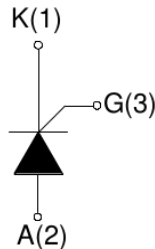
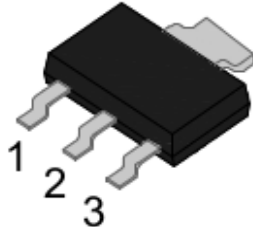


## SENSITIVE GATE SCR



**BT168GW**  
**SOT-223**  
**Plastic Package**

BT168GW SCR provides high dv/dt rate with strong resistance to electromagnetic interference. It is specially recommended for use on residual current circuit breaker, straight hair, igniter etc.

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Storage junction temperature range	$T_{stg}$	-40 to 150	°C
Operating junction temperature range	$T_j$	-40 to 110	°C
Repetitive peak off-state voltage	$V_{DRM}$	800	V
Repetitive peak reverse voltage	$V_{RRM}$	800	V
RMS on-state current ( $T_c=75^\circ\text{C}$ )	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current ( $t_p=10\text{ms}$ )	$I_{TSM}$	12	A
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )	$I^2t$	0.72	$\text{A}^2\text{s}$
Critical rate of rise of on-state current	$di/dt$	50	$\text{A}/\mu\text{s}$
Peak gate current ( $t_p=20\mu\text{s}$ , $T_j=110^\circ\text{C}$ )	$I_{GM}$	0.3	A
Peak gate power ( $t_p=20\mu\text{s}$ , $T_j=110^\circ\text{C}$ )	$P_{GM}$	0.5	W
Average gate power dissipation ( $T_j=110^\circ\text{C}$ )	$P_{G(AV)}$	0.1	W

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

PARAMETER	SYMBOL	TEST CONDITION	VALUE			UNIT
			MIN.	TYP.	MAX.	
Gate Trigger Current	$I_{GT}$	$V_D=12\text{V}, R_L=33\Omega$	-	40	200	$\mu\text{A}$
Gate Trigger Voltage	$V_{GT}$		-	0.6	0.8	V
Non-trigger gate voltage	$V_{GD}$	$V_D=V_{DRM}, T_j=110^\circ\text{C}$	0.2	-	-	V
Latching Current	$I_L$	$I_G=1.2I_{GT}$	-	-	5	mA
Holding Current	$I_H$	$I_T=0.05\text{A}$	-	-	4	mA
Critical rate of rise of off-state voltage	dV/dt	$V_D=2/3V_{DRM}, T_j=110^\circ\text{C}, R_{GK}=1\text{k}\Omega$	100	200	-	V/ $\mu\text{A}$

**STATIC CHARACTERISTICS**

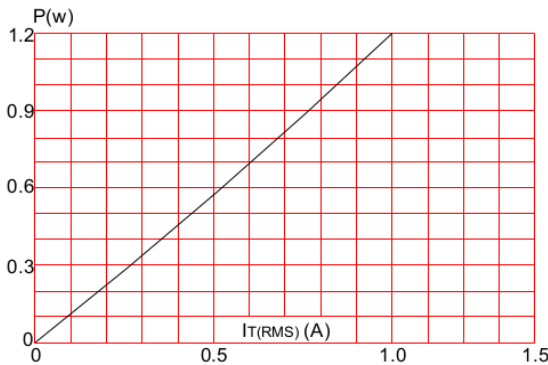
PARAMETER	SYMBOL	TEST CONDITIONS	VALUE (MAX.)	UNIT
Peak on-state voltage drop	$V_{TM}$	$I_T=2\text{A}, t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$ 1.7	V
Maximum forward leakage current	$I_{DRM}$	$V_D=V_{DRM}, V_R=V_{RRM}$	$T_j=25^\circ\text{C}$ 5	$\mu\text{A}$
Maximum reverse leakage current	$I_{RRM}$		$T_j=110^\circ\text{C}$ 100	$\mu\text{A}$

**THERMAL RESISTANCE**

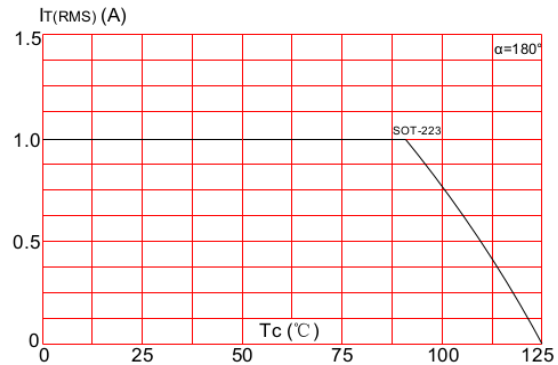
PARAMETER	SYMBOL	VALUE	UNIT
Thermal resistance junction to case	$R_{th(j-c)}$	25	$^\circ\text{C}/\text{W}$

