

BT169 SERIES

TO-92 Plastic-Encapsulate Thyristors

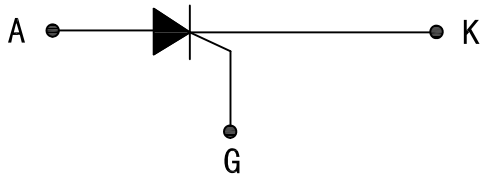


DESCRIPTION:

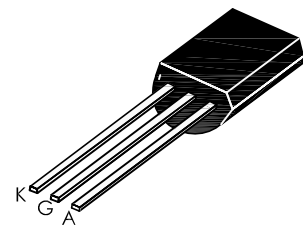
Highly sensitive triggering levels, the BT169 Series SCRs is suitable for all applications, where the available gate current is limited, such as capacitive discharge ignitions, motor control in kitchen aids, overvoltage crowbar protection in low power supplies...

MAIN FEATURES

Symbol	Value	Unit
$I_{T(AV)}$	0.5	A
V_{DRM}/V_{RRM}	400 and 600	V
I_{GT}	≤ 200	μA



TO-92



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	- 40 to +150	$^{\circ}C$
Operating junction temperature range	T_j	- 40 to +110	$^{\circ}C$
Repetitive Peak Off-state Voltage	$T_j=25^{\circ}C$ V_{DRM}	400 and 600	V
Repetitive Peak Reverse Voltage	$T_j=25^{\circ}C$ V_{RRM}	400 and 600	V
RMS on-state current (180° conduction angle)	$T_c=77^{\circ}C$ $I_{T(RMS)}$	0.8	A
Average on-state current (180° conduction angle)	$T_c=77^{\circ}C$ $I_{T(AV)}$	0.5	A
Non repetitive surge peak on-state current ($T_j=25^{\circ}C$)	$t_p=10ms$ I_{TSM}	8	A
	$t_p=8.3ms$	9	A
I^2t Value for fusing	$t_p=10ms$ I^2t	0.32	A^2s
Peak gate current	$t_p=20\mu s, T_j=110^{\circ}C$ I_{GM}	0.2	A
Average gate power dissipation	$T_j=110^{\circ}C$ $P_{G(AV)}$	0.1	W

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ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

Symbol	Test Condition		BT169			Unit	
			Min.	Typ.	Max.		
I _{GT}	V _D =6V R _L =100Ω		-	40	200	μA	
V _{GT}			-	0.6	0.8	V	
V _{GD}	V _D =V _{DRM} R _L =3.3KΩ R _{GK} =1KΩ T _j =110°C		0.2	-	-	V	
I _L	I _G =1mA R _{GK} =1KΩ		-	-	6	mA	
I _H	I _T =50mA R _{GK} =1KΩ		-	-	5	mA	
V _{TM}	I _T = 1A t _p =380uS	T _j =25 °C	-	1.2	1.35	V	
dV/dt	V _D =67%V _{DRM} R _{GK} =1KΩ		10	-	-	V/μs	
I _{DRM}	V _D = V _{DRM} R _{GK} =1KΩ		T _j =25 °C	-	-	5	μA
			T _j =110 °C	-	-	0.1	mA
I _{RRM}	V _R = V _{RRM} R _{GK} =1KΩ		T _j =25 °C	-	-	5	μA
			T _j =110 °C	-	-	0.1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th} (J-C)	Junction to Case	TO-92	60	°C/W

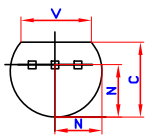
ORDERING INFORMATION

BT169
0.8A Highly Sensitive SCRs

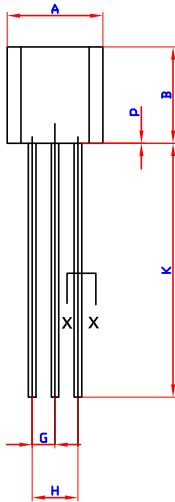
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PACKAGE MECHANICAL DATA



SECTION X-X



TO-92(TO-226AA)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.45	5.2	0.175	0.205
B	4.32	5.33	0.170	0.210
C	3.18	4.19	0.125	0.165
D	0.407	0.533	0.016	0.021
G	1.15	1.39	0.045	0.055
H	2.42	2.66	0.095	0.105
J	0.39	0.50	0.015	0.020
K	12.70	-	0.500	-
N	2.04	2.66	0.080	0.105
P	-	2.54	-	0.100
V	3.43	-	0.135	-

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FIG.1: Maximum power dissipation versus RMS on-state current(full cycle)

