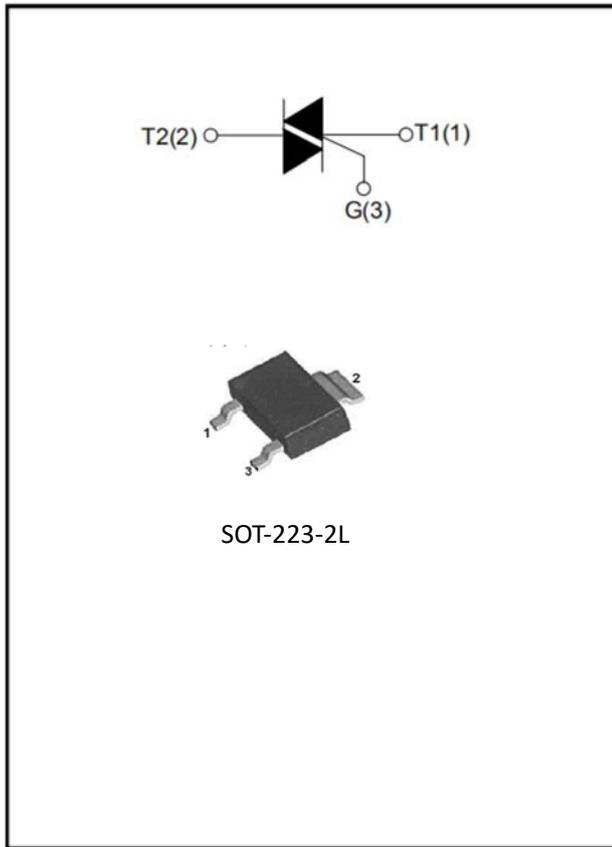


## 1A 4Q Triac



### Features

- On-state rms current,  $I_{T(RMS)}$  1 A
- Repetitive peak off-state voltage,  $V_{DRM}/V_{RRM}$  800 V
- Triggering gate current,  $I_{GT(Q1)}$  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	$\text{A}^2\text{s}$
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



# ACY0810S4-01

## ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	QUADRANT	MIN	TYP	MAX
Gate trigger current	I <sub>GT</sub>	mA	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω	I - II - III			5
				IV			10
Gate trigger voltage	V <sub>GT</sub>	V	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω	I - II - III - IV			1.5
Non-triggering gate voltage	V <sub>GD</sub>	V	V <sub>D</sub> =V <sub>DRM</sub>	I - II - III - IV	0.2		
Holding current	I <sub>H</sub>	mA	I <sub>T</sub> =100mA	I - II - III - IV			10
Latching current	I <sub>L</sub>	mA	I <sub>G</sub> =3I <sub>GT</sub>	I - III - IV			10
				II			25
Rate of rise of off-state voltage	dV/dt	V/μs	V <sub>D</sub> =0.66×V <sub>DRM</sub> T <sub>J</sub> =125°C Gate open	I - II - III - IV	20		50

## ■Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MAX
Peak on-state voltage	V <sub>TM</sub>	V	I <sub>TM</sub> =1.4A t <sub>p</sub> =380μs	1.5
Peak off-state current Peak reverse current	I <sub>DRM</sub> I <sub>RDM</sub>	μA	V <sub>DRM</sub> =V <sub>RDM</sub> , T <sub>J</sub> =25°C	5
		mA	V <sub>DRM</sub> =V <sub>RDM</sub> , T <sub>J</sub> =125°C	0.5

## ■Thermal Resistance (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Pacakge	Value
Thermal Resistance (Typical)	Junction to case	R <sub>θJ-C</sub>	SOT-223	31



■ Characteristics (Typical)

