



Jiangsu Weida Semiconductor Co., Ltd

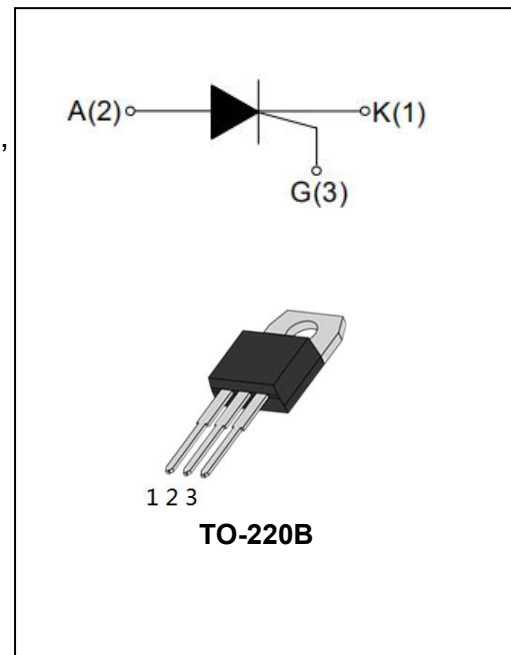
BT258 8A Sensitive SCRs

DESCRIPTION:

The BT258 series SCR is intended for use in general purpose switching and phase control applications. They are especially recommended for use on microcontrollers, logic integrated circuits and other low power gate trigger circuits.

MAIN FEATURES:

symbol	value	unit
$I_{T(RMS)}$	8	A
I_{GT}	≤ 200	μA
V_{DRM}/V_{RRM}	600/800	V



ABSOLUTE MAXIMUM RATINGS:

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40~150	$^{\circ}C$
Operating junction temperature range	T_j	-40~110	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	600/800	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	600/800	V
RMS on-state current	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle, $F=50Hz$)	I_{TSM}	80	A
I^2t value for fusing ($t_p=10ms$)	I^2t	32	A^2s
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}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W



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

Symbol	Test Condition	Value			Unit
		MIN	TYPE	MAX	
I_{GT}	$V_D=12\text{V}, R_L=33\Omega$	-	50	200	μA
V_{GT}		-	0.6	1.0	V
V_{GD}	$V_D=V_{DRM}, T_j=110^\circ\text{C}$ $R_L=3.3\text{k}\Omega$	0.2	-	-	V
I_H	$I_T=50\text{mA}$	-	-	5	mA
I_L	$I_G=1.2I_{GT}$	-	-	6	mA
dV/dt	$V_D=0.66\times V_{DRM}, T_j=110^\circ\text{C}$ Gate open $R_{GK}=1\text{k}\Omega$	50	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Test Condition		Value	Unit
V_{TM}	$I_{TM}=16\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	MAX	1.55 V
I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}$ $R_{GK}=1\text{k}\Omega$	$T_j=25^\circ\text{C}$	MAX	5 μA
		$T_j=110^\circ\text{C}$		0.5 mA

THERMAL RESISTANCES

Symbol	Test Condition		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220B	2.1	$^\circ\text{C/W}$

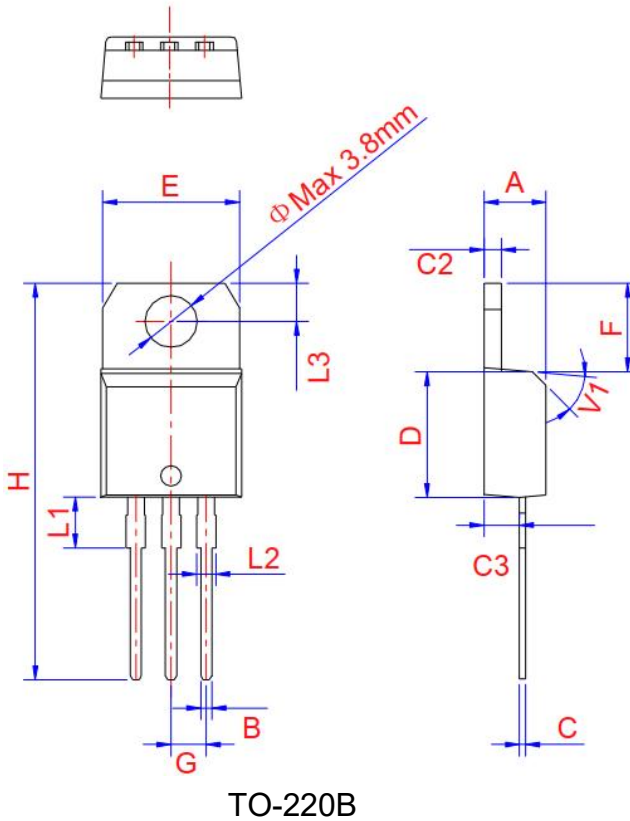
ORDERING INFORMATION

BT258 - 800R	
SCR	$I_{T(RMS)}: 8\text{A}$
V_{DRM}, V_{RRM} : 600R: 600V 800R: 600V	



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PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4	4.47	4.6	0.173	0.176	0.181
B	0.61		0.88	0.024		0.035
C	0.46	0.50	0.7	0.018	0.02	0.028
C2	1.21	1.27	1.32	0.048	0.050	0.052
C3	2.4		2.72	0.094		0.107
D	8.6		9.7	0.339		0.382
E	9.8		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

