

**DESCRIPTION:**

The BTB06-600C SCR series with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc.



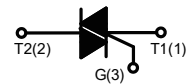
TO-251



TO-220A



TO-220F


**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	6	A
$V_{DRM} / V_{RRM}$	600/800	V

**ABSOLUTE MAXIMUM RATINGS**

Parameter		Symbol	Value	Unit
Storage junction temperature range		$T_{stg}$	-40 - 150	°C
Operating junction temperature range		$T_j$	-40 - 125	°C
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )		$V_{DRM}$	600/800	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )		$V_{RRM}$	600/800	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins)/ TO-251 ( $T_C=100^\circ\text{C}$ )	$I_{T(RMS)}$	6	A
	TO-220A(Non-Ins) ( $T_C=105^\circ\text{C}$ )			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		$I_{TSM}$	60	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )		$I^2t$	18	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	I - II - III	$di/dt$	50	A/ $\mu\text{s}$
	IV		10	

Peak gate current	$I_{GM}$	2	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	$P_{GM}$	5	W

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^\circ\text{C}$  unless otherwise specified)

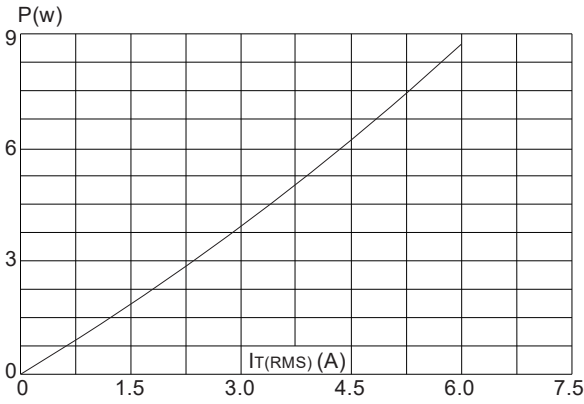
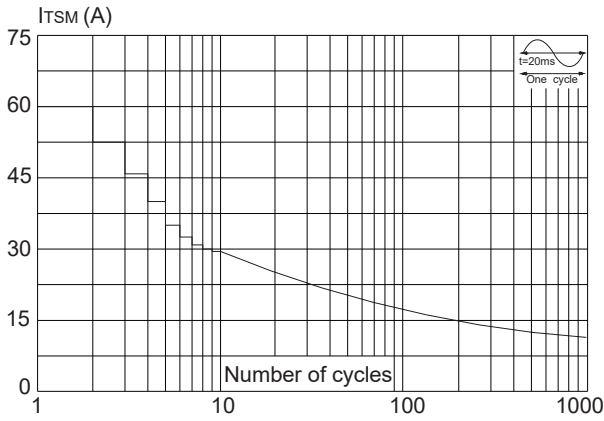
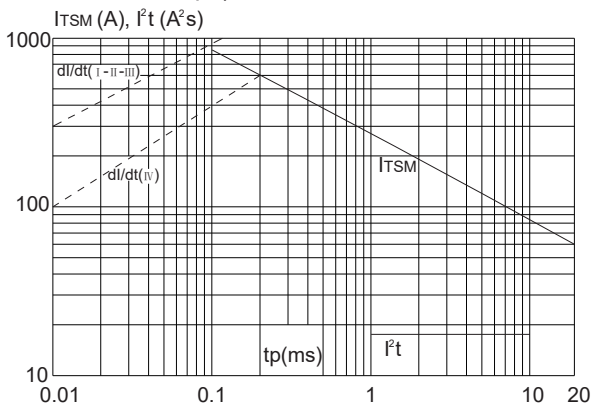
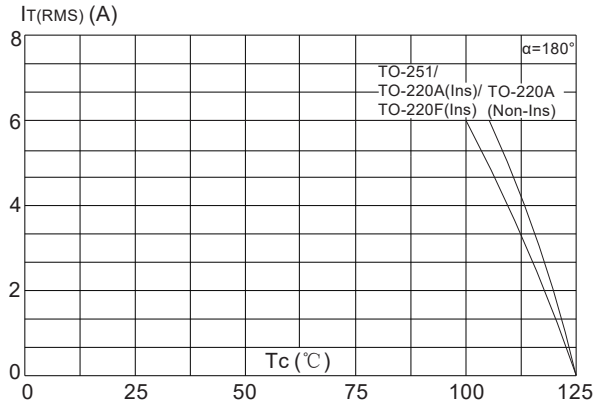
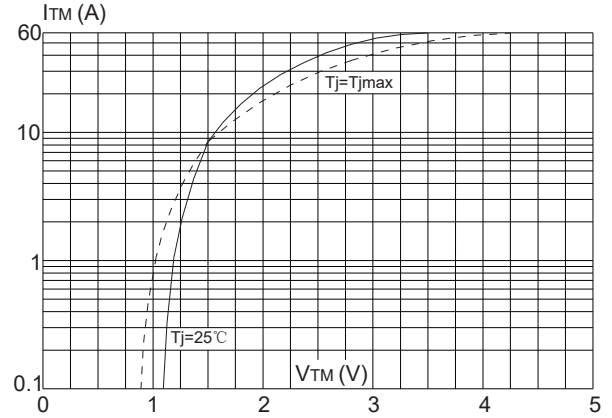
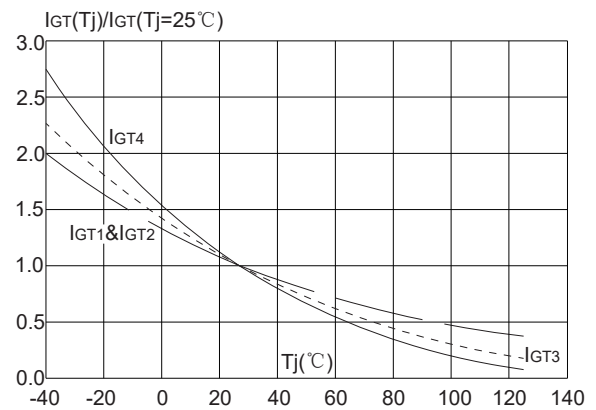
Symbol	Test Condition	Quadrant		Value		Unit
				C	B	
$I_{GT}$	$V_D=12V R_L=30\Omega$	I - II - III	MAX	25	50	mA
		IV		50	70	
$V_{GT}$		ALL	MAX	1.5		V
$V_{GD}$	$V_D=V_{DRM} T_j=125^\circ\text{C}$ $R_L=3.3K\Omega$	ALL	MIN	0.2		V
$I_L$	$I_G=1.2I_{GT}$	I - III - IV	MAX	50	70	mA
		II		60	80	
$I_H$	$I_{TM}=0.2A$		MAX	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	200	500	V/ $\mu\text{s}$

