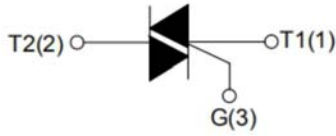


1A 4Q Triac



SOT-223-2L

Features

- On-state rms current, $I_{T(RMS)}$ 1 A
- Repetitive peak off-state voltage, V_{DRM}/V_{RRM} 800 V
- Triggering gate current, $I_{GT}(Q_1)$ 5 mA

Applications

- General purpose switching and phase control
- General purpose low power switching
- Solid-state relay

Mechanical Data

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

DEVICE	PACKAGE
ACY0810S4-01	SOT-223-2L

Main Characteristics

SYMBOL	LIMITS	UNIT
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	5	mA

Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Storage junction temperature range	T_{stg}	-40~150	°C
Junction temperature range	T_j	-40~125	°C
Repetitive surge peak Off-state voltage ($T_j=25^{\circ}\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^{\circ}\text{C}$)	V_{RRM}	800	V
RMS on-state current ($TC=80^{\circ}\text{C}$)	$I_{T(RMS)}$	1	A
Non-repetitive surge peak on-state current (full sine wave, $t_p=20\text{ms}$, $T_j=25^{\circ}\text{C}$)	I_{TSM}	16	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	1.28	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	I - II - III	50
		IV	10
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W



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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	QUADRANT	MIN	TYP	MAX
Gate trigger current	I _{GT}	mA	V _D =12V, R _L =33Ω	I - II - III			5
				IV			10
Gate trigger voltage	V _{GT}	V	V _D =12V, R _L =33Ω	I - II - III - IV			1.5
Non-triggering gate voltage	V _{GD}	V	V _D =V _{DRM}	I - II - III - IV	0.2		
Holding current	I _H	mA	I _T =100mA	I - II - III - IV			10
Latching current	I _L	mA	I _G =3I _{GT}	I - III - IV			10
				II			25
Rate of rise of off-state voltage	dV/dt	V/μs	V _D =0.66×V _{DRM} T _J =125°C Gate open	I - II - III - IV	5		

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MAX
Peak on-state voltage	V _{TM}	V	I _{TM} =5A t _p =380μs	1.7
Peak off-state current	I _{DRM} I _{RRM}	μA	V _{DRM} = V _{RRM} , T _J =25°C	5
Peak reverse current		mA	V _{DRM} = V _{RRM} , T _J =125°C	0.5

■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



■ Characteristics (Typical)

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

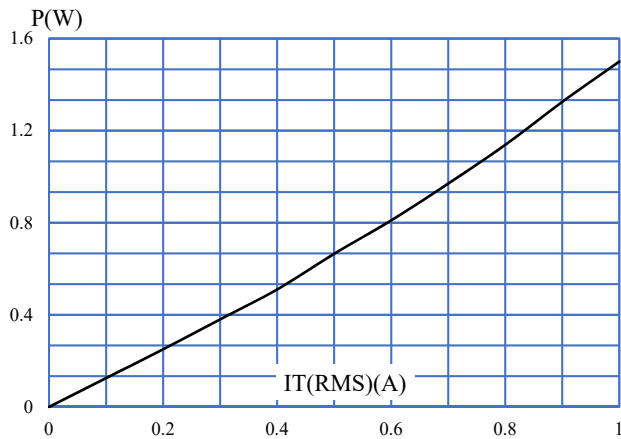


FIG.2: RMS on-state current versus case temperature

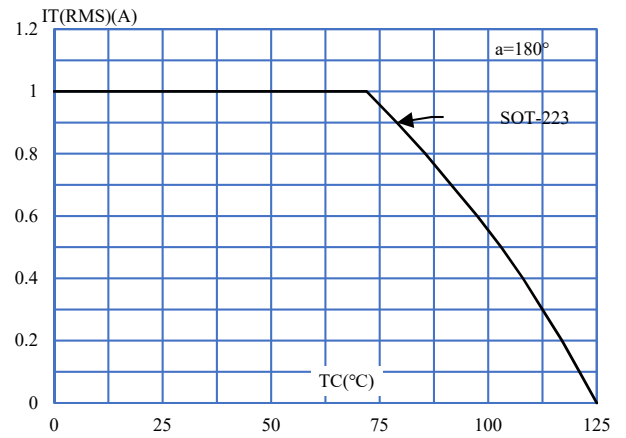


FIG.3: Surge peak on-state current versus number of cycles

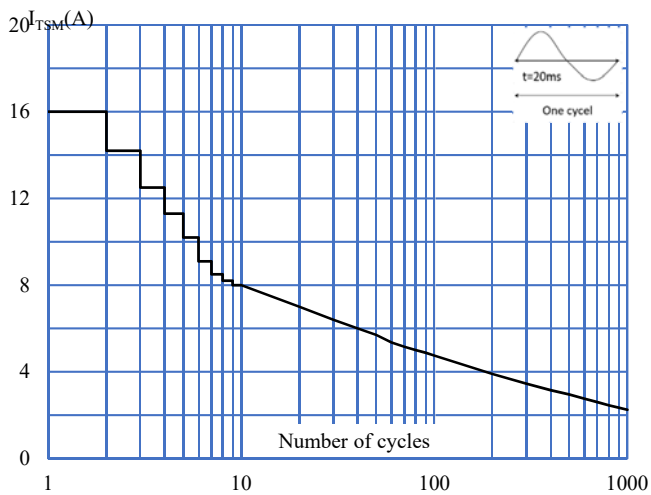


FIG.4: On-state characteristics (maximum values)

