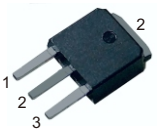
AC Switch TRIACs, 2A

FEATURES

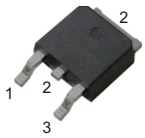
- High noise immunity - static dV/dt ≥ 500 V/μS
- High tolerance to external severe application environment such as EMC
- High voltage blocking capability

APPLICATIONS

ACS2T series triacs provide high dV/dt rate with strong resistance to electromagnetic interference, intended for use in AC static switching in appliances and industrial control systems,driving low power highly inductive loads like relay, solenoid, pump, fan, and micro-motor.

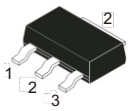


TO-251-4R **(I-PAK)**
(ACS2TxxF)

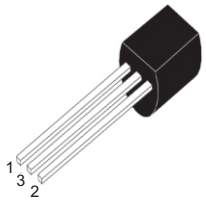


TO-252-4R **(D-PAK)**
(ACS2TxxG)

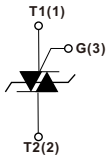
ITO-220AB/TO-220F
(ACS2TxxAF)



SOT-223
(ACS2TxxS)



TO-92
(ACS2TxxE)



MAIN FEATURES

SYMBOL	VALUE	UNIT
$I_{T(RMS)}$	2	A
V_{DRM}/V_{RRM}	1000	V
I_{GT}	10/25	mA

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUE	UNIT
RMS on-state current (full sine wave)	$I_{T(RMS)}$	TO-92	T_C = 90°C	2	A
		TO-220F (insulate)	T_C = 100°C		
		SOT-223/TO-251-4R/TO-252-4R	T_C = 103°C		
Non repetitive surge peak on-state current (full cycle, T_J initial = 25°C)	I_{TSM}	F = 50 Hz	T_p = 10 ms	20	A
		F = 60 Hz	T_p = 8.3 ms	21	
I^2t Value for fusing	I^2t	t_p = 10 ms		2	A^2s
Repetitive peak off-state voltage	V_{DRM}	T_J = 25°C		1000	V
Repetitive peak reverse voltage	V_{RRM}				
Critical rate of rise of on-state current $I_G = 2xI_{GT}$, t_r≤100ns	dI/dt	F = 100 Hz	T_J =125°C	50	A/μs
Peak gate current	I_{GM}	T_p< 2μs	T_J =80°C	1	A
Average gate power dissipation	$P_{G(AV)}$	T_J = 80°C		0.1	W
Peak gate power dissipation	P_{GM}	T_J = 80°C		1	
Stroage temperature range	T_{stg}			- 40 to + 150	°C
Operating junction temperature range	T_J			- 40 to + 125	

◎ ELECTRICAL CHARACTERISTICS (T_J= 25 ºC unless otherwise specified)

3 quadrants

SYMBOL	TEST CONDITIONS	QUADRANT		ACS2Txxxx		UNIT
				SW	CW	
I_{GT}(1)	V_D = 12 V, R_L = 33Ω	Ⅰ - Ⅱ - Ⅲ	MAX.	10	25	mA
V_{GT}		Ⅰ - Ⅱ - Ⅲ		1.3		V
V_{GD}	V_D = V_{DRM}, R_L = 3.3KΩ, T_j = 125°C	Ⅰ - Ⅱ - Ⅲ		0.2		V
I_H(2)	I_T = 100 mA		MAX.	10	40	mA
I_L	I_G = 1.2 I_{GT}	Ⅰ - Ⅲ	MAX.	25	50	mA
		Ⅱ		35	60	
dV/dt	V_D = 67% V_{DRM}, gate open, T_j = 125°C		MIN.	600	1000	V/μs

STATIC CHARACTERISTICS

SYMBOL	TEST CONDITIONS			VALUE	UNIT
V_{TM}(2)	I_{TM} = 2.8A, t_P = 380 μs	T_J = 25°C	MAX.	1.55	V
V_{TO}(2)	Threshold voltage	T_J = 125°C	MAX.	0.90	
R_D(2)	Dynamic resistance	T_J = 125°C	MAX.	250	mΩ
I_{DRM} I_{RRM}	V_D = V_{DRM} V_R = V_{RRM}	T_J = 25°C	MAX.	10	μA
		T_J = 125°C		1000	

Note 1: Minimum I_{GT} is guaranted at 5% of I_{GT} max.
Note 2: For both polarities of T2 referenced to T1.

