



0.8A SCRs

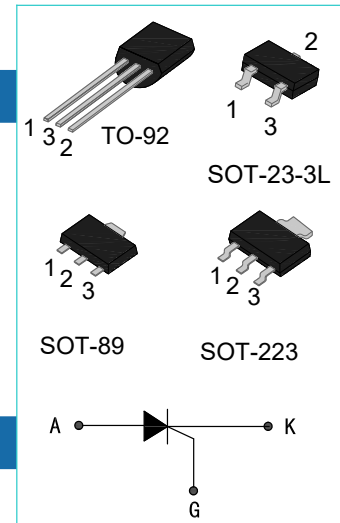
BT169 Serial

Main Features:

IT(RMS)	VDRM/VRRM	IGT
0.8A	600 V	≤200uA

Description:

High 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...



Absolute Ratings(limiting values) :

Symbol	Parameter		value	Unit
IT(RMS)	on-state RMS current (180°C conduction angle)	SOT-23-3L/TO-92 (TC=50°C)	0.8	A
		SOT-223(TC=70°C)		
		SOT-89-2L(TC=61°C)		
ITSM	Non repetitive surge peak on-state current (Tj= 25 °C)	tp= 8.3 ms	9	A
		tp = 10 ms	8	
VDRM	Repetitive peak off-state voltage(Tj =25°C)		600	V
VRRM	Repetitive peak reverse voltage(Tj =25°C)		600	V
Tstg Tj	Storage and operating junction temperature range		- 40 to + 150 - 40 to + 110	°C
I²t	I²t value for fusing Tj = 125°C	tp = 10 ms	0.32	A²s
di/dt	Critical rate of rise of on-state current IG=2xIGT, tr≤100ns		50	A/μs
IGM	Peak gate current tp=20us Tj=125°C		0.2	A
PGM	Peak gate power tp=20us Tj=125°C		-	W
PG(av)	Average gate power dissipation Tj=125°C		0.1	W

Electrical Characteristics :

Symbol	Test Condition		range	Value	Unit
I_{GT}	V _D =6V R _L =100Ω	T _j =25°C	MAX	200	uA
V_{GT}		T _j =25°C	MAX	0.8	V
V_{GD}	V _D =V _{DRM} R _L =3.3kΩ	T _j =125°C	MIN	0.2	V
t_{gt}	V _D =V _{DRM} I _G = 500uA dI _G /dt = 0.2A/μs	T _j =25°C	TYP	-	μs
I_L	R _{GK} = 1KΩ I _{GT} = 1 mA	T _j =25°C	MAX	6	mA
I_H	I _T = 50mA R _{GK} = 1KΩ	T _j =25°C	MAX	5	mA
V_{TM}	I _T = 1 A t _p =380μs	T _j =25°C	MAX	1.35	V
I_{DRM} I_{RRM}	V _D =V _{DRM} , V _R =V _{RRM}	T _j =110°C	MAX	0.1	μA
		T _j =110°C	MAX	0.1	mA
dV_D/dt	V _D =67%V _{DR} exponential waveform; R _{GK} = 100 Ω	T _j =125°C	MIN	10	V/μs

Thermal Resistances :

Symbol	Parameter		Value	Unit
R_{th(j-c)}	junction to mounting base	SOT-89	45	°C/W
		SOT-223	31	
		SOT-23-3L/TO-92	75	

Fig.1:Maximum average power dissipation versus average on-state current
Fig.2 : RMS on-state current versus case temperature

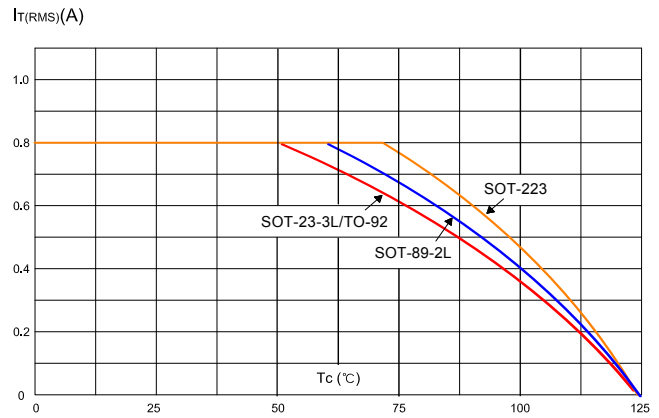
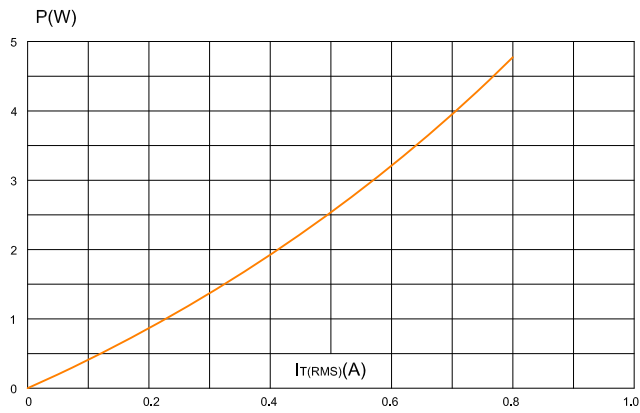


