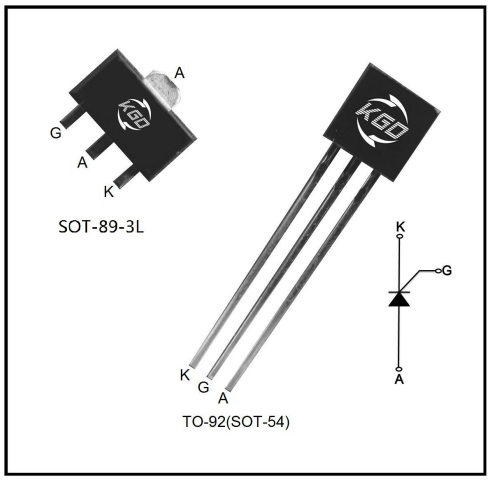
MCR22-8 Series

- **Description:**
  Highly sensitive triggering levels,the MCR22-8 Series SCRs is suitable for all applications,where the available gate currentis limited,such as capacitive discharge ignitions,motor control in kitchen aids, overvoltage crowbar protection in low power supplies...



- **Features:**
  Blocking voltage to 600V
  On-state RMS current to 1.5A
  Non-repetitive peak on-state current to 12A

- **Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Value		Unit
V_{DRM}	Repetitive peak off-state voltage	T_J=25℃	600		V
V_{RRM}	Repetitive peak Reverse voltage	T_J=25℃	600		V
$I_{T(RMS)}$	RMS on-state current (180° conduction half sine wave)	T_c=77℃	1.5		A
$I_{T(av)}$	Average on-state current (180° conduction half sine wave)	T_c=77℃	1.0		A
I_{TSM}	Non-repetitive surge peak On-state current(T_J=25℃)	tp=10ms	12		A
I^2t	I^2t Value for fusing	tp=10ms	0.7		A^2S
I_{GFM}	Forward Peak Gate Current	T_J=25℃	0.2		A
I_{GM}	Peak gate current	tp=20μs, T_J=110℃	0.5		A
$P_{G(AV)}$	Average gate power dissipation		0.1		W
T_{STG}	Storage temperature		-40	150	℃
T_J	Junction temperature		-40	110	℃

● Electrical Characteristics

Symbol	Conditions	Value			Unit
		MIN	TYP	MAX	
I_{GT}	V_D=6V,R_L=100Ω	/	40	200	uA
V_{GT}	V_D=12V,R_L=100Ω	/	0.6	0.8	V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ,R_{GK}=1KΩ,T_J=110℃	0.1	/	/	V
I_L	I_G=1mA, R_{GK}=1KΩ	/	/	6	mA
I_H	I_T=50mA,R_{GK}=1KΩ	/	/	5	mA
dv/dt	V_{DM}=67%V_{DRM}, R_{GK}=1KΩ,T_J=110℃	10	/	/	V/μs

● Electrical Characteristics

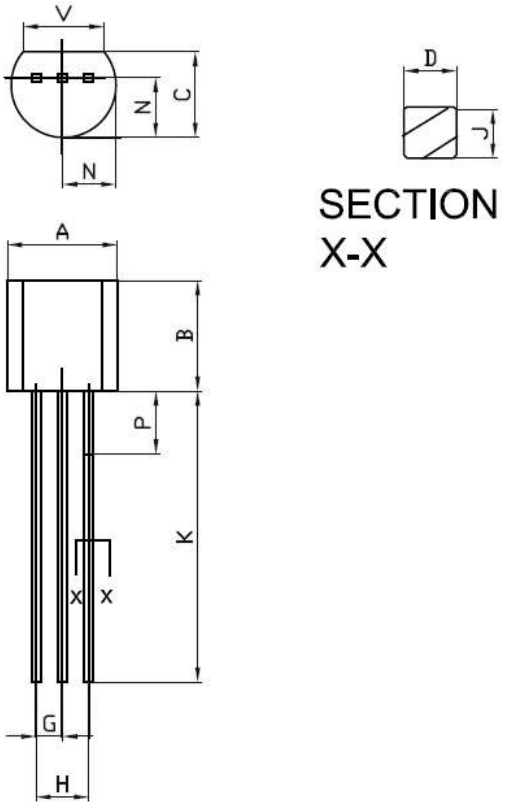
Symbol	Parameter		Numerical(Max)	Unit
V_{TM}	I_T=2A,tp=380μs	T_J=25℃	1.7	V
I_{DRM} I_{RRM}	V_D=V_{DRM},V_R=V_{RRM}	T_J=25℃	5	μA
		T_J=110℃	0.1	mA