THERMAL RESISTANCE

SYMBOL			VALUE	UNIT
$R_{th(j-c)}$	Junction to case (AC)	TO-251-4R/TO-252-4R	4.5	°C/W
		TO-92	11.2	
		SOT-223	5.8	
		TO-220F(insulate)	7.5	

PRODUCT SELECTOR

PART NUMBER	VOLTAGE (xx)	SENSITIVITY	TYPE	PACKAGE
	1000 V			
ACS2TxxS-SW	V	10mA	3 Quadrants	SOT-223
ACS2TxxS-CW	V	25mA	3 Quadrants	SOT-223
ACS2TxxE-SW	V	10mA	3 Quadrants	TO-92
ACS2TxxE-CW	V	25mA	3 Quadrants	TO-92
ACS2TxxF-SW	V	10mA	3 Quadrants	TO-251-4R
ACS2TxxF-CW	V	25mA	3 Quadrants	TO-251-4R
ACS2TxxG-SW	V	10mA	3 Quadrants	TO-252-4R
ACS2TxxG-CW	V	25mA	3 Quadrants	TO-252-4R
ACS2TxxAF-SW	V	10mA	3 Quadrants	TO-220F
ACS2TxxAF-CW	V	25mA	3 Quadrants	TO-220F

ORDERING INFORMATION

ORDERING TYPE	MARKING	PACKAGE	WEIGHT	BASE Q'TY	DELIVERY MODE
ACS2TxxS-YY	ACS2TxxS-YY	SOT-223	980g	4000	7" T&R
ACS2TxxE-YY	ACS2TxxE-YY	TO-92	0.2g	500	Bag
ACS2TxxF-YY	ACS2TxxF-YY	TO-251-4R(I-PAK)	0.4g	80	Tube
ACS2TxxG-YY	ACS2TxxG-YY	TO-252-4R(D-PAK)	0.38g	80	Tube
ACS2TxxAF-YY	ACS2TxxAF-YY	TO-220F	2.5g	50	Tube