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

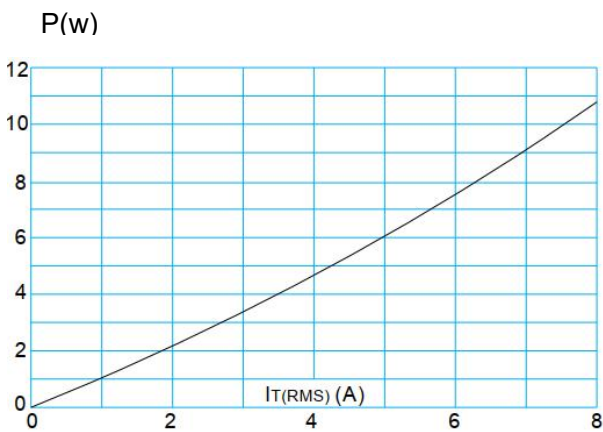
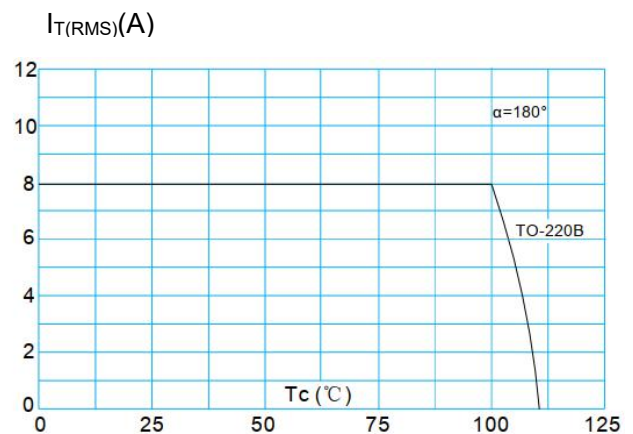


FIG.2: RMS on-state current versus case temperature





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

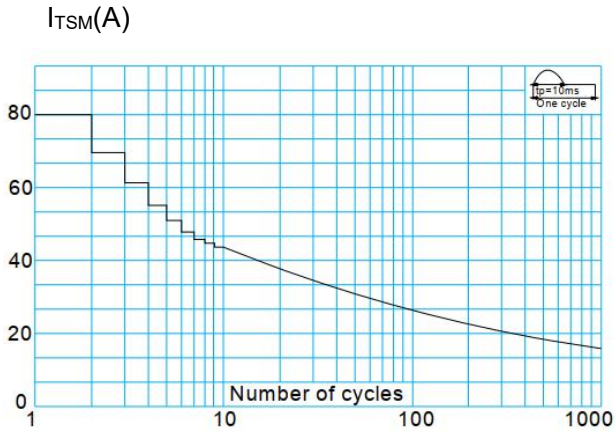


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 50A/\mu s$)

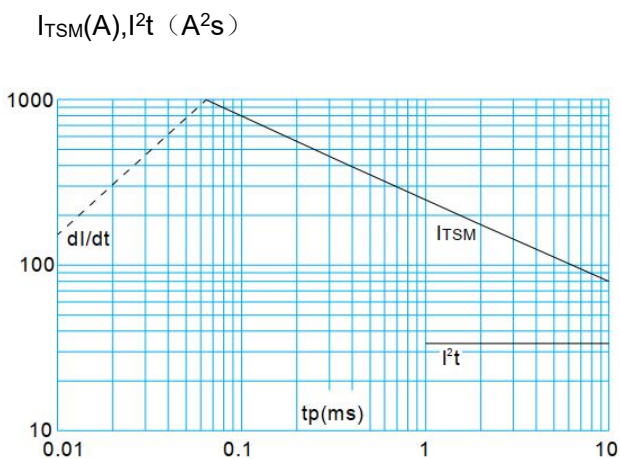


FIG.4: On-state characteristics (maximum values)

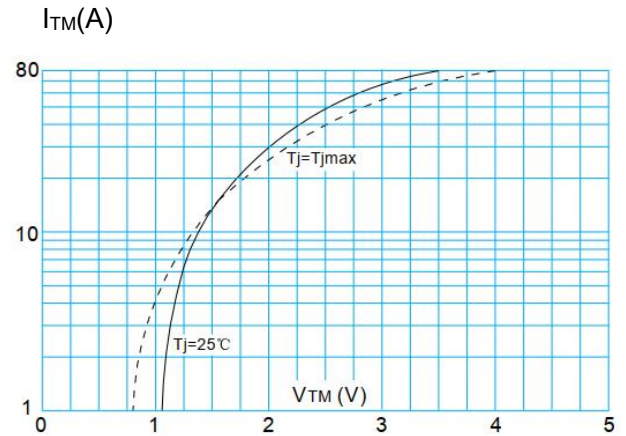
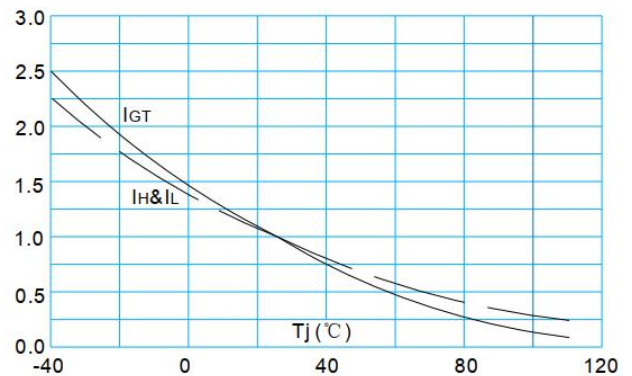


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

$$I_{GT, IH, IL}(T_J) / I_{GT, IH, IL}(T_J = 25^\circ C)$$





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