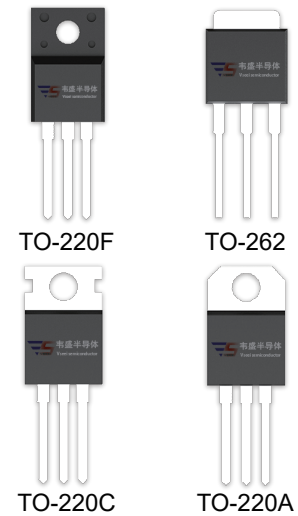
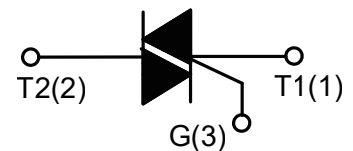


**DESCRIPTION:**

The BTB16-800C SCR series with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc.


**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
$V_{DRM}/V_{RRM}$	600/800/1200	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 ( $T_j=25^\circ\text{C}$ )		$V_{DRM}$	600/800/1200	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )		$V_{RRM}$	600/800/1200	V
Non repetitive surge peak Off-state voltage		$V_{DSM}$	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage		$V_{RSM}$	$V_{RRM} + 100$	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins) ( $T_c=75^\circ\text{C}$ )	$I_{T(RMS)}$	16	A
	TO-220A(Non-Ins)/ TO-220C ( $T_c=95^\circ\text{C}$ )			
	TO-262 ( $T_c=70^\circ\text{C}$ )			
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$ )		$I_{TSM}$	160	A

I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	128	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> =2×I <sub>GT</sub> )	dI/dt	50	A/μs
Peak gate current	I <sub>GM</sub>	4	A
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Peak gate power	P <sub>GM</sub>	5	W

**ELECTRICAL CHARACTERISTICS** (T<sub>j</sub>=25°C unless otherwise specified)

**3 Quadrants**

Symbol	Test Condition	Quadrant		Value				Unit
				BW	CW	SW	TW	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	I - II -III	MAX	50	35	10	5	mA
V <sub>GT</sub>		I - II -III	MAX	1.3				V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C R <sub>L</sub> =3.3KΩ	I - II -III	MIN	0.2				V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	I -III	MAX	70	50	30	15	mA
		II		80	60	40	20	
I <sub>H</sub>	I <sub>T</sub> =100mA		MAX	60	40	25	15	mA
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>j</sub> =125°C		MIN	1000	500	200	100	V/μs