Fig.3 : On-state characteristics

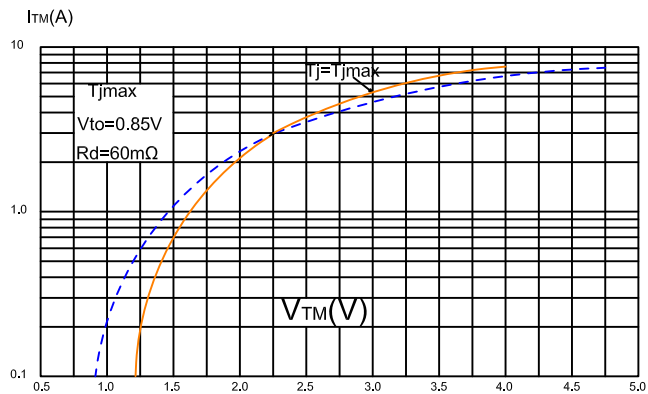


Fig.4 : Surge peak on-state current versus number of cycles

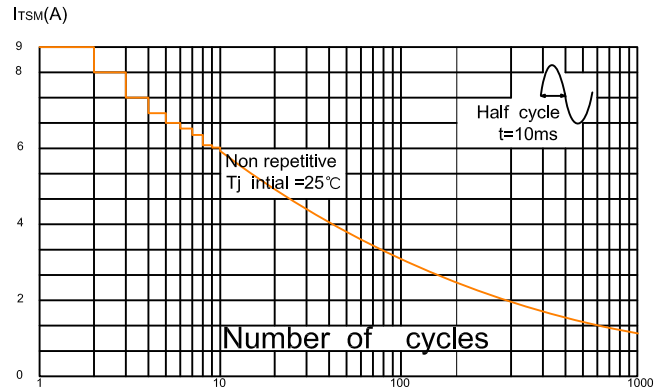


Fig.5 :Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t_p \leq 10\text{ms}$, and corresponding value of $I^2 t$.

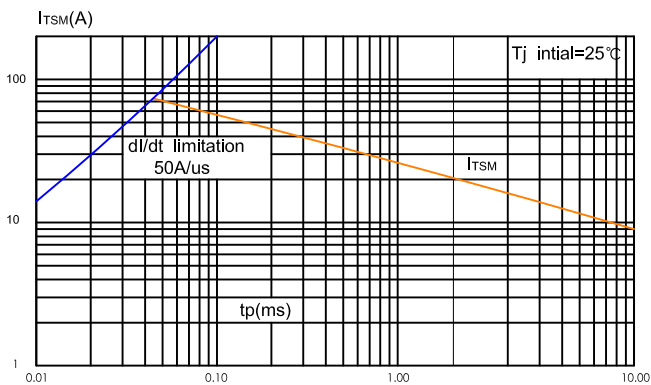
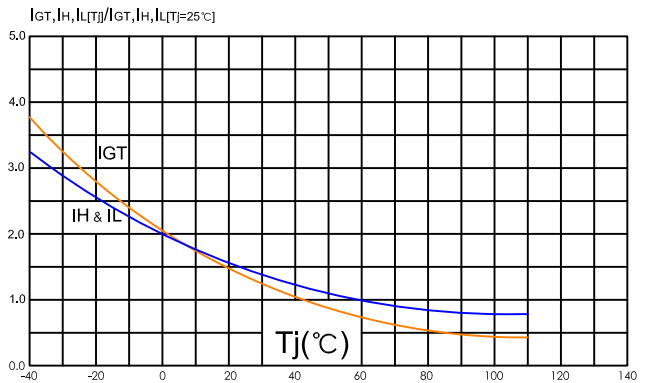
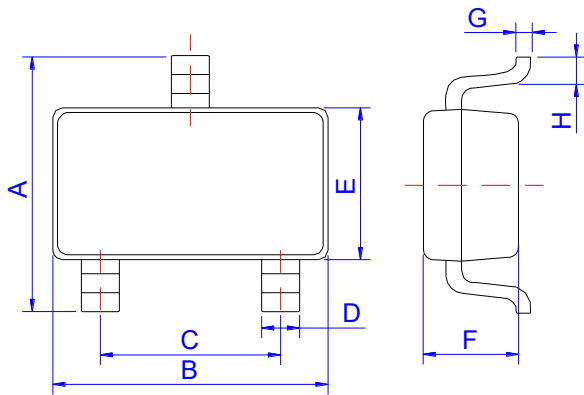


