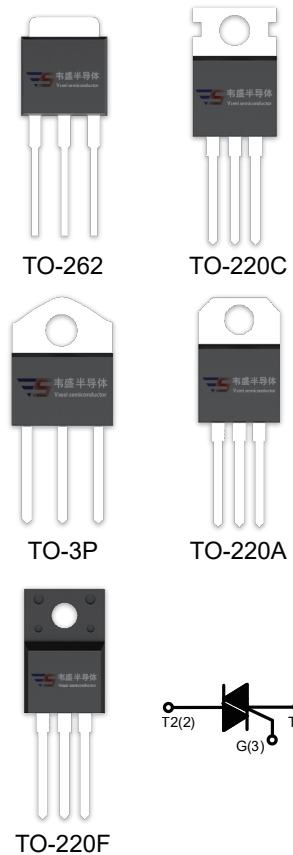


**DESCRIPTION:**

The BTB24-800B 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
$I_{T(RMS)}$	25	A
$V_{DRM} / V_{RRM}$	600/800/1200/1600	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 ( $T_j=25^\circ\text{C}$ )		$V_{DRM}$	600/800/1200/1600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )		$V_{RRM}$	600/800/1200/1600	V
RMS on-state current	TO-220A(Ins)/ TO-220F(Ins) ( $T_c=70^\circ\text{C}$ )	$I_{T(RMS)}$	25	A
	TO-220C/ TO-220A(Non-Ins) ( $T_c=85^\circ\text{C}$ )			
	TO-262 ( $T_c=50^\circ\text{C}$ )			
	TO-3P(Ins) ( $T_c=95^\circ\text{C}$ )			
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$ )		$I_{TSM}$	250	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )		$I^2t$	340	$\text{A}^2\text{s}$

Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di/dt$	50	A/ $\mu$ s
Peak gate current	$I_{GM}$	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	$P_{GM}$	10	W

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

 $V_{DRM}/V_{RRM}$ : 600/800V

Symbol	Test Condition	Quadrant		JST24-600/800V		Unit
				BW	CW	
$I_{GT}$	$V_D = 12V$ $R_L = 33\Omega$	I - II - III	MAX	50	35	mA
$V_{GT}$		I - II - III	MAX	1.3		V
$V_{GD}$	$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3K\Omega$	I - II - III	MIN	0.2		V
$I_L$	$I_G = 1.2I_{GT}$	I - III	MAX	80	70	mA
		II		100	80	
$I_H$	$I_T = 100\text{mA}$		MAX	75	50	mA
$dV/dt$	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	1000	500	V/ $\mu$ s

 $V_{DRM}/V_{RRM}$ : 1200/1600V

Symbol	Test Condition	Quadrant		JST24-1200V/1600V		Unit
				BW	CW	
$I_{GT}$	$V_D = 12V$ $R_L = 33\Omega$	I - II - III	MAX	50	35	mA
$V_{GT}$		I - II - III	MAX	1.5		V
$V_{GD}$	$V_D = V_{DRM}$ $T_j = 125^\circ\text{C}$ $R_L = 3.3K\Omega$	I - II - III	MIN	0.2		V
$I_L$	$I_G = 1.2I_{GT}$	I - III	MAX	90	70	mA
		II		100	80	
$I_H$	$I_T = 100\text{mA}$		MAX	80	60	mA
$dV/dt$	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ\text{C}$		MIN	1500	1000	V/ $\mu$ s