● Thermal Characteristics

Symbol	Parameter		Numerical(MAX)	Unit
$R_{th(j-c)}$	Junction to case	TO-92	75	℃/W
		SOT-89-3L	15	
$R_{th(j-a)}$	Junction to ambient	TO-92	150	℃/W
		SOT-89-3L	400	
T_L	Lead Solder Temperature(<1/16”from case,10 secs max)		260	℃

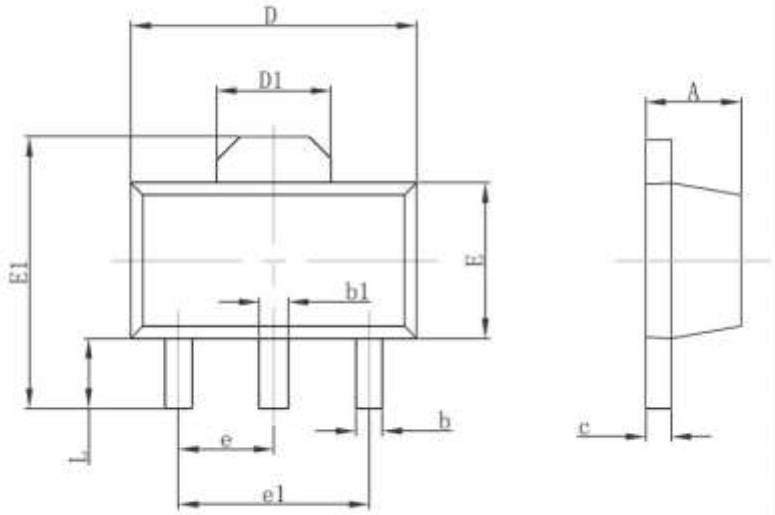
- **Package Outline Dimensions**

TO-92（SOT-54）



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	-

SOT-89-3L



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.188 TYP.	
L	0.900	1.200	0.035	0.047

