

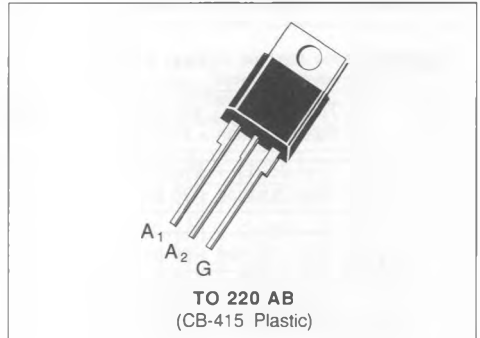


LOGIC LEVEL TRIACS

- $I_{TRMS} = 8 \text{ A}$ at $T_c = 80^\circ \text{C}$.
- $V_{DRM} : 200 \text{ V}$ to 800 V .
- $I_{GT} = 5 \text{ mA}$ (QI-II-III).
- $(di/dt)_c = 3.5 \text{ A/ms}$ @ $(dv/dt)_c = 20 \text{ V}/\mu\text{s}$.
- 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)	$T_c = 80^\circ \text{C}$	8	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t = 8.3 \text{ ms}$	95	A
		$t = 10 \text{ ms}$	85	
$I^2 t$	$I^2 t$ value	$t = 10 \text{ ms}$	36	$\text{A}^2 \text{s}$
di/dt	Critical rate of rise of on-state current (1)	Repetitive $F = 50 \text{ Hz}$	20	$\text{A}/\mu\text{s}$
		Non Repetitive	100	
T_{sig} T_j	Storage and operating junction temperature range		- 40, + 150 - 40, + 110	$^\circ \text{C}$ $^\circ \text{C}$

Symbol	Parameter	BTA/BTB 08-					Unit
		200 TW	400 TW	600 TW	700 TW	800 TW	
V_{DRM}	Repetitive peak off-state voltage (2)	± 200	+ 400	± 600	± 700	± 800	V

(1) Gate supply : $I_G = 50 \text{ mA}$ - $di_G/dt = 1 \text{ A}/\mu\text{s}$.

(2) $T_j = 110^\circ \text{C}$.

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient	60	$^{\circ}\text{C/W}$
$R_{th(j-c)} \text{ DC}$	Junction to case for DC	3.5	$^{\circ}\text{C/W}$
$R_{th(j-c)} \text{ AC}$	Junction to case for 360 ° conduction angle (F = 50 Hz)	2.6	$^{\circ}\text{C/W}$

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}	$T_j = 25\text{ }^{\circ}\text{C}$ Pulse duration > 20 μs		$V_D = 12\text{ V}$ $R_L = 33\text{ }\Omega$	I-II-III			5	mA
V_{GT}	$T_j = 25\text{ }^{\circ}\text{C}$ Pulse duration > 20 μs		$V_D = 12\text{ V}$ $R_L = 33\text{ }\Omega$	I-II-III			1.5	V
V_{GD}	$T_j = 110\text{ }^{\circ}\text{C}$ Pulse duration > 20 μs		$V_D = V_{\text{DRM}}$ $R_L = 3.3\text{ k}\Omega$	I-II-III	0.2			V
I_H^*	$T_j = 25\text{ }^{\circ}\text{C}$ Gate open	$I_T = 100\text{ mA}$ $R_L = 140\text{ }\Omega$					15	mA
I_L	$T_j = 25\text{ }^{\circ}\text{C}$ Pulse duration > 20 μs		$V_D = 12\text{ V}$ $R_L = 33\text{ }\Omega$ $I_G = 25\text{ mA}$	I-III		15		mA
				II		30		
V_{TM}^*	$T_j = 25\text{ }^{\circ}\text{C}$	$I_{TM} = 11\text{ A}$	$t_p = 10\text{ ms}$				1.75	V
I_{DRM}^*	$T_j = 25\text{ }^{\circ}\text{C}$	V_{DRM} rated	Gate open				10	μA
	$T_j = 110\text{ }^{\circ}\text{C}$					500		
dv/dt^*	$T_j = 110\text{ }^{\circ}\text{C}$ Linear slope up to 0.67 V_{DRM}		Gate open		20			V/ μs
$(di/dt)_c^*$	$T_j = 110\text{ }^{\circ}\text{C}$	$(dv/dt)_c = 0.1\text{ V}/\mu\text{s}$			3.5	5		A/ms
	$T_j = 110\text{ }^{\circ}\text{C}$	$(dv/dt)_c = 20\text{ V}/\mu\text{s}$			1.8	3.5		
t_{gt}	$T_j = 25\text{ }^{\circ}\text{C}$ $I_T = 11\text{ A}$	$di_G/dt = 1\text{ A}/\mu\text{s}$ $V_D = V_{\text{DRM}}$	$I_G = 25\text{ mA}$	I-II-III		2		μs