Note: xx = voltage, yy = sensitivity

ORDERING INFORMATION SCHEME

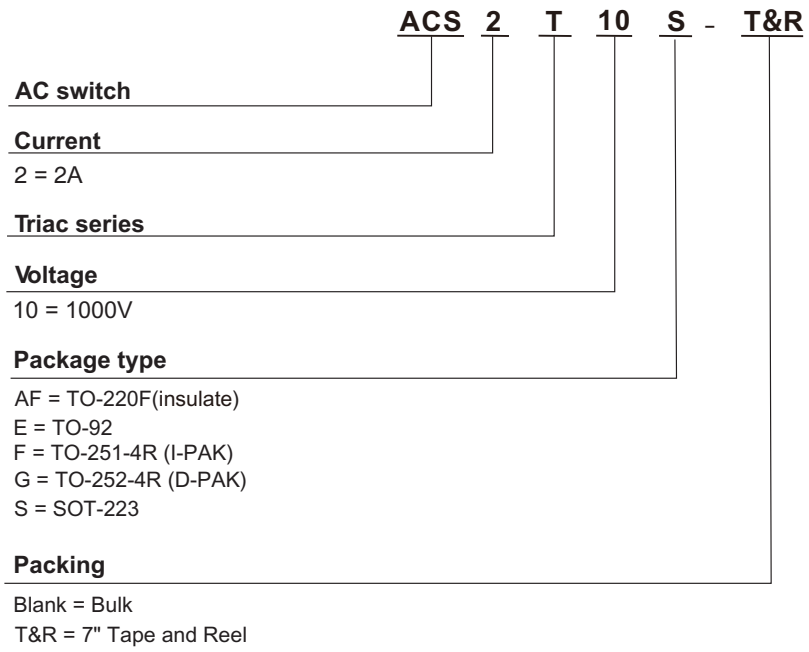


Fig.1 Maximum power dissipation vs. RMS on-state current

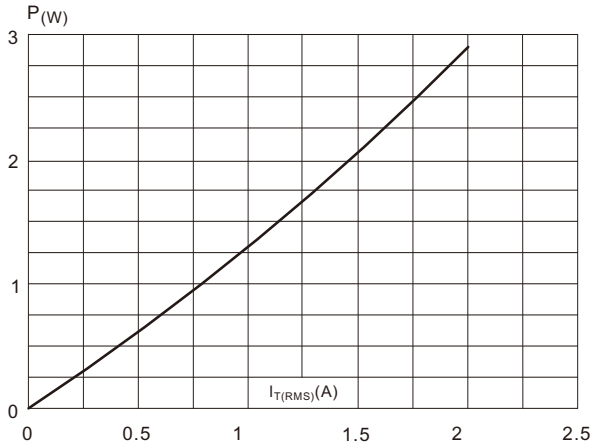


Fig.2 RMS on-state current vs. case temperature

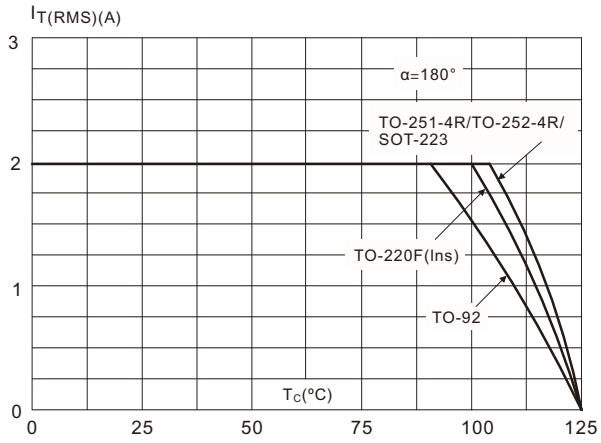


Fig.3 On-state characteristics (maximum values)

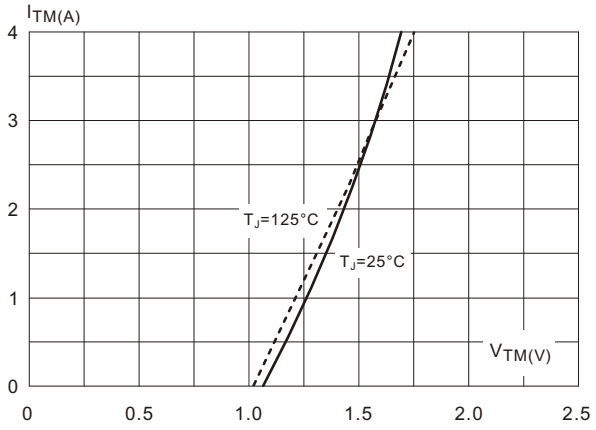


Fig.4 Surge peak on-state current vs. number of cycles.

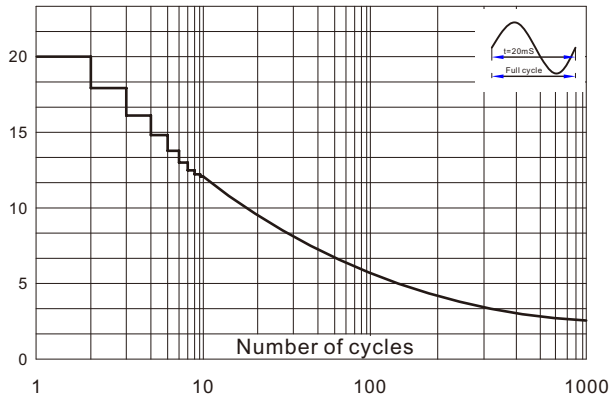


Fig.5 Relative variation of gate trigger current versus junction temperature (typical values).