### CHARACTERISTICS CURVES

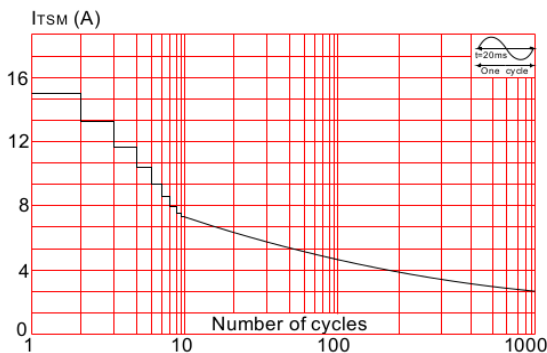
**FIG.1:** Maximum power dissipation versus RMS on-state current



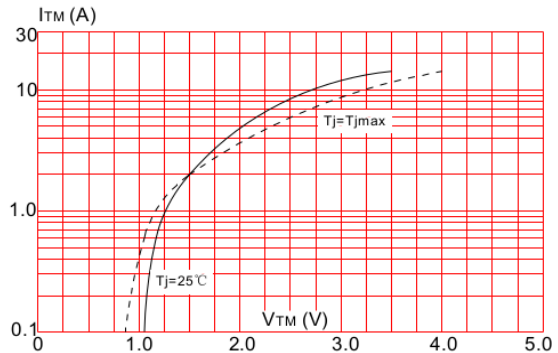
**FIG.2:** RMS on-state current versus case temperature



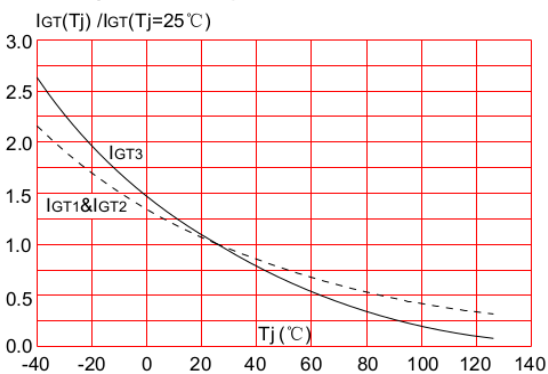
**FIG.3:** Surge peak on-state current versus number of cycles



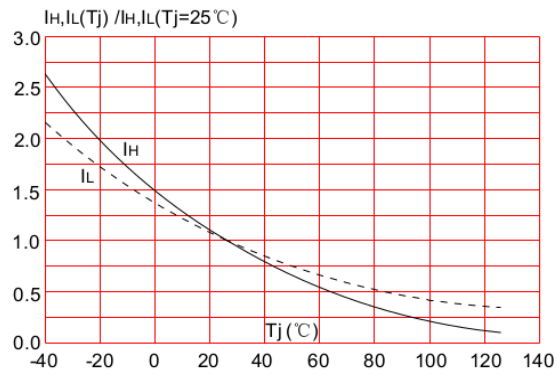
**FIG.4:** On-state characteristics (maximum values)



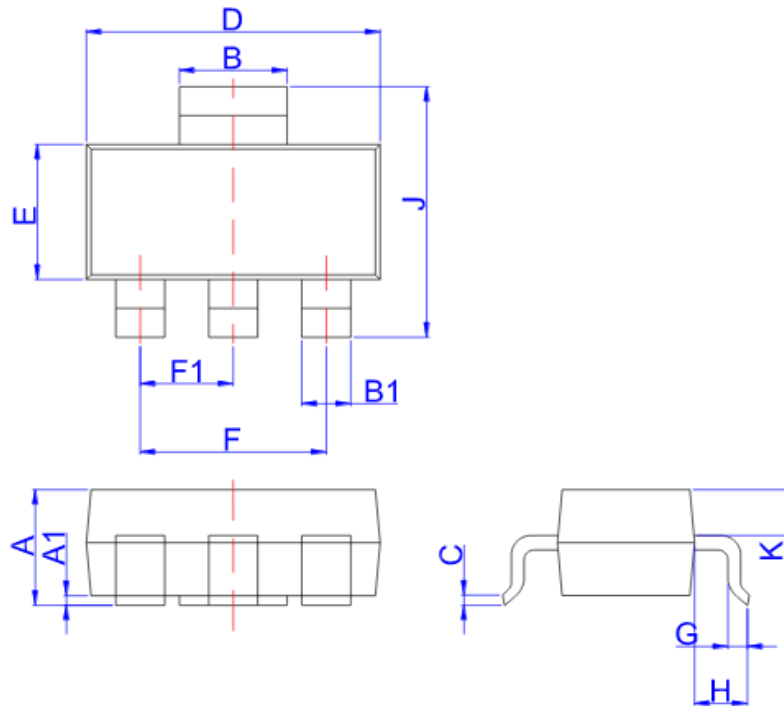
**FIG.5:** Relative variation of gate trigger current versus junction temperature



**FIG.6:** Relative variation of holding current, latching current versus junction temperature



## SOT-223 PACKAGE OUTLINE AND DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0	0.06	0.10	0	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039



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#### Customer Notes:

#### Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

#### DISCLAIMER

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).



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