* For either polarity of electrode A_2 voltage with reference to electrode A_1 .

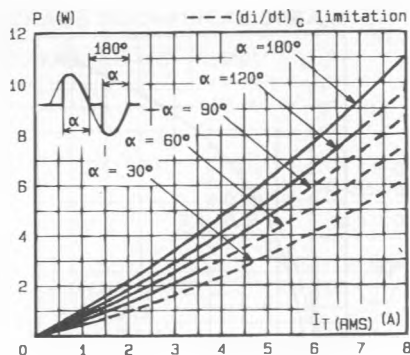


Fig.1 - Maximum mean power dissipation versus RMS on-state current ($F = 60$ Hz).

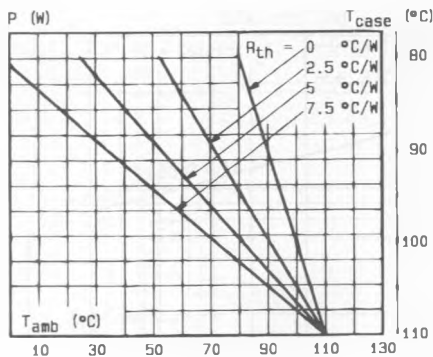


Fig.2 - Correlation between maximum mean power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

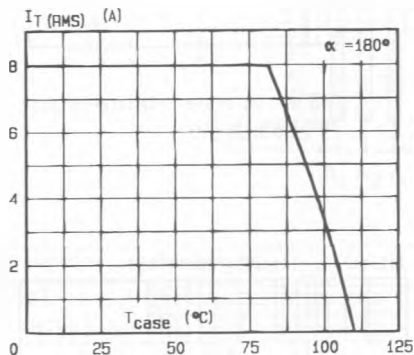


Fig.3 - RMS on-state current versus case temperature.

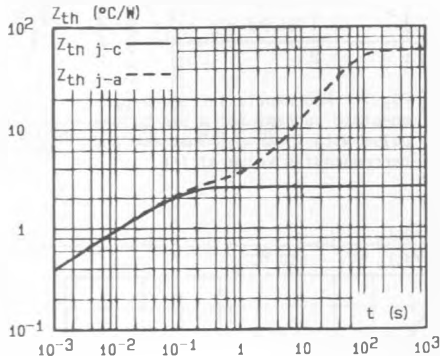


Fig.4 - Thermal transient impedance junction to case and junction to ambient versus pulse duration.

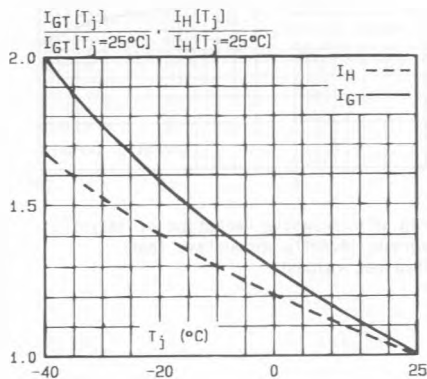


Fig.5 - Relative variation of gate trigger current and holding current versus junction temperature.

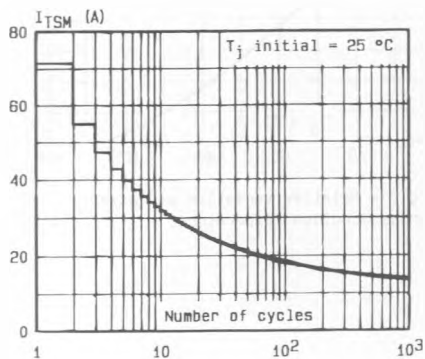


Fig.6 - Non repetitive surge peak on-state current versus number of cycles.

