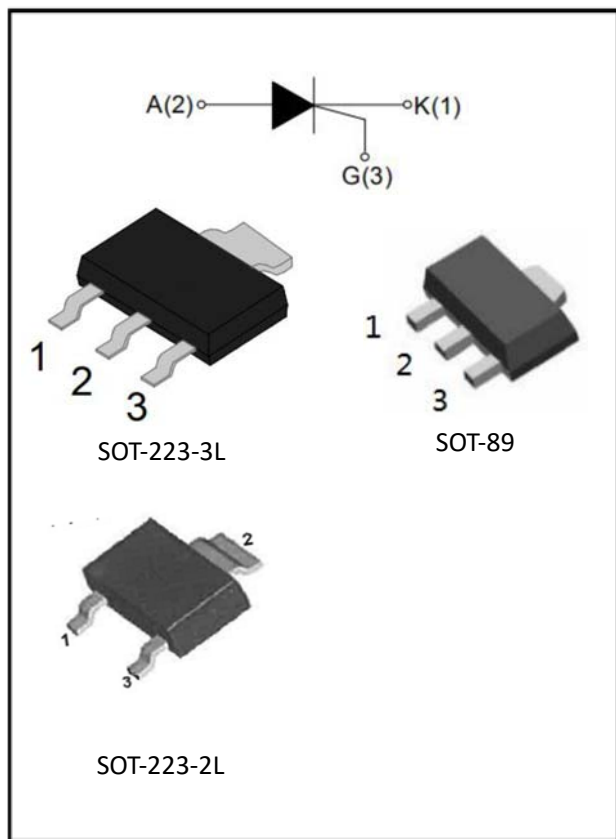


1A Sensitive SCRs



Features

- On-state rms current, $I_{T(RMS)}$ 1 A
- Repetitive peak off-state voltage, V_{DRM}/V_{RRM} 900 V
- Triggering gate current, I_{GT} 200 μA

Applications

- Ground Fault Circuit Interrupters (GFCI)
 - General purpose switching and phase control
 - Ignition circuits, CDI
 - Motor control - e.g. small kitchen appliances

Mechanical Data

- Case Material: "Green" Molding Compound
- Package:

DEVICE	PACAKGE
YC0910S2	SOT-223-3L
YC0910S3	SOT-89
YC0910S4	SOT-223-2L

Main Characteristics

SYMBOL	LIMITS	UNIT
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	900	V
I_{GT}	200	μA

Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Storage junction temperature range	T_{stg}	-40~150	$^{\circ}C$
Operating junction temperature range	T_j	-40~125	$^{\circ}C$
Repetitive surge peak Off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	900	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	900	V
RMS on-state current ($TC=80^{\circ}C$)	$I_{T(RMS)}$	1	A
Non-repetitive surge peak on-state current (half sine wave, $t_p=10ms$, $T_j=25^{\circ}C$)	I_{TSM}	16	A
I^2t value for fusing ($t_p=10ms$)	I^2t	1.12	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}	0.2	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	0.5	W

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MIN	TYP	MAX
Gate trigger current	I _{GT}	μA	V _D =12V, R _L =33Ω	20	50	200
Gate trigger voltage	V _{GT}	V	V _D =12V, R _L =33Ω		0.6	1.0
Non-triggering gate voltage	V _{GD}	V	V _D =V _{DRM} T _j =110°C R _L =3.3kΩ	0.2		
Holding current	I _H	mA	I _T =50mA			3
Latching current	I _L	mA	I _G =1.2 I _{GT}			4
Rate of rise of off-state voltage	dV/dt	V/μs	V _D =0.66×V _{DRM} T _j =110°C Gate open R _{GK} =1KΩ	100		

■Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MAX
Peak on-state voltage	V _{TM}	V	I _{TM} =2A t _p =380μS	1.4
Peak off-state current	I _{DRM}	μA	V _{DRM} = V _{RRM} , T _j =25°C, R _{GK} =1KΩ	5
Peak reverse current	I _{RRM}	mA	V _{DRM} = V _{RRM} , T _j =125°C, R _{GK} =1KΩ	0.2

■Thermal Resistance (T_a=25°C Unless otherwise specified)