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

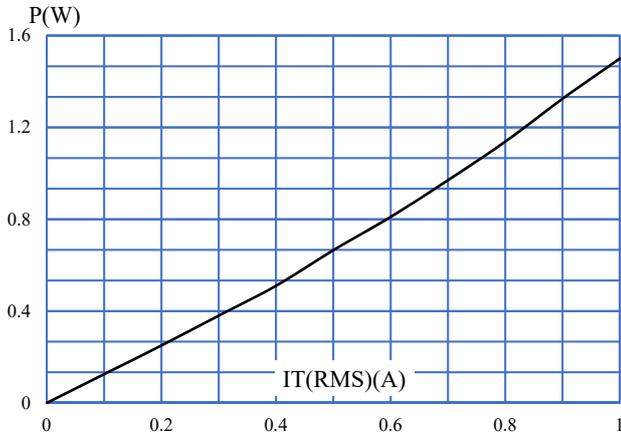


FIG.2: RMS on-state current versus case temperature

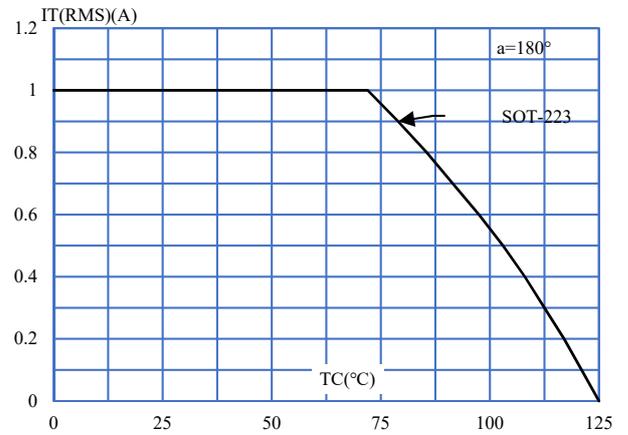


FIG.3: Surge peak on-state current versus number of cycles

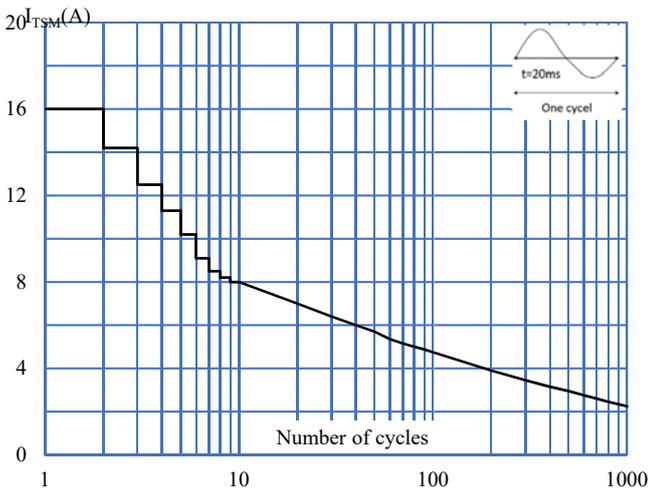


FIG.4: On-state characteristics (maximum values)

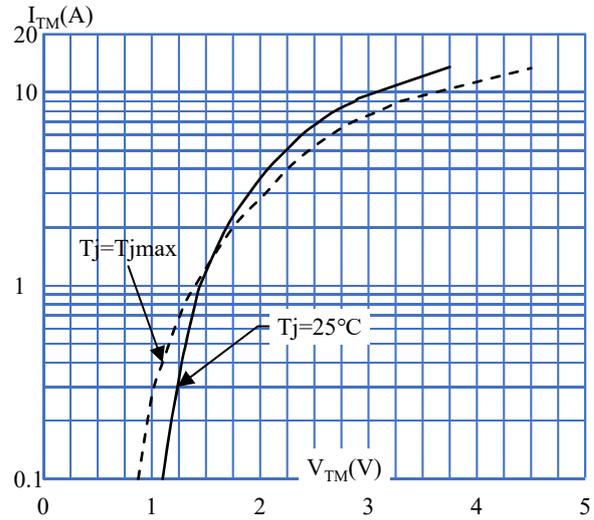


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I_2 t$  ( $dI/dt < 50\text{A}/\mu\text{s}$ )