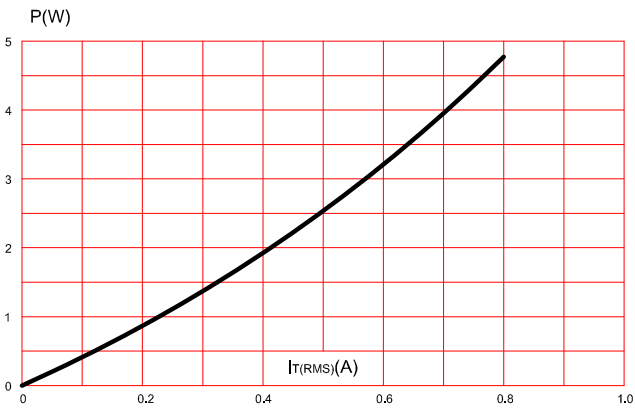


FIG.2: RMS on-state current versus case temperature(full cycle)

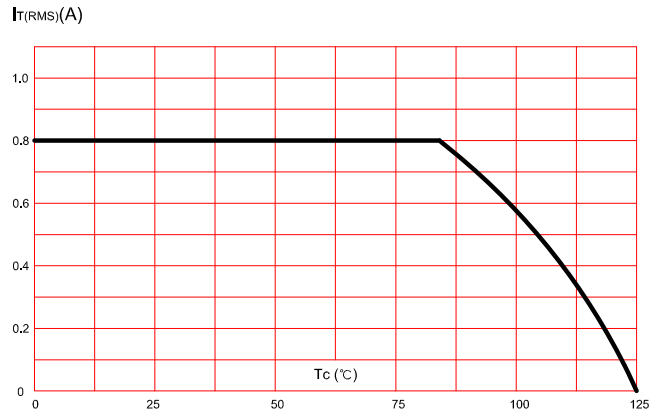


FIG.3: On-state characteristics (maximum values)

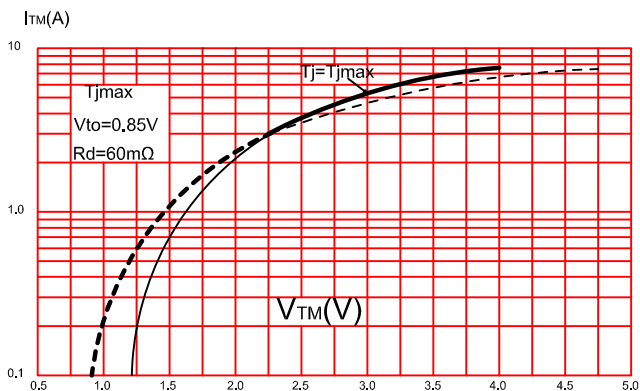


FIG.4: Surge peak on-state current versus number of cycles.

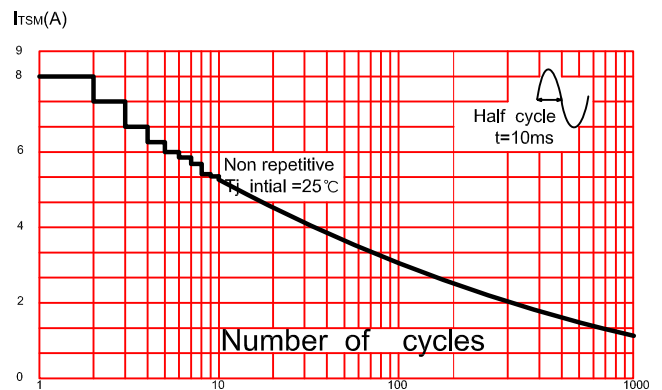


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms.

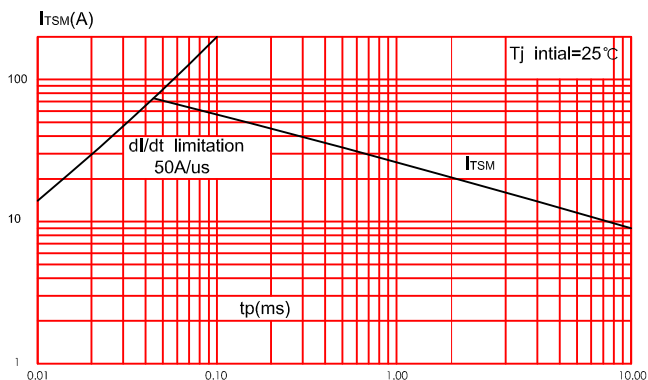


FIG.6: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