PARAMETER		SYMBOL	UNIT	Pacakge	Value
Thermal Resistance (Typical)	Junction to case	R _{θJ-C}	°C/W	SOT-223	18
			°C/W	SOT-89	38

■ Characteristics (Typical)

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

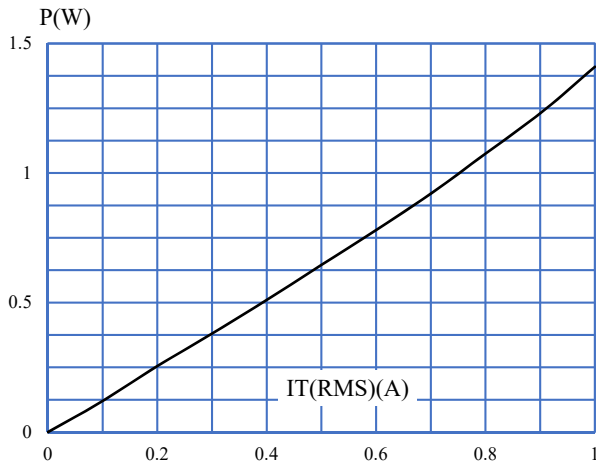


FIG.2: RMS on-state current versus case temperature

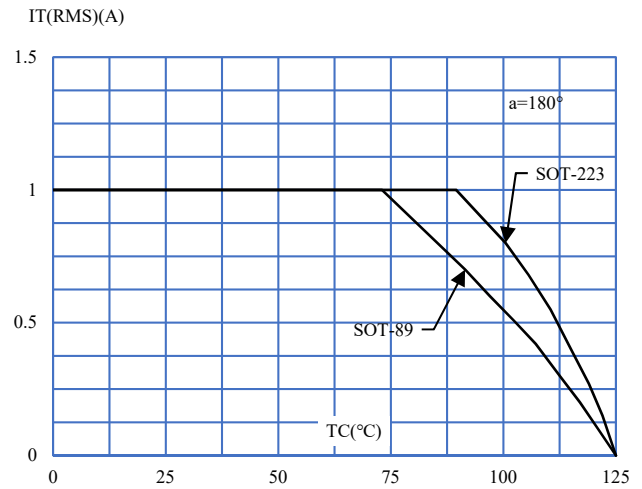


FIG.3: Surge peak on-state current versus number of cycles

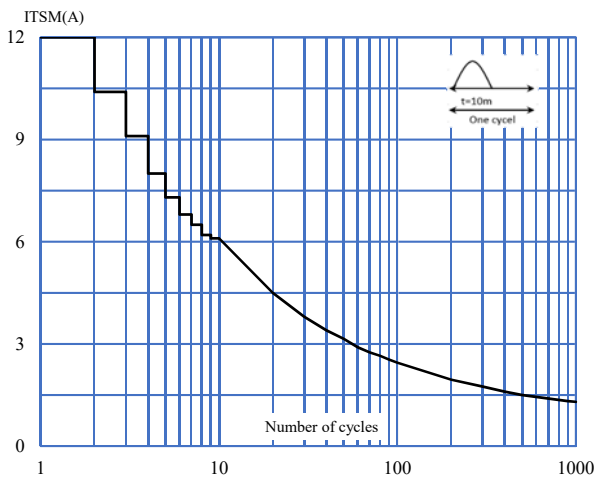


FIG.4: On-state characteristics (maximum values)

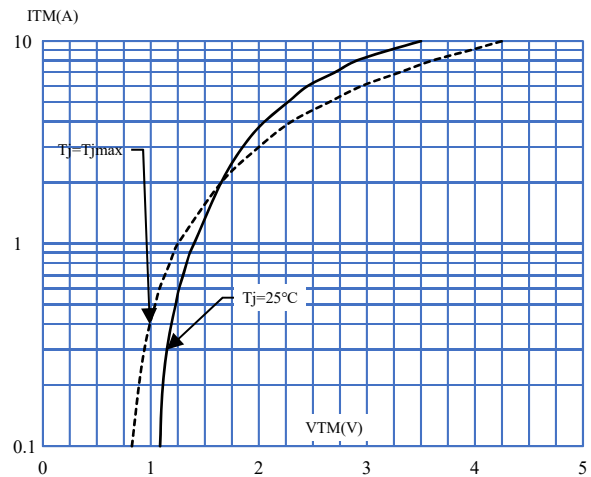


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I_2 t$ ($dI/dt < 50A/\mu s$)

