

**DESCRIPTION:**

The BT136-600D SCR series with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc.



TO-220F



TO-220A



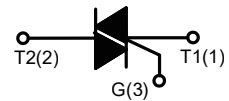
TO-220C



TO-126



TO-251


**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	4	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
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-251/ TO-220A(Non-Ins) /TO-220C ( $T_c=105^\circ\text{C}$ )	$I_{T(RMS)}$	4	A
	TO-220A(Ins)/ TO-220F(Ins) ( $T_c=100^\circ\text{C}$ )			
	TO-202-3/ TO-126/SOT-82 ( $T_c=95^\circ\text{C}$ )			

Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	35	A
$I^2t$ value for fusing ( $t_p=10ms$ )	$I^2t$	6.1	$A^2s$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	I - II - III	50	A/ $\mu s$
	IV		
Peak gate current	$I_{GM}$	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	$P_{GM}$	5	W

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

Symbol	Test Condition	Quadrant		Value				Unit
				T	D	E	F	
$I_{GT}$	$V_D=12V$	I - II - III	MAX	5	5	10	25	mA
		IV		5	10	25	70	
$V_{GT}$		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	MAX	10	20	30	40	mA
		II - IV		15	35	45	60	
$I_H$	$I_T=100mA$		MAX	5	15	25	30	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$		MIN	20	50	100	150	V/ $\mu s$
(dV/dt) <sub>c</sub>	(dI/dt) <sub>c</sub> =1.7A/ms $T_j=125^\circ C$		MIN	0.1	0.1	0.5	5	V/ $\mu s$

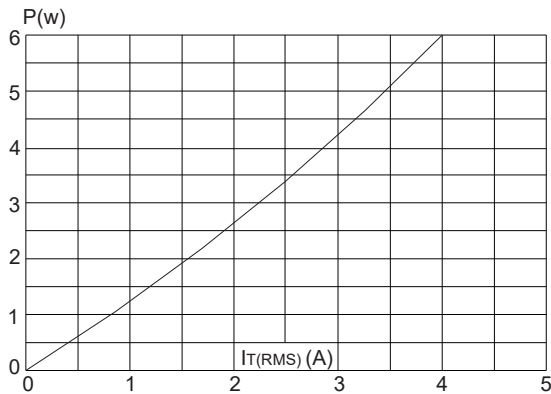
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=5.5A$ $t_p=380\mu s$	$T_j=25^\circ C$	1.6	V
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ C$	5	$\mu A$
$I_{RRM}$		$T_j=125^\circ C$	0.5	mA

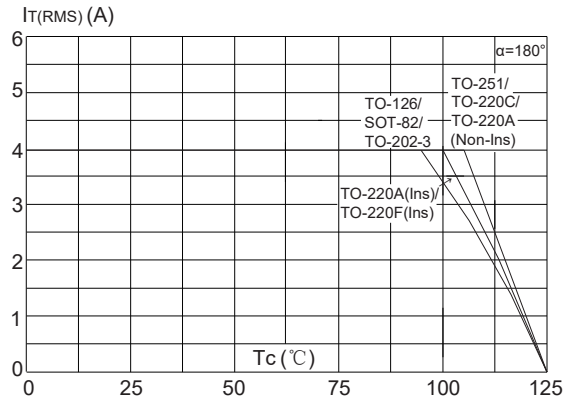
**THERMAL RESISTANCES**

<b>Symbol</b>	<b>Parameter</b>		<b>Value</b>	<b>Unit</b>
$R_{th(j-c)}$	junction to case(AC)	TO-251	2.8	°C/W
		TO-220A(Ins)	3.5	
		TO-220A(Non-Ins)/ TO-220C	2.5	
		TO-220F(Ins)	3.3	
		TO-126/SOT-82	3.7	
		TO-202-3	3.9	

