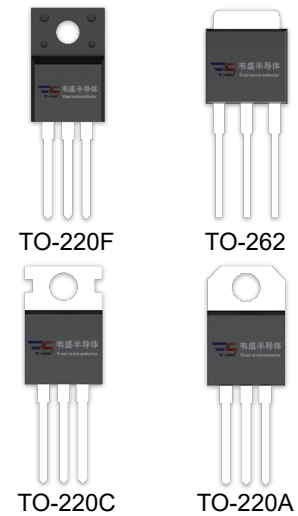
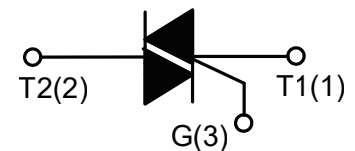


DESCRIPTION:

The BTB16-600C 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 ² t value for fusing (tp=10ms)	I ² t	128	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT})	dI/dt	50	A/μs
Peak gate current	I _{GM}	4	A
Average gate power dissipation	P _{G(AV)}	1	W
Peak gate power	P _{GM}	5	W

ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				BW	CW	SW	TW	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	50	35	10	5	mA
V _{GT}		I - II -III	MAX	1.3				V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	I - II -III	MIN	0.2				V
I _L	I _G =1.2I _{GT}	I -III	MAX	70	50	30	15	mA
		II		80	60	40	20	
I _H	I _T =100mA		MAX	60	40	25	15	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =125°C		MIN	1000	500	200	100	V/μs

4 Quadrants

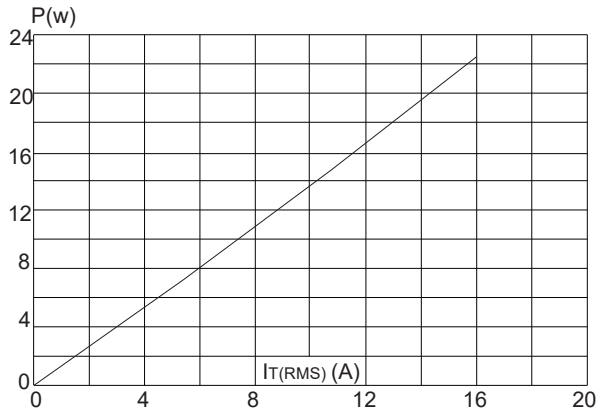
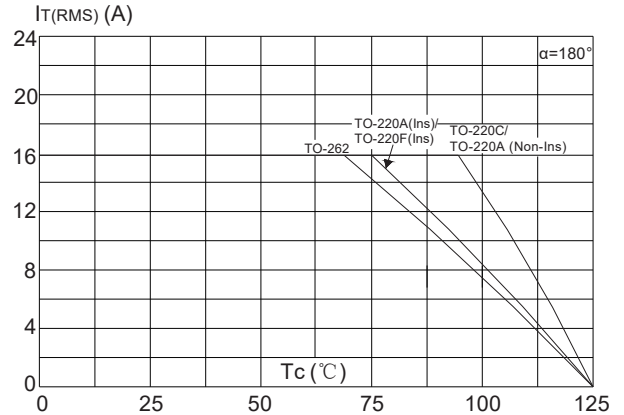
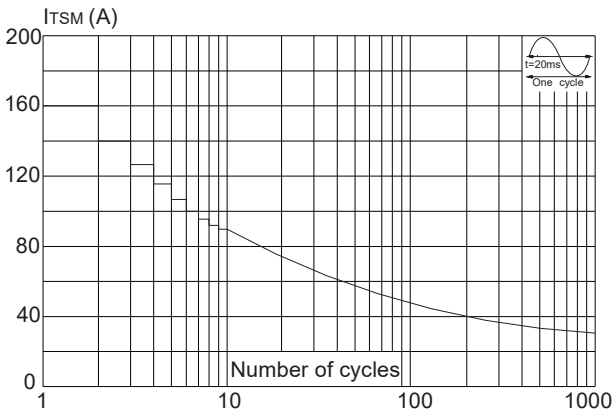
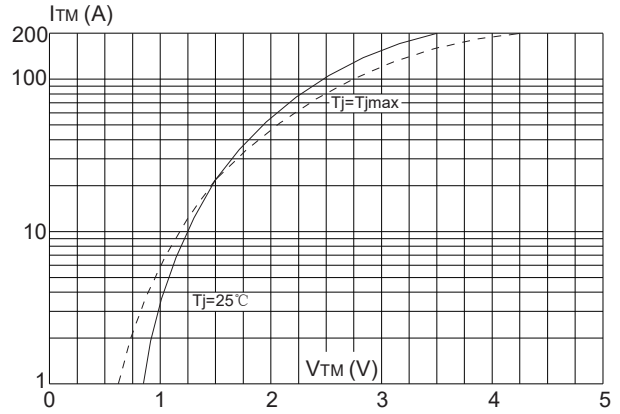
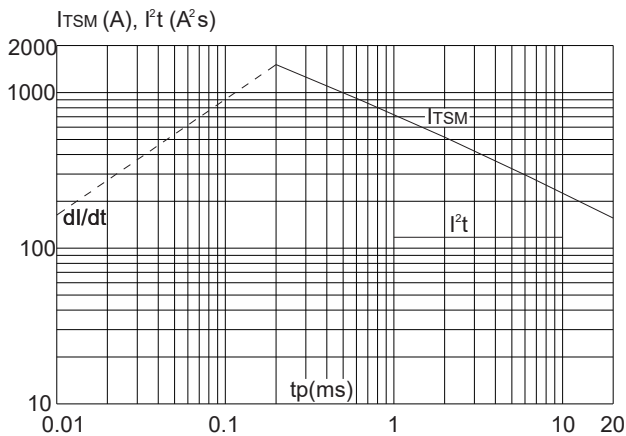
Symbol	Test Condition	Quadrant		Value		Unit
				B	C	
I _{GT}	V _D =12V R _L =33Ω	I - II -III	MAX	50	25	mA
		IV		70	50	
V _{GT}		ALL	MAX	1.5		V
V _{GD}	V _D =V _{DRM} T _j =125°C R _L =3.3KΩ	ALL	MIN	0.2		V
I _L	I _G =1.2I _{GT}	I -III-IV	MAX	70	50	mA
		II		100	80	
I _H	I _T =100mA		MAX	60	40	mA
dV/dt	V _D =2/3V _{DRM} Gate Open T _j =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	μA
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