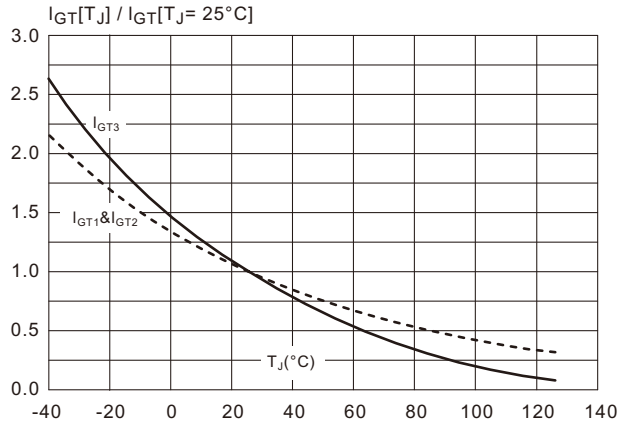
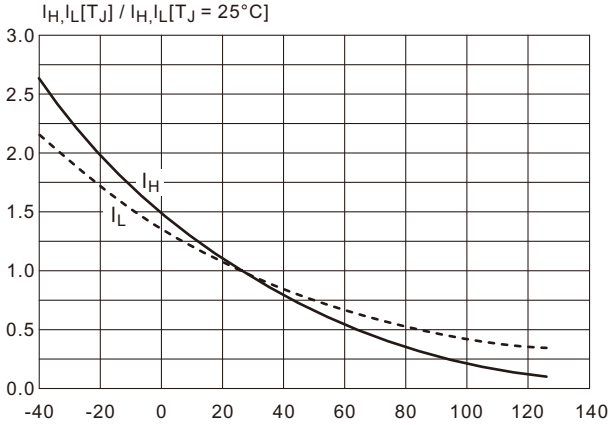
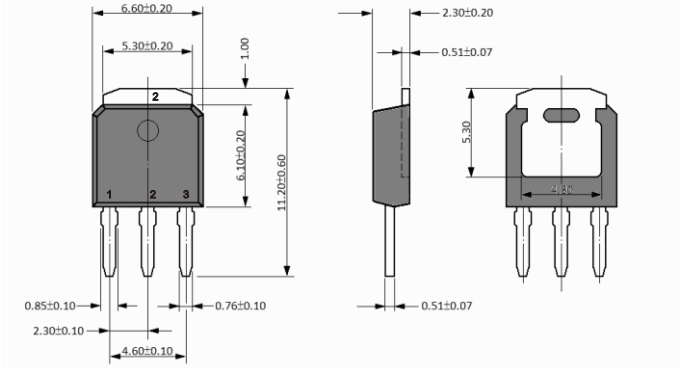


Fig.6 Relative variation of holding current and latching current versus junction temperature (typical values).

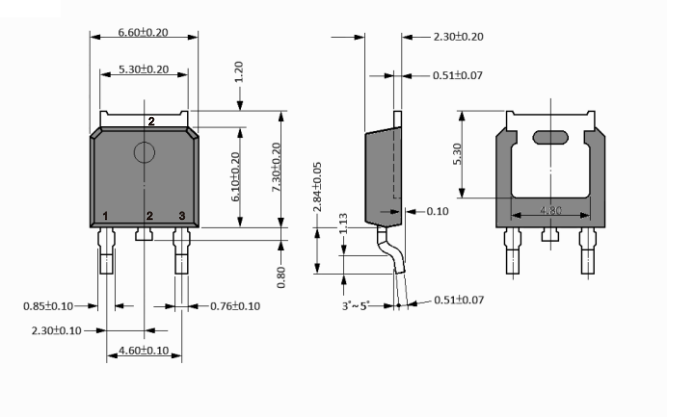


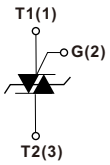
Case Style

TO-251-4R
(I-PAK)



TO-252-4R
(D-PAK)