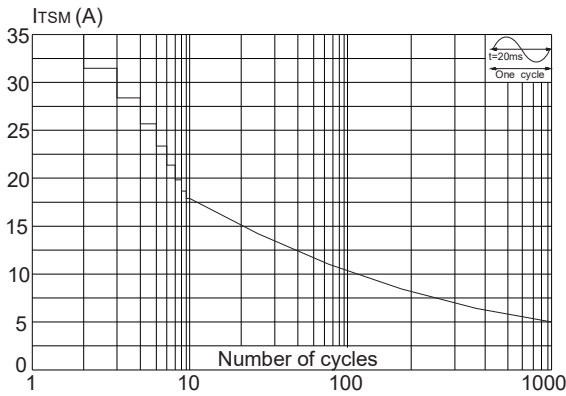
**FIG.1:** Maximum power dissipation versus RMS on-state current



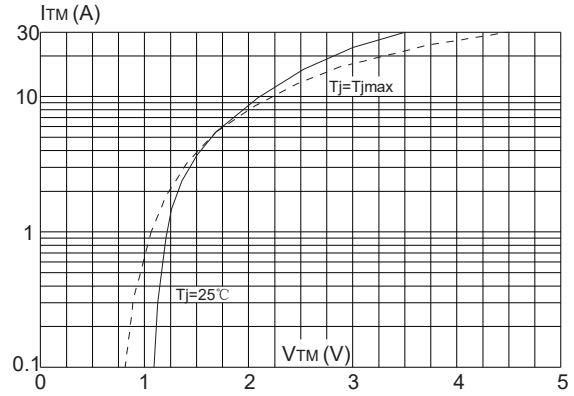
**FIG.2:** RMS on-state current versus case temperature



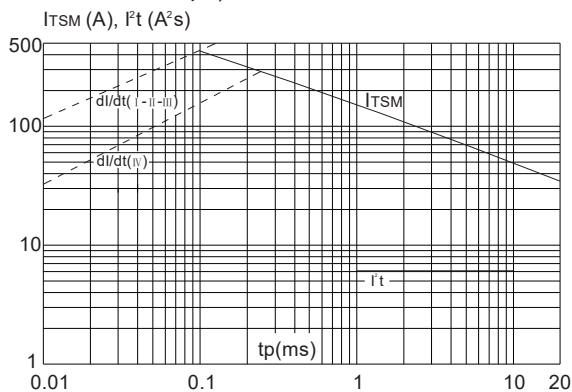
**FIG.3:** Surge peak on-state current versus number of cycles



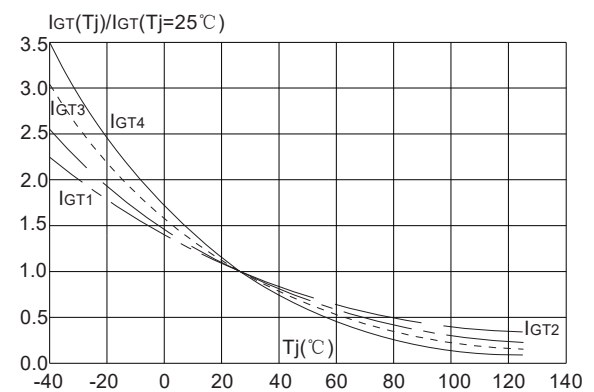
**FIG.4:** On-state characteristics (maximum values)

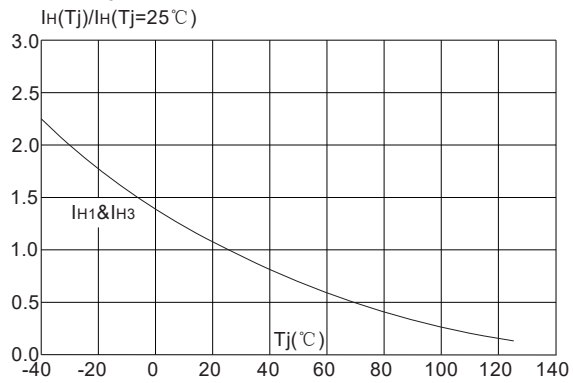


**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20ms$  and corresponding value of  $I^2t$  ( I - II -III:  $di/dt < 50A/\mu s$ ; IV:  $di/dt < 10A/\mu s$ )



**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
