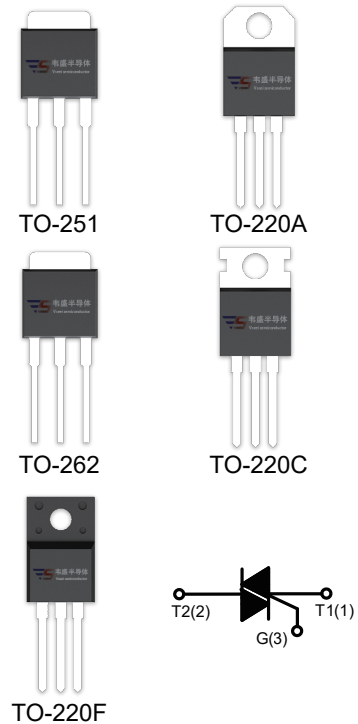


DESCRIPTION:

The BT137X-800F 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
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600 and 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-251/ TO-220A(Non-Ins)/ TO-220C($T_c=95^\circ\text{C}$)	8	A
	TO-262/ TO-220A(Ins)/ TO-220F(Ins) ($T_c=85^\circ\text{C}$)		
Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$)	I_{TSM}	65	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	21	A^2s
Peak gate current	I_{GM}	2	A

Critical rate of rise of on-state current($I_G=2 \times I_{GT}$)	I - II -III	di/dt	50	A/ μ s
	IV		10	
Average gate power dissipation		$P_{G(AV)}$	0.5	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	
			D	E	F	G		
I_{GT}	$V_D=12\text{V } R_L=30\Omega$	I - II -III	MAX	5	10	25	50	mA
		IV		10	25	70	100	
V_{GT}		ALL	MAX	1.3				V
V_{GD}	$V_D=V_{DRM} T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2				V
I_L	$I_G=1.2I_{GT}$	I -III	MAX	10	20	50	70	mA
		II -IV		20	30	70	100	
I_H	$I_T=100\text{mA}$		MAX	10	15	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	20	50	50	200	V/ μ s

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=10\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
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-251	2.1	$^\circ\text{C/W}$
		TO-220A(Non-Ins)/ TO-220C	1.8	
		TO-220A(Ins)/ TO-220F(Ins)	2.9	
		TO-262	3.1	

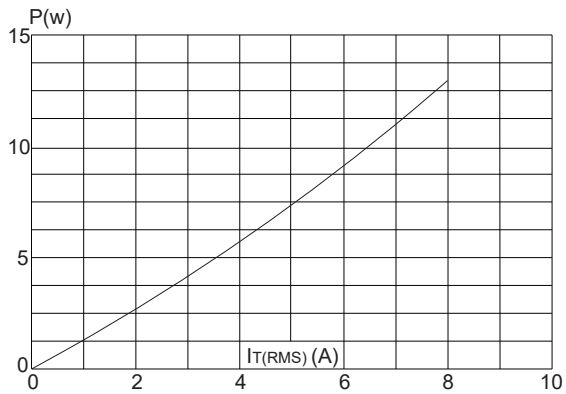
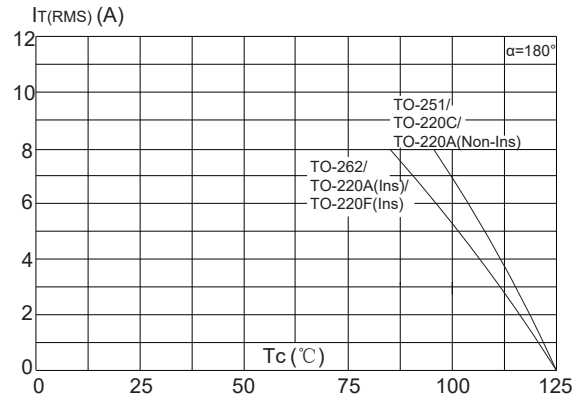
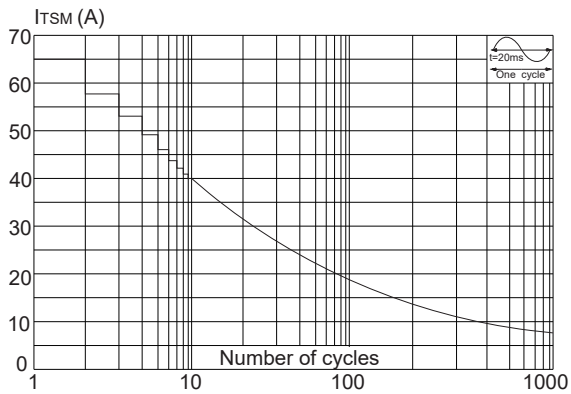
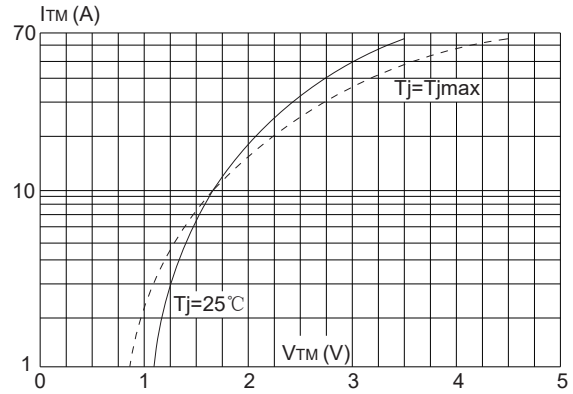
FIG.1: Maximum power dissipation versus RMS on-state current