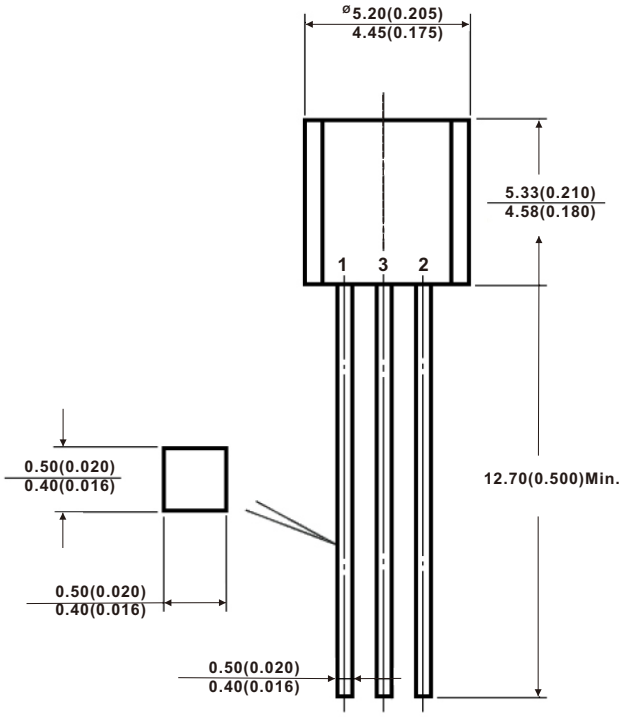


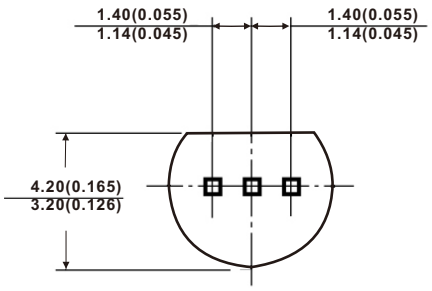


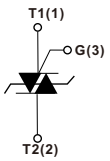
All dimensions in millimeters(inches)

Case Style

TO-92



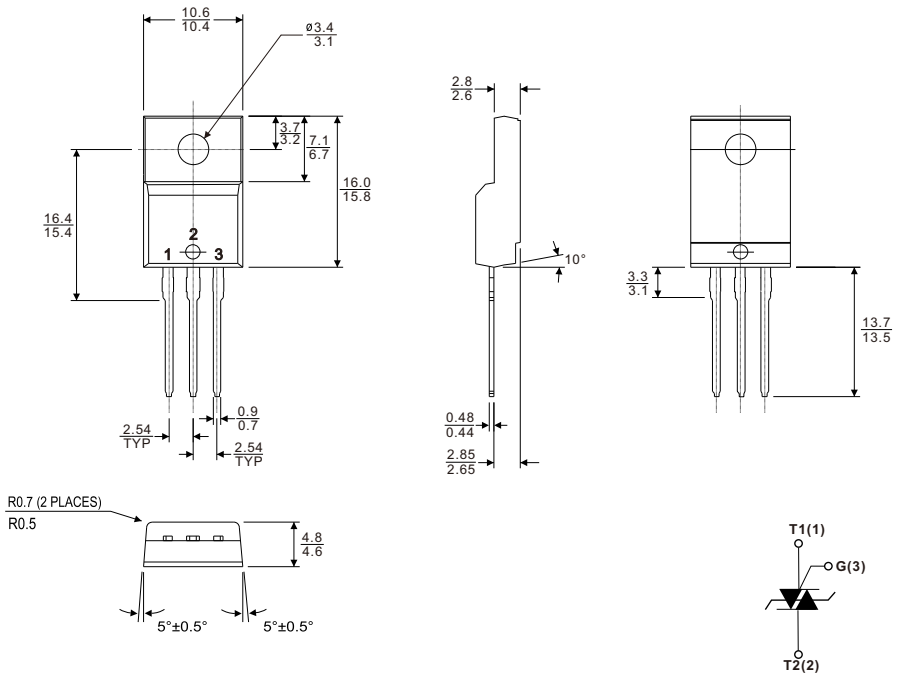




All dimensions in millimeters(inches)

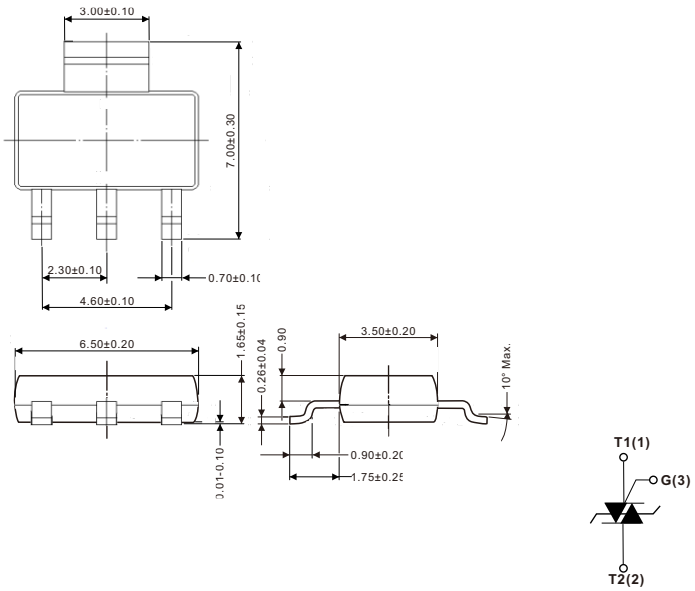
Case Style

ITO-220AB(TO-220F)



All dimensions in millimeters(inches)

SOT-223



All dimensions in millimeters(inches)