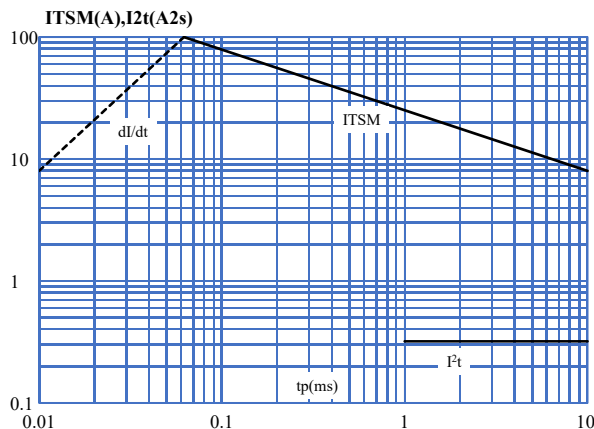
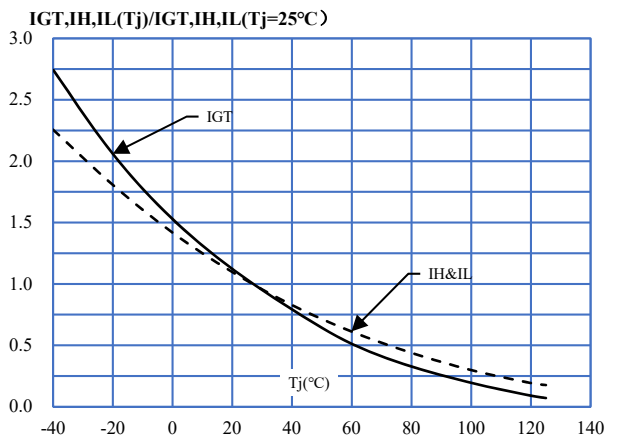
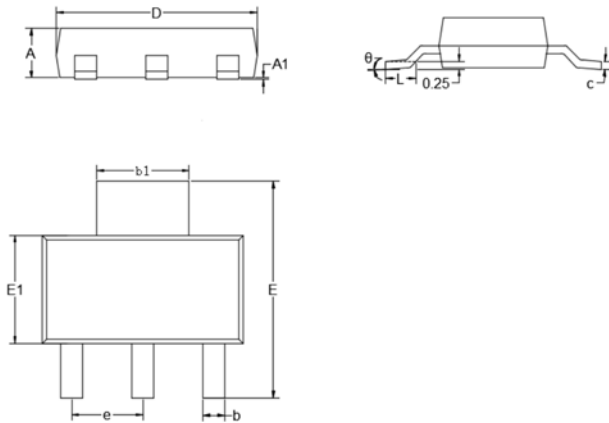


FIG.6: Relative variations of gate trigger current, holding current and latching



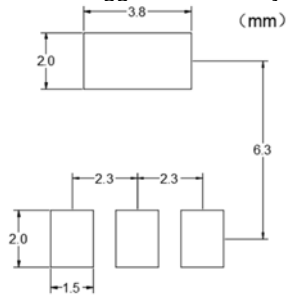
■ Outline Dimensions

➤ SOT-223 Package Outline Dimensions

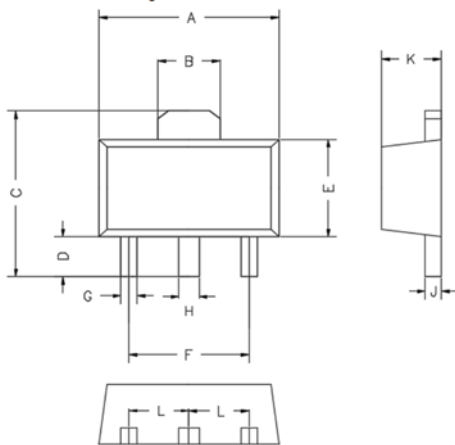


DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MM	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
θ	0°	10°	0°	10°