Fig.6 :Relative variation of gate trigger current and holding current and latching current versus junction temperature

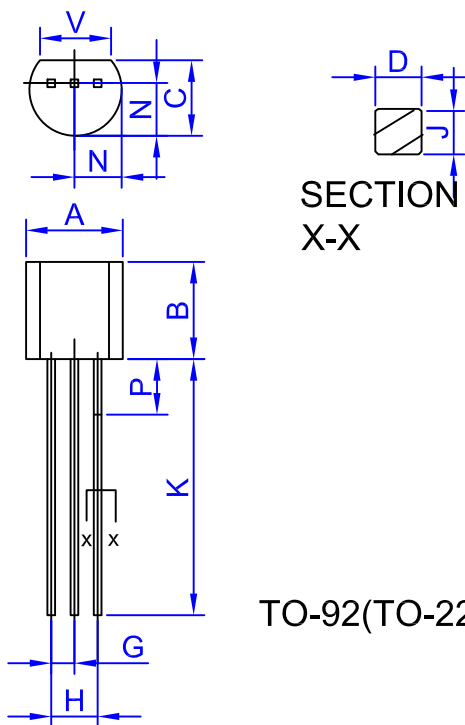


Package Mechanical Data :



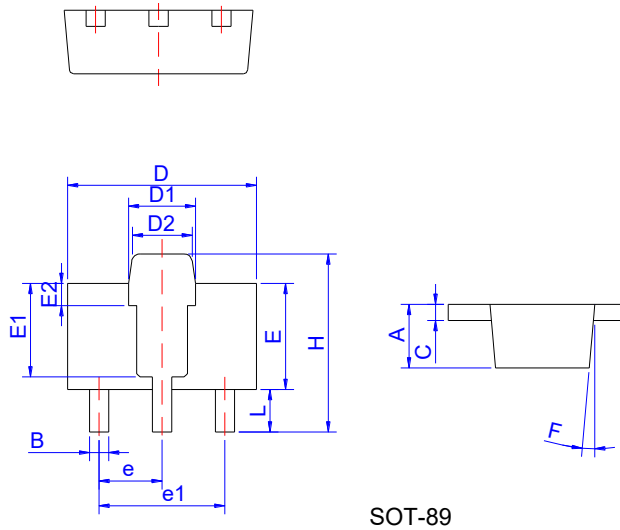
SOT-23-3L

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.65		2.95	0.104		0.116
B		2.92			0.115	
C		1.90			0.075	
D	0.34		0.36	0.013		0.014
E		1.60			0.063	
F		1.17			0.046	
G		0.15			0.006	
H	0.25		0.55	0.010		0.022

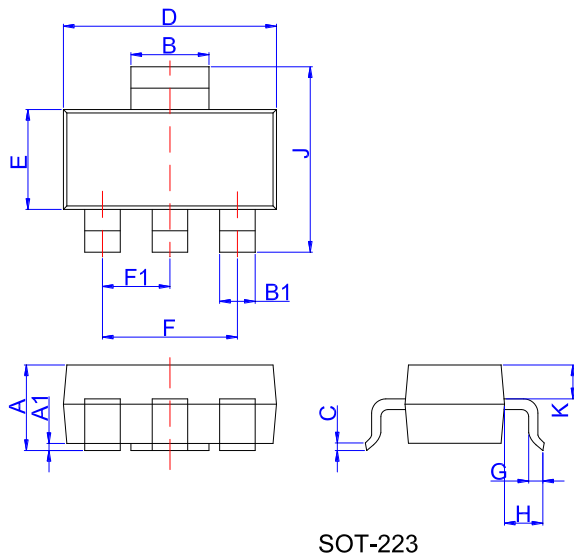


TO-92(TO-226A)

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	-



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.40		0.52	0.016		0.020
C	0.35		0.41	0.014		0.016
D	4.40		4.60	0.173		0.181
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.40		2.60	0.094		0.102
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5°			0.197°	
H	4.05		4.25	0.159		0.167
L	0.89		1.20	0.035		0.047



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