CURRENT DERATING

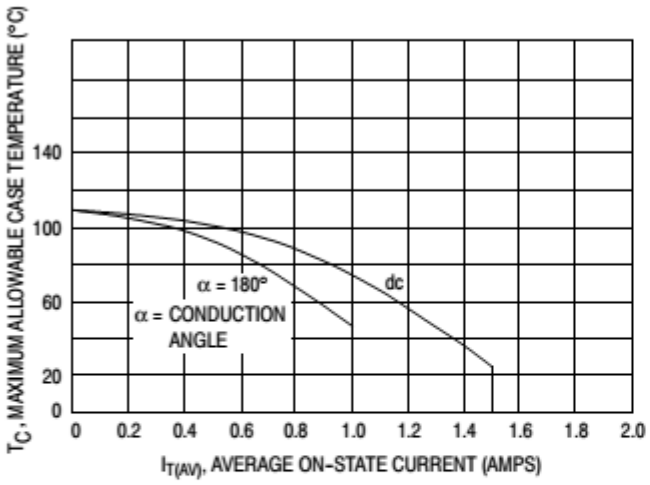


Figure 1. Maximum Case Temperature

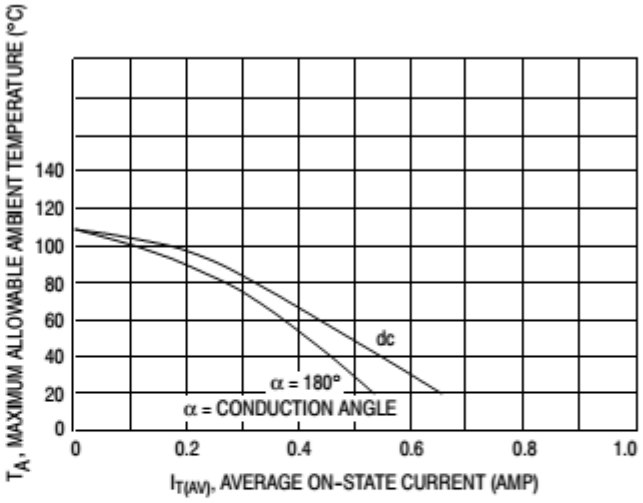


Figure 2. Maximum Ambient Temperature

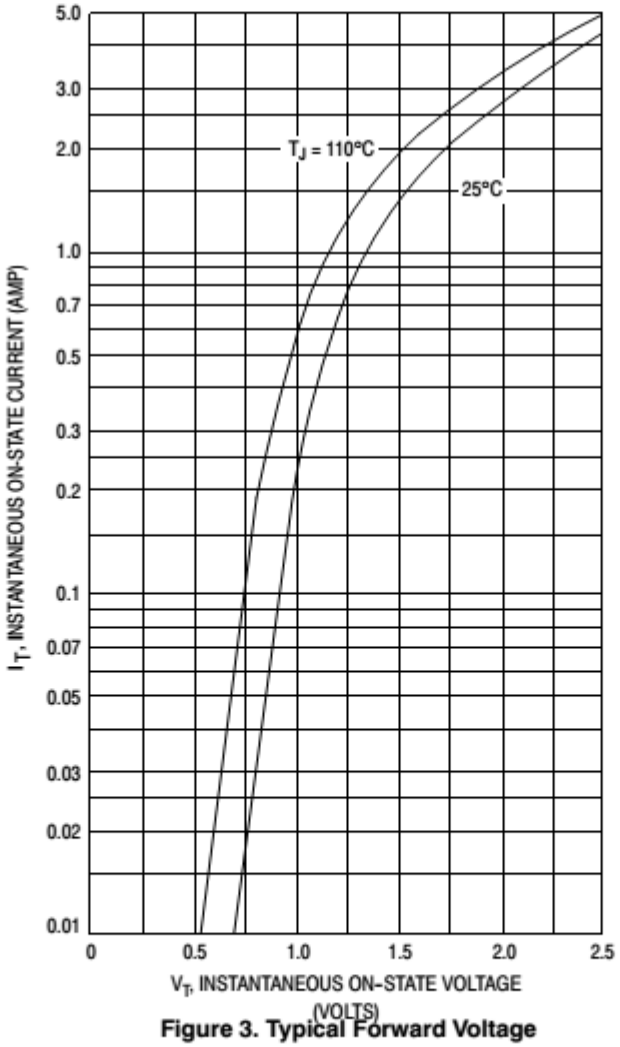


Figure 3. Typical Forward Voltage

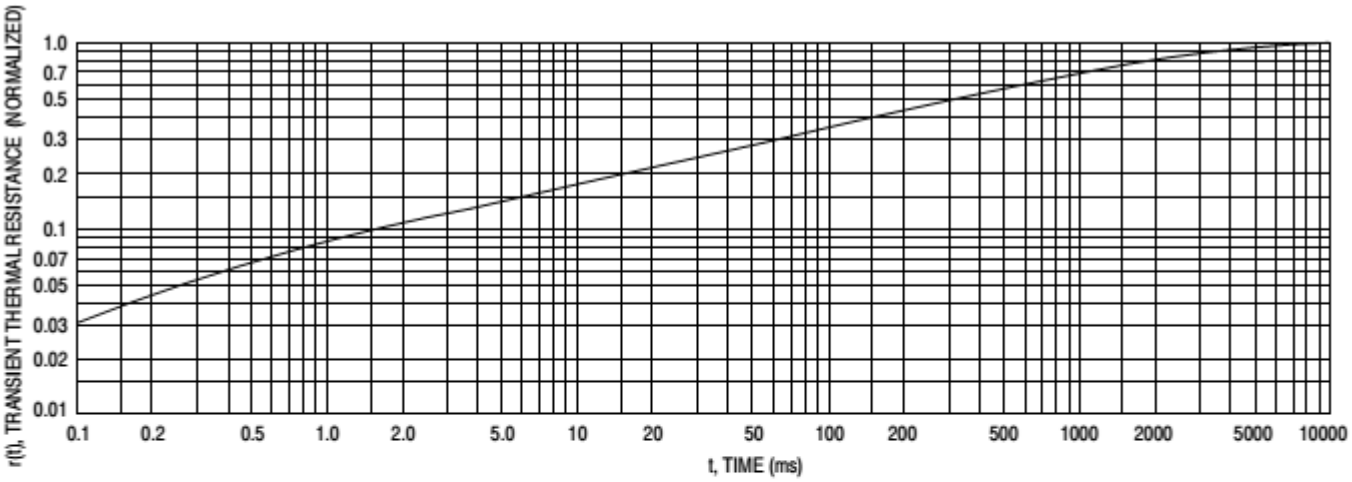


Figure 4. Thermal Response