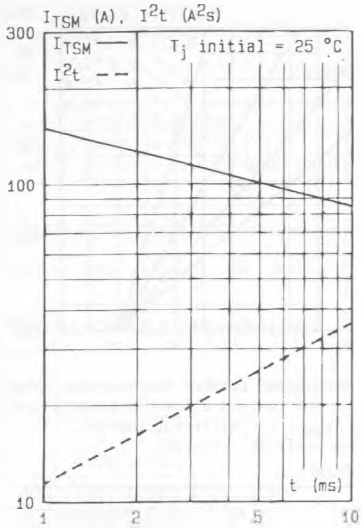


Fig.7 - Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

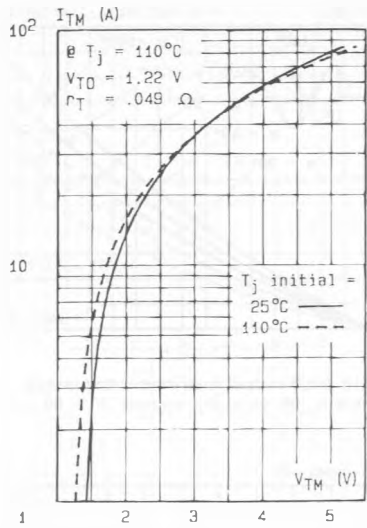


Fig.8 - On state characteristics (maximum values).

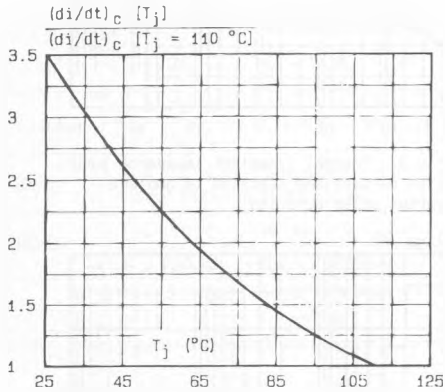


Fig.9 - Relative variation of $(di/dt)_C$ versus junction temperature.

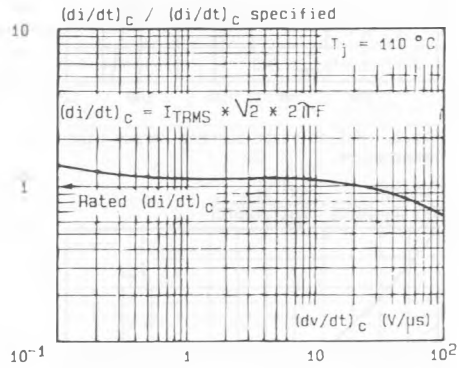
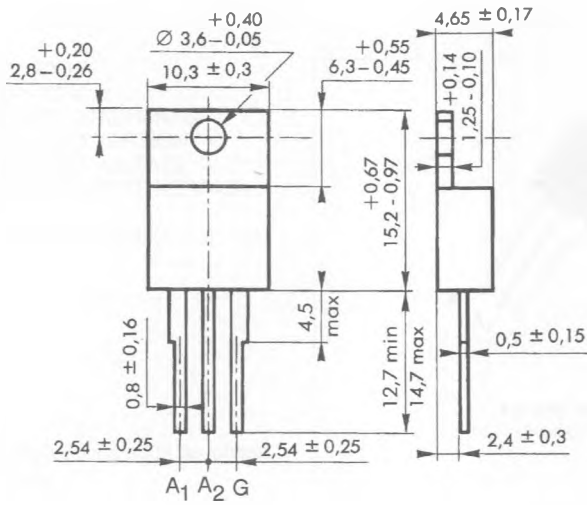


Fig.10 - Relative variation of $(di/dt)_C$ versus $(dv/dt)_C$ (inductive load) (typical values).

PACKAGE MECHANICAL DATA

TO 220 AB (CB-415) Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g