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 (I - II -III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

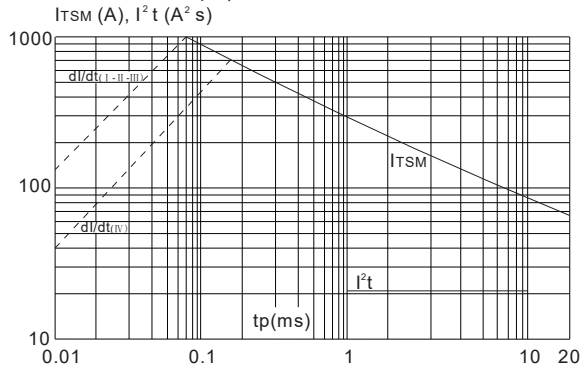


FIG.7: Relative variations of holding current versus junction temperature

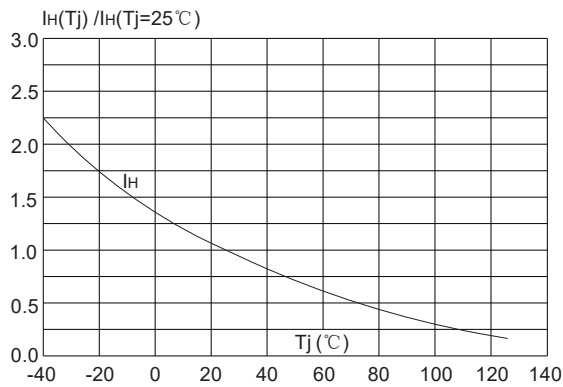


FIG.6: Relative variations of gate trigger current versus junction temperature

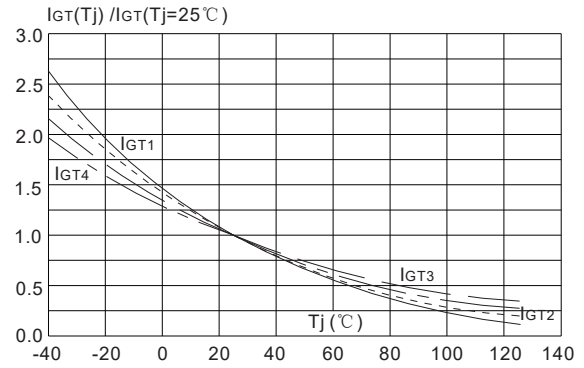


FIG.8: Relative variations of latching current versus junction temperature