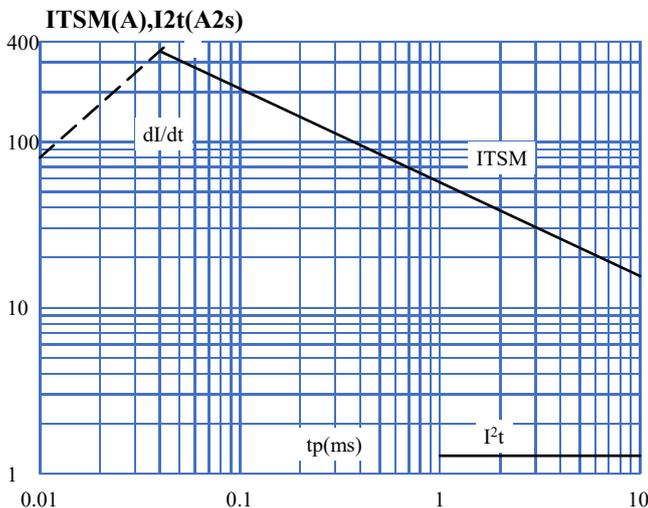
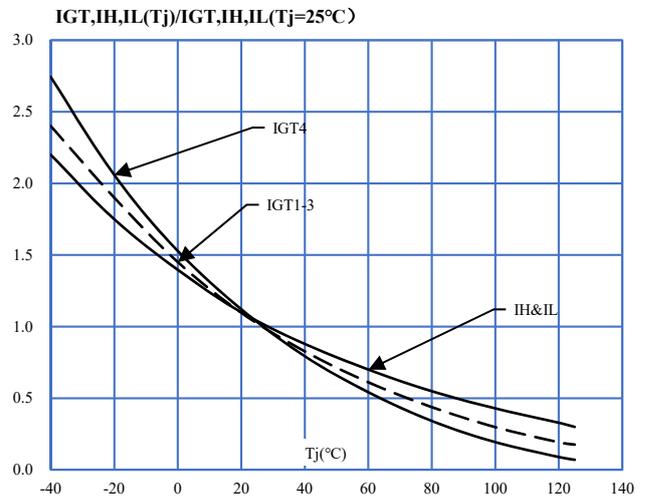


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

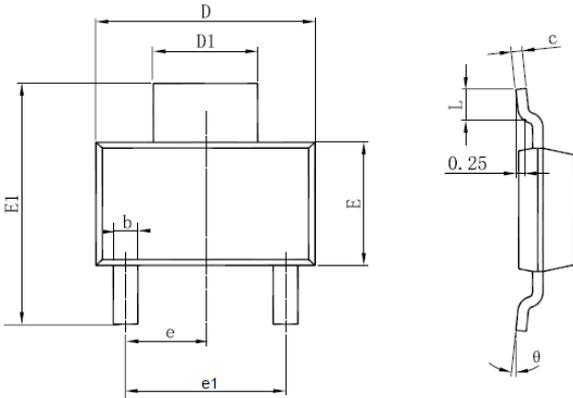




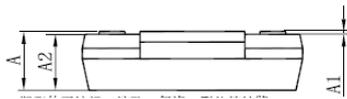
# ACY0810S4-01

## ■ Outline Dimensions

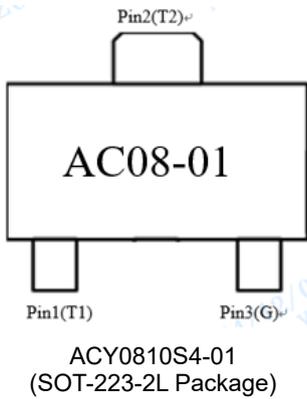
SOT-223-2L Package Outline Dimensions



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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