TYPICAL CHARACTERISTICS

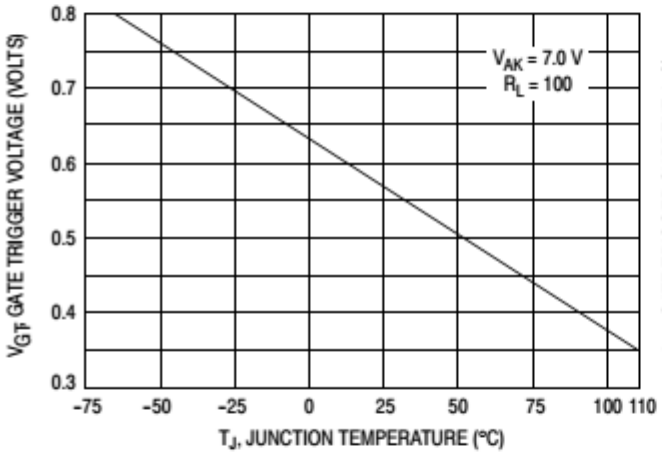


Figure 5. Typical Gate Trigger Voltage

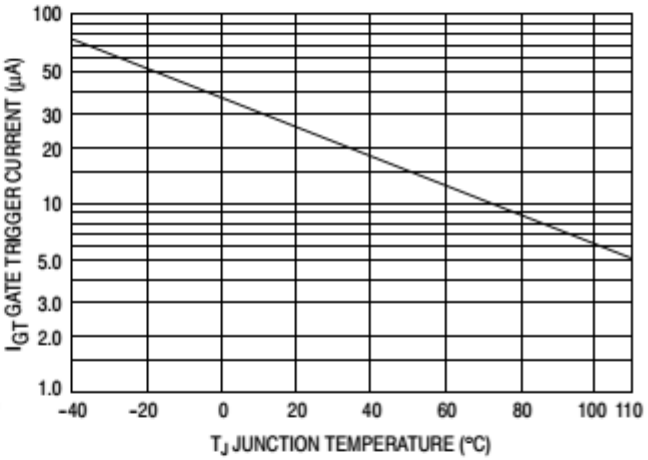


Figure 6. Typical Gate Trigger Current

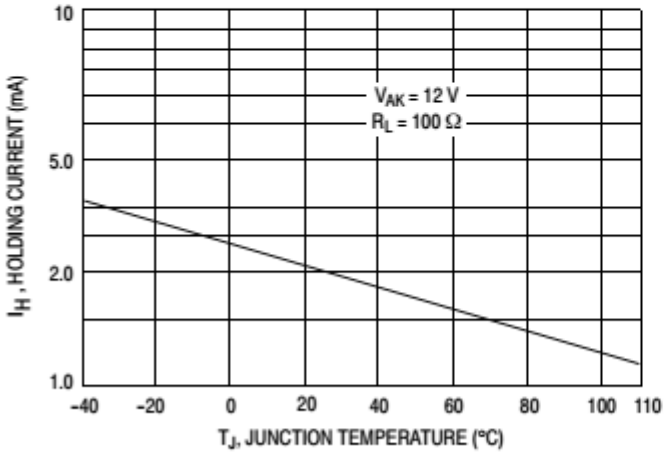


Figure 7. Typical Holding Current

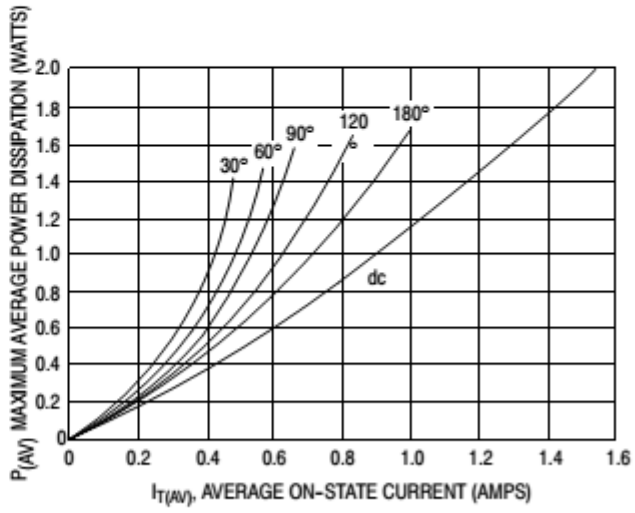


Figure 8. Power Dissipation