**STATIC CHARACTERISTICS**

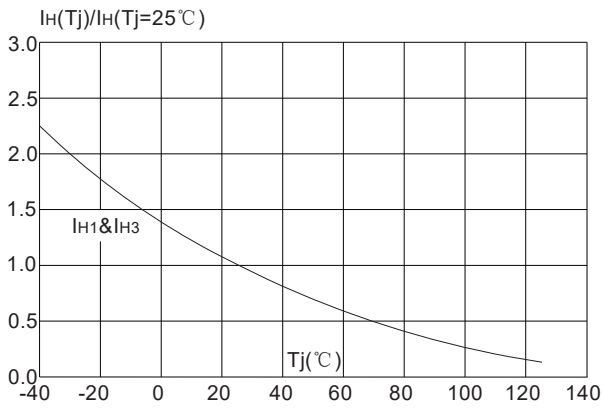
Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=8.5A t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.5	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^\circ\text{C}$	1	mA

**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.9	$^\circ\text{C/W}$
		TO-220F(Ins)		
		TO-220A(Non-Ins) 2.3	2.7	
		TO-251		

**FIG.1: Maximum power dissipation versus RMS on-state current**

**FIG.3: Surge peak on-state current versus number of cycles**

**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( I - II - III:  $di/dt < 50\text{A}/\mu\text{s}$ ; IV:  $di/dt < 10\text{A}/\mu\text{s}$ )**

**FIG.2: RMS on-state current versus case temperature**

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

**FIG.6: Relative variations of gate trigger current versus junction temperature**


**FIG.7:** Relative variations of holding current versus junction temperature



**FIG.8:** Relative variations of latching current versus junction temperature

