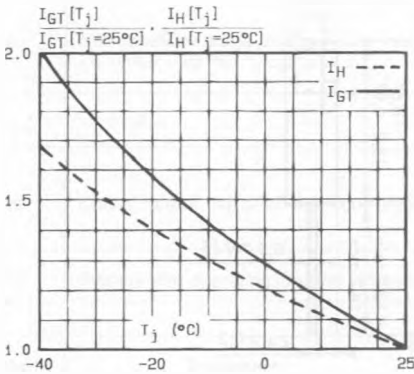


Fig. 5 - Relative variation of gate trigger current and holding current versus junction temperature.

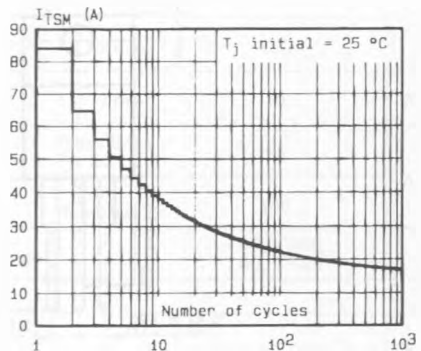


Fig. 6 Non repetitive surge peak on state current versus number of cycles.

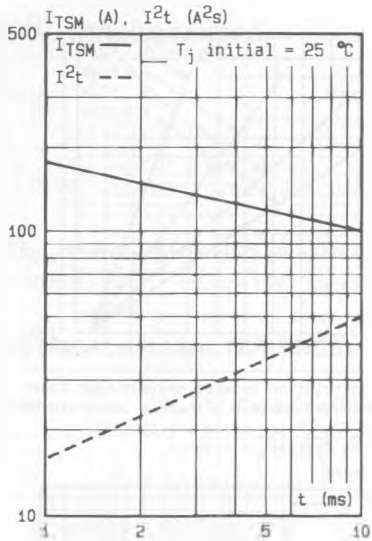


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t \leq 10$  ms, and corresponding value of  $I^2t$ .

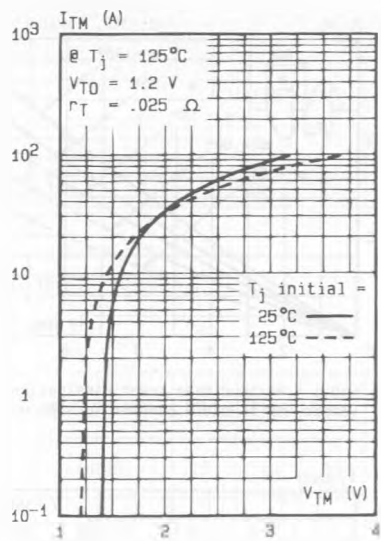
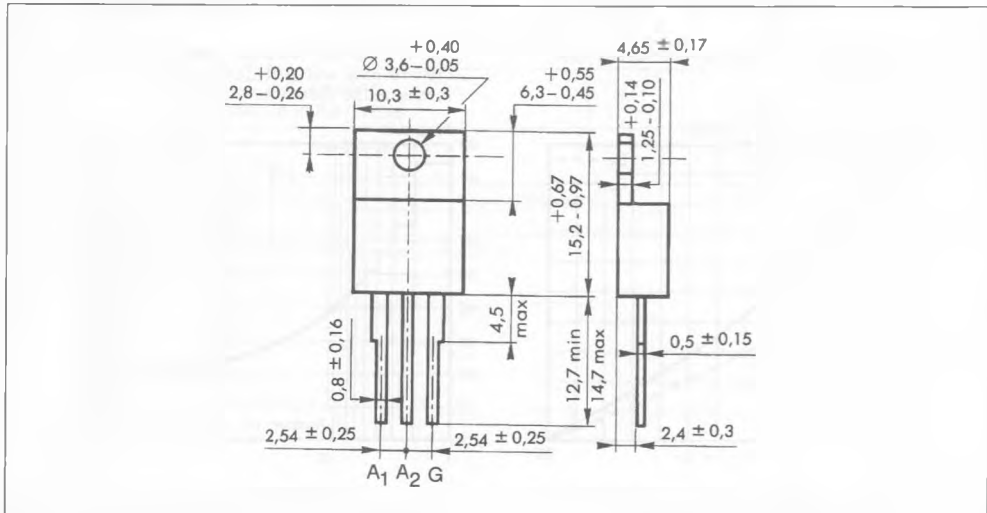


Fig.8 - On-state characteristics (maximum values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)  
 Marking : type number  
 Weight : 2 g