



# POWER SKY (H.K.) LTD.

## TO-220 Plastic-Encapsulate Transistors

### BTB06 TRIAC

#### MAIN FEATURES

Symbol	value	unit
$I_{T(RMS)}$	6	A
$V_{DRM}/V_{RRM}$	600 and 800	V
$I_{GT(Q1)}$	5 to 50	mA

#### DESCRIPTION

Suitable for AC switching operations, the BTB06 series can be used as an ON/OFF function in applications such as static relays, heating regulation, induction motor starting circuits... or for phase control in light dimmers, motor speed controllers,...

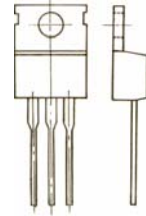
The snubberless versions are specially recommended for use on inductive loads, thanks to their high commutation performances. Logic level versions are designed to interface directly with low power drivers such as microcontrollers.

#### ABSOLUTE MAXIMUM RATINGS

symbol	parameter	value	unit
$I_{T(RMS)}$	RMS on-state current(full sine wave)	D <sup>2</sup> PAK/TO-220AB $T_C=110^{\circ}C$	6 A
		TO-220 ins. $T_C=105^{\circ}C$	
$I_{TSM}$	Non repetitive surge peak on-state current (full cycle, $T_j$ initial= $25^{\circ}C$ )	F=50Hz t=20ms	60 A
		F=60Hz t=16.7ms	
$I_{GM}$	Peak gate current	tp=20us $T_j=125^{\circ}C$	4 A
$P_{G(AV)}$	Average gate power dissipation	$T_j=125^{\circ}C$	1 W
$T_{stg}$	Storage junction temperature range		-40 to +150 $^{\circ}C$
$T_j$	Operating junction temperature range		-40 to +125 $^{\circ}C$

#### TO-220

1. ANODE
2. ANODE
3. GATE

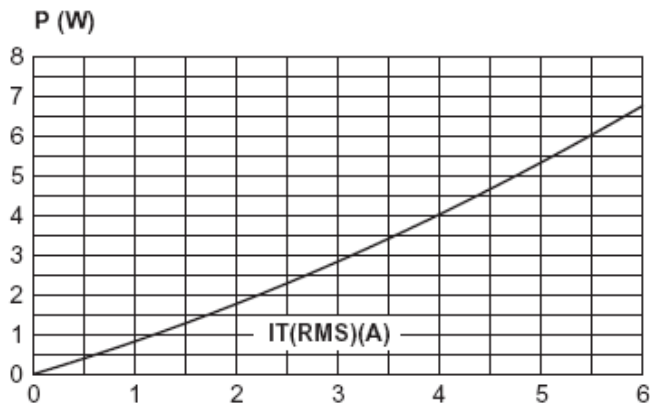


1 2 3  
A1 A2 G

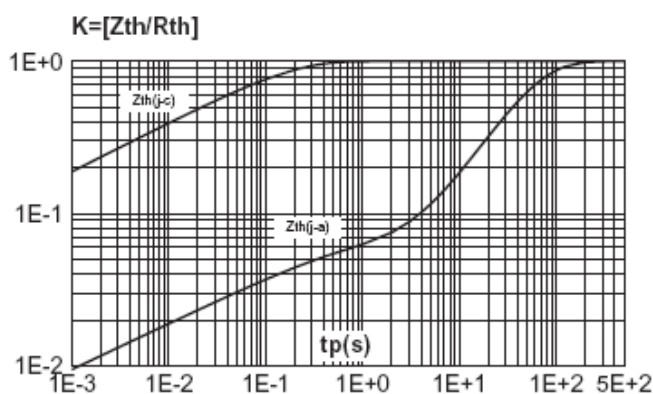
#### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Rated repetitive peak off-state voltage	$V_{DRM}, V_{RRM}$	$I_D=10 \mu A$	600		V
Rated repetitive peak off-state current	$I_{DRM}, I_{RRM}$	$V_D=520V$		10	$\mu A$
On-state voltage	$V_{TM}$	$I_T=8A$		1.7	V
Gate trigger current	$I_{GT}$	$V_D=12V$ $R_L=100 \Omega$	I $T_2(+), G(+)$	25	mA
			II $T_2(+), G(-)$	25	mA
			III $T_2(-), G(-)$	25	mA
			IV $T_2(-), G(+)$	-	mA
Gate trigger voltage	$V_{GT}$	$V_D=12V$ $R_L=100 \Omega$	I $T_2(+), G(+)$	1.45	V
			II $T_2(+), G(-)$	1.45	V
			III $T_2(-), G(-)$	1.45	V
			IV $T_2(-), G(+)$	-	V
Holding current	$I_H$	$I_T=500mA$ $I_G=50mA$		50	mA

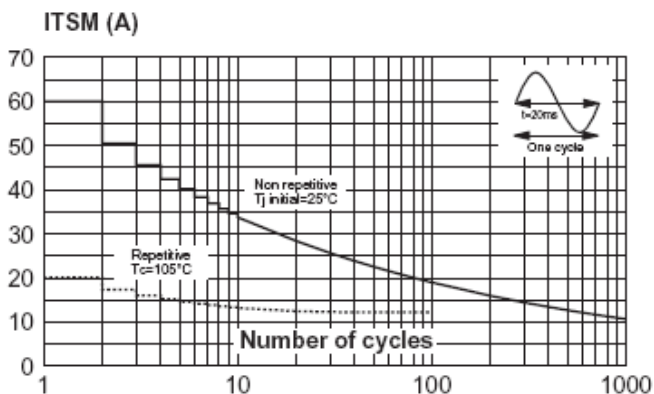
**Fig. 1:** Maximum power dissipation versus RMS on-state current (full cycle).