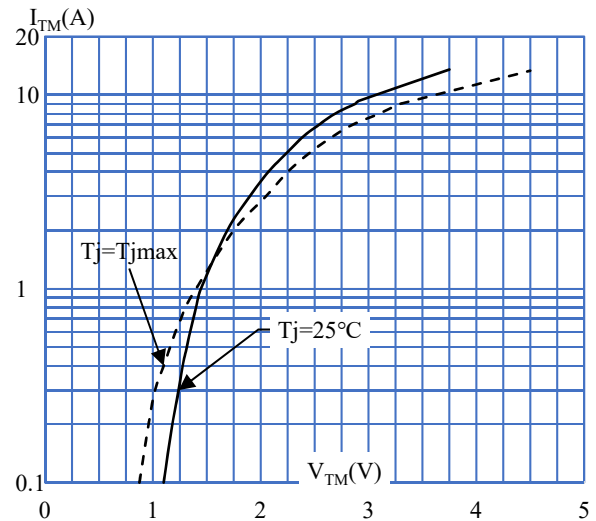


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of $I_2 t$ ($dI/dt < 50A/\mu s$)

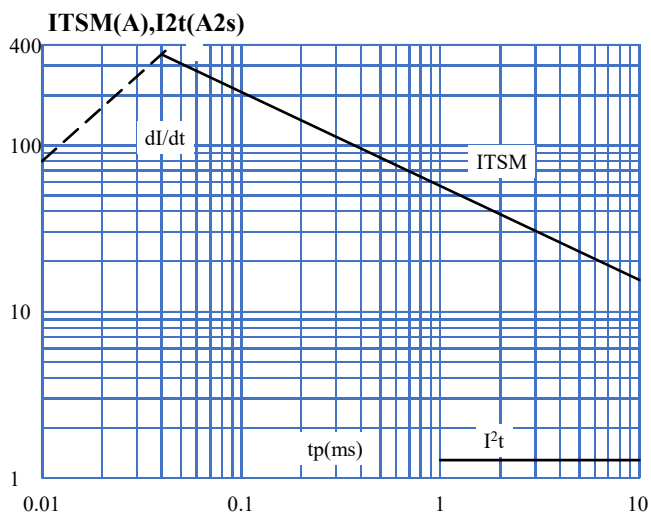
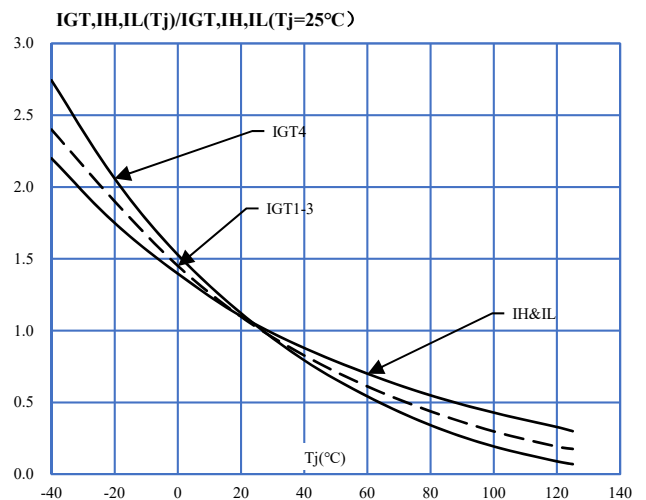


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

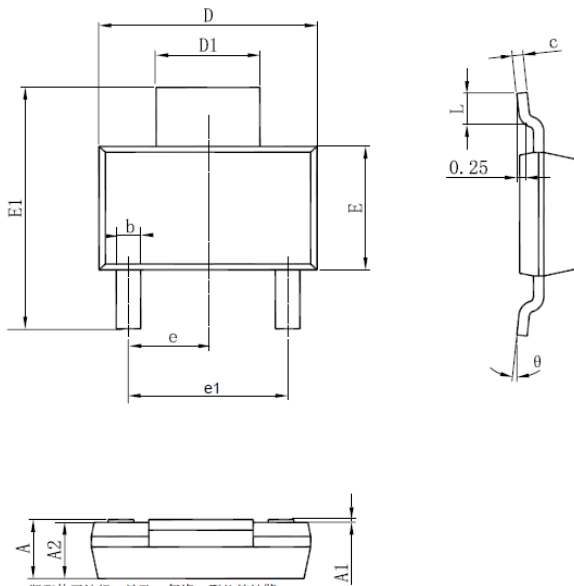




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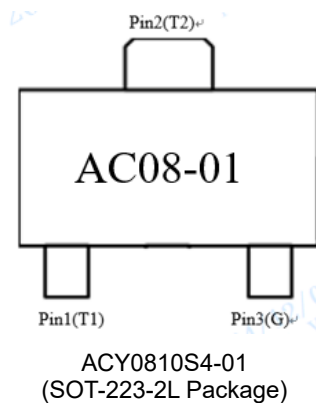
■ Outline Dimensions

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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