SOT-223 Suggested Pad Layout

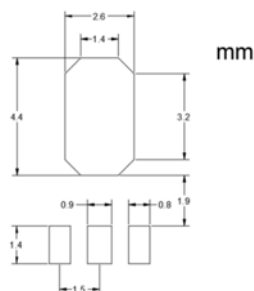


➤ SOT-89 Package Outline Dimensions

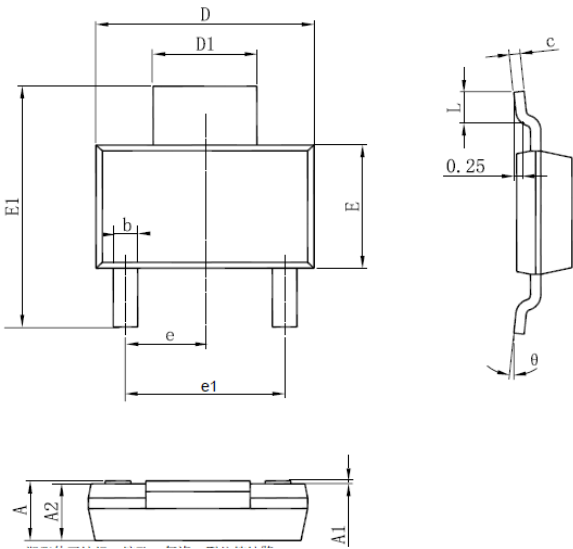


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.061		1.55		TYP
C	0.154	0.171	3.91	4.35	
D	0.031	0.047	0.80	1.20	
E	0.089	0.104	2.25	2.65	
F	0.118		3.00		TYP
G	0.013	0.020	0.33	0.52	
H	0.016	0.023	0.40	0.58	
J	0.014	0.017	0.35	0.44	
K	0.055	0.063	1.40	1.60	
L	0.059		1.50		TYP

SOT-89 Suggested Pad Layout

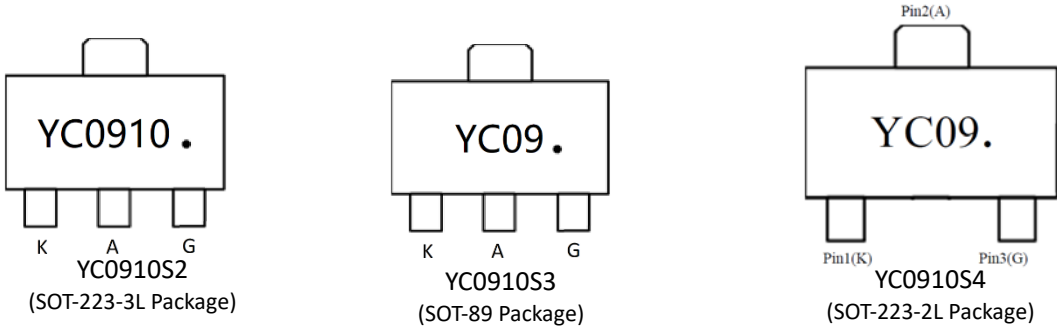


➤ SOT-223-2L Package Outline Dimensions



Ref.	Dimensions					
	Inches			Millimeters		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			0.0709	/	/	1.80
A1	0.00079		0.0039	0.02	/	0.10
A2	0.0591	0.063	0.0667	1.50	1.60	1.70
b	0.026	0.028	0.0331	0.66	0.71	0.84
c	0.0091	0.0118	0.0138	0.23	0.30	0.35
D	0.248	0.256	0.264	6.30	6.50	6.70
D1	0.114	0.118	0.122	2.90	3.00	3.10
E	0.13	0.138	0.146	3.30	3.50	3.70
E1	0.264	0.276	0.287	6.70	7.00	7.30
e	0.0906 BASIC			2.30 BASIC		
e1	0.181 BASIC			4.60 BASIC		
L	0.0295	/	/	0.75	/	/
θ	0°	/	10°	0°	/	10°

■ Marking Information



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