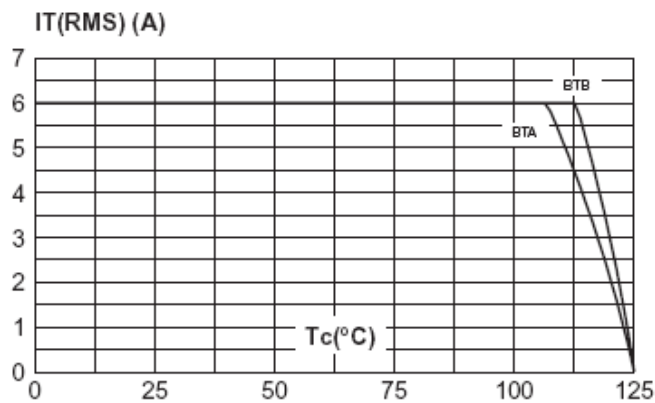
**Fig. 3:** Relative variation of thermal impedance versus pulse duration.



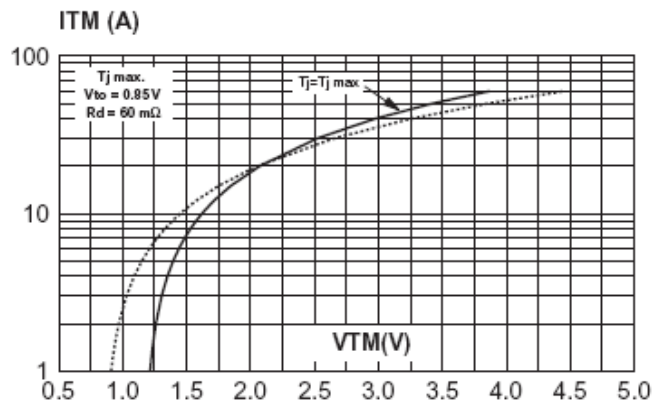
**Fig. 5:** Surge peak on-state current versus number of cycles.



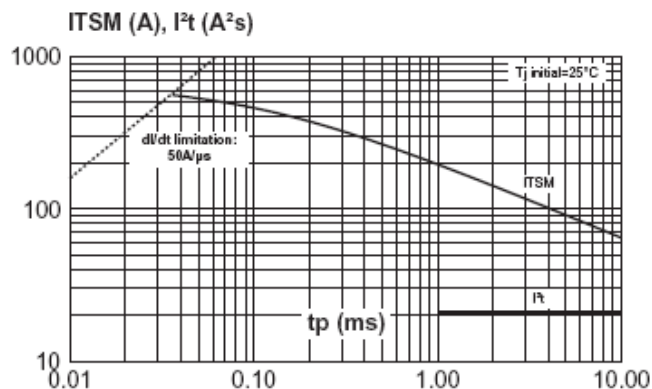
**Fig. 2:** RMS on-state current versus case temperature (full cycle).



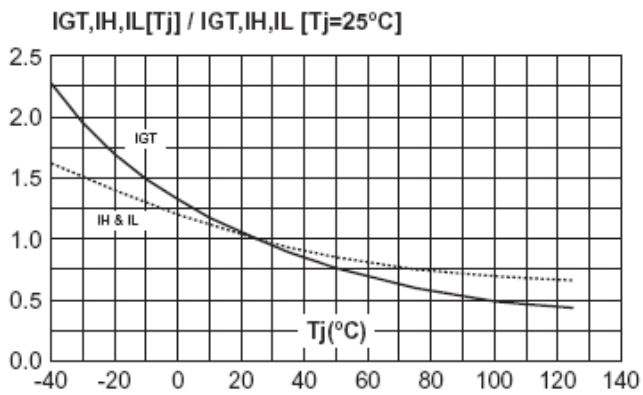
**Fig. 4:** On-state characteristics (maximum values).



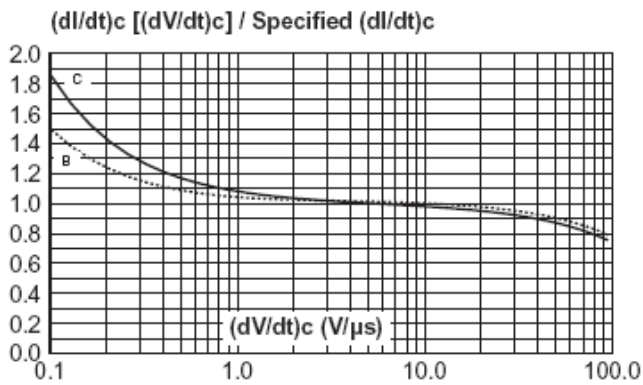
**Fig. 6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .



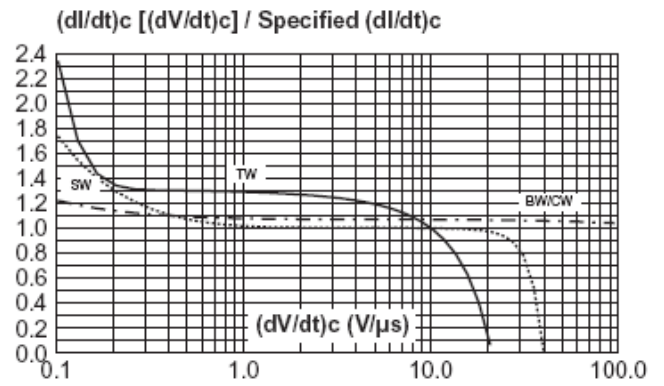
**Fig. 7:** Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



**Fig. 8-2:** Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values). Standard Types



**Fig. 8-1:** Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values). Snubberless & Logic Level Types



**Fig. 9:** Relative variation of critical rate of decrease of main current versus junction temperature.