$V_{DRM}/V_{RRM}: 600/800V$ 

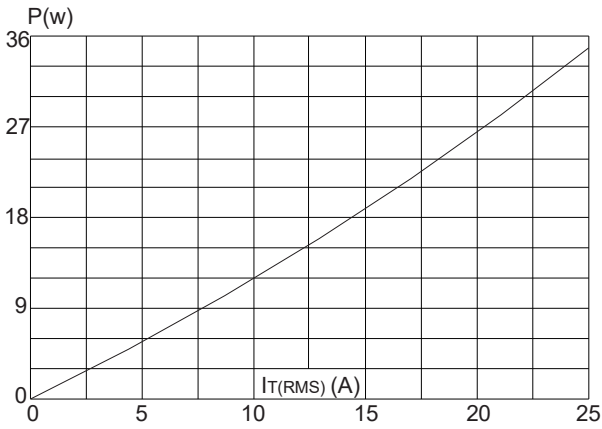
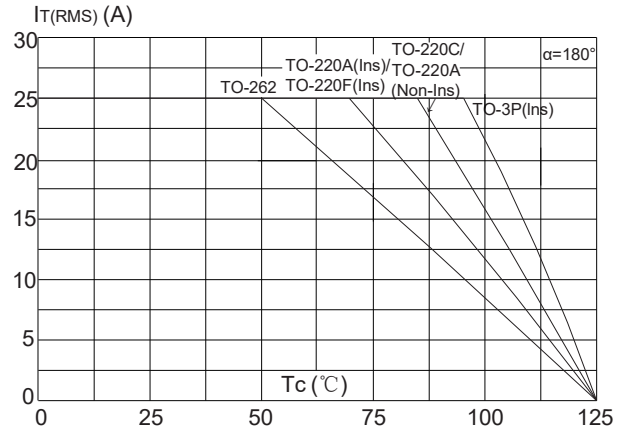
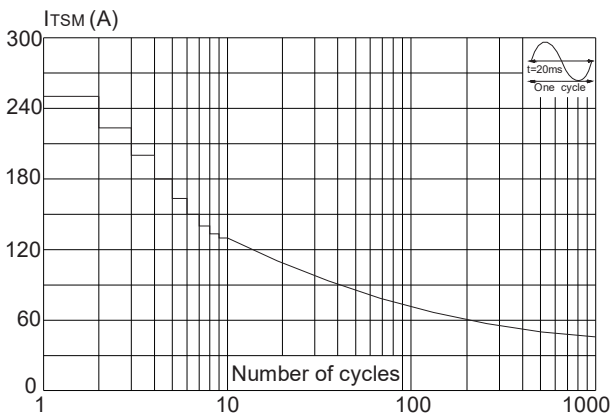
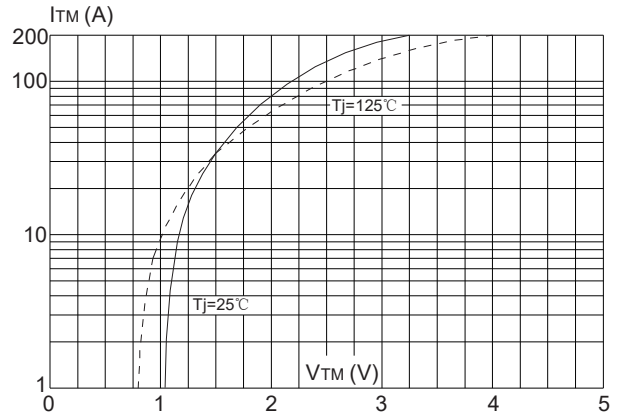
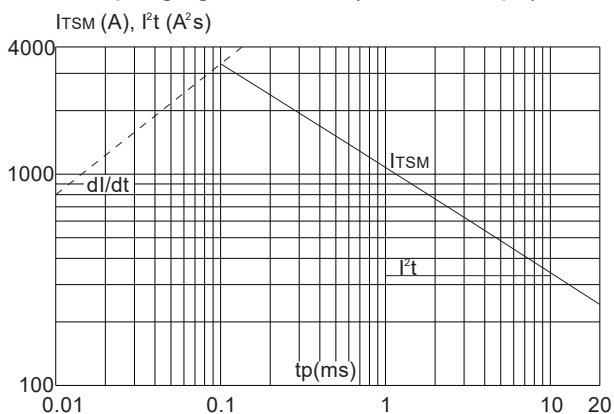
Symbol	Test Condition	Quadrant	JST24-600/800V		Unit	
			B	C		
$I_{GT}$	$V_D = 12V R_L = 33\Omega$	I - II - III	MAX	50	25	mA
		IV		70	50	
$V_{GT}$		ALL	MAX	1.3		V
$V_{GD}$	$V_D = V_{DRM} T_j = 125^\circ C$ $R_L = 3.3K\Omega$	ALL	MIN	0.2		V
$I_L$	$I_G = 1.2I_{GT}$	I - III - IV	MAX	80	70	mA
		II		100	90	
$I_H$	$I_T = 100mA$		MAX	75	60	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$		MIN	500	200	V/ $\mu s$

### STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM} = 35A$ $t_p = 380\mu s$	$T_j = 25^\circ C$	1.5	V
$I_{DRM}$	$V_D = V_{DRM} V_R = V_{RRM}$	$T_j = 25^\circ C$	5	$\mu A$
$I_{RRM}$		$T_j = 125^\circ C$	3	mA

### THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220A(Ins)	1.5	$^\circ C/W$
		TO-220C/ TO-220A(Non-Ins)	1.1	
		TO-220F(Ins)	1.7	
		TO-262	2.1	
		TO-3P(Ins)	0.67	

**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  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )

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