**4 Quadrants**

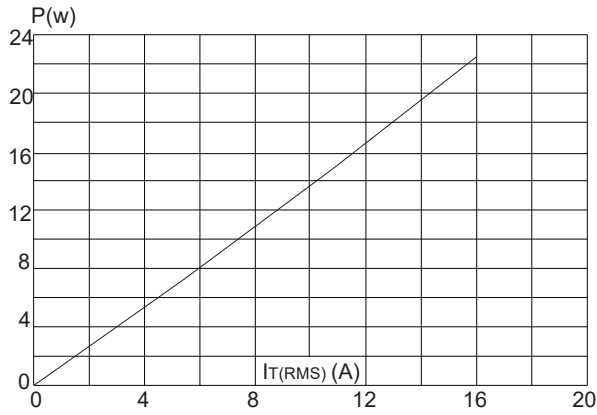
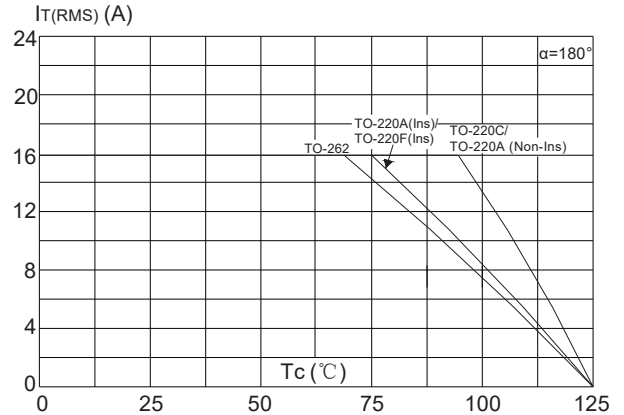
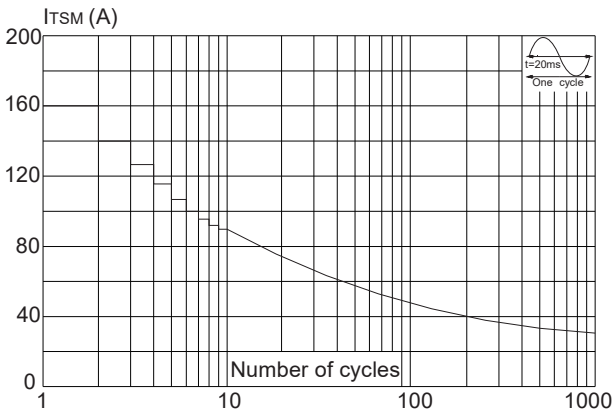
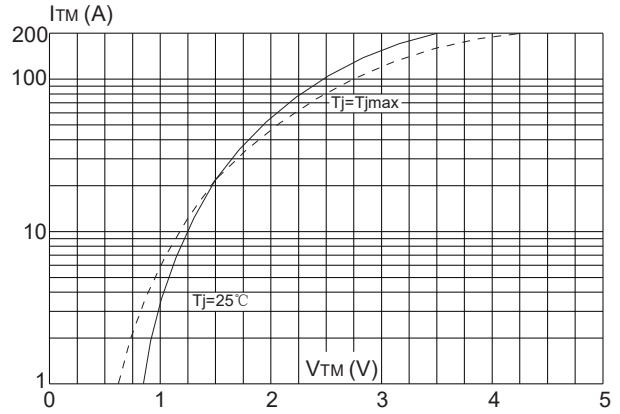
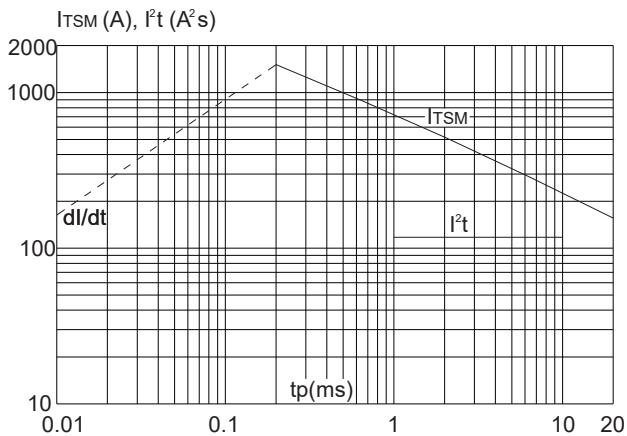
Symbol	Test Condition	Quadrant		Value		Unit
				B	C	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	I - II -III	MAX	50	25	mA
		IV		70	50	
V <sub>GT</sub>		ALL	MAX	1.5		V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C R <sub>L</sub> =3.3KΩ	ALL	MIN	0.2		V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	I -III-IV	MAX	70	50	mA
		II		100	80	
I <sub>H</sub>	I <sub>T</sub> =100mA		MAX	60	40	mA
dV/dt	V <sub>D</sub> =2/3V <sub>DRM</sub> Gate Open T <sub>j</sub> =125°C		MIN	500	200	V/μs

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)			Unit
			-600V	-800V	-1200V	
$V_{TM}$	$I_{TM}=22.5A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.5			V
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	5	10	$\mu A$
$I_{RRM}$		$T_j=125^\circ C$	1	1	2	mA

**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	2.1	$^\circ C/W$
		TO-220A(Non-Ins)/ TO-220C	1.2	
		TO-220F(Ins)	2.3	
		TO-262	2.5	

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

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

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

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

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

**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature
