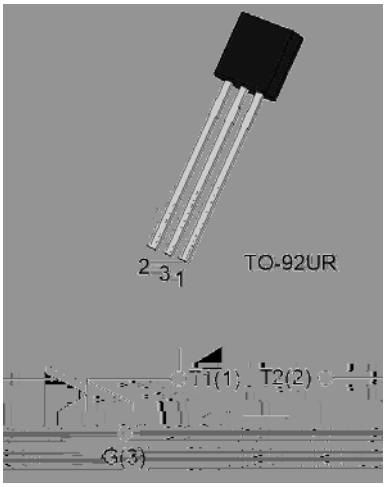
JST01UR-1000SW 1A TRIAC

Rev.A.2.1

DESCRIPTION:

The JST01UR-1000SW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. JST01UR-1000SW snubberless triac is especially recommended for use on inductive loads. It can be driven directly through the MCU I/O port. Package TO-92UR is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM} /V_{RRM}	1000	V
I_{GT} / /	10/10/10	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	
Operating junction temperature range	T_j	-40-125	
Repetitive peak off-state voltage (T_j=25)	V_{DRM}	1000	V
Repetitive peak reverse voltage (T_j=25)	V_{RRM}	1000	V
RMS on-state current ($T_C \leq$ 45)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25)	I_{TSM}	15	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25)		16.5	
I^2t value for fusing (t_p=10ms , T_j=25)	I^2t	1.25	A^2s
Critical rate of rise of on-state current (I_G=2 × I_{GT} , f=100Hz , T_j=125)	dI/dt	100	A/μs
Peak gate current (t_p=20μs , T_j=125)	I_{GM}	1	A
Average gate power dissipation (T_j=125)	$P_{G(AV)}$	0.1	W

Peak gate power	P_{GM}	2	W
Peak pulse voltage (T_j=25 ; non-repetitive,off-state;FIG.7)	V_{pp}	4	kV

ELECTRICAL CHARACTERISTICS (T_j=25 unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	V_D =12V R_L =33Ω	- -	MAX.	10	mA
V_{GT}		- -	MAX.	1	V
V_{GD}	V_D =V_{DRM} T_j =125 R_L =3.3kΩ	- -	MIN.	0.2	V
I_L	I_G =1.2I_{GT}	-	MAX.	20	mA
				40	
I_H	I_T =100mA		MAX.	15	mA
dV/dt	V_D=670V Gate Open T_j =125		MIN.	200	V/μs
(dI/dt)c	(dV/dt)c=10V/μs T_j=125		MIN.	1	A/ms
t_{on}	I_G=20mA I_A=200mA I_R=20mA T_j=25		TYP.	2.5	μs
t_{off}				25	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM} =1.4A t_p=380μs	T_j=25	1.3	V
V_{TO}	Threshold voltage	T_j=125	0.93	V
R_D	Dynamic resistance	T_j=125	146	mΩ
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25	8	μA
I_{RRM}		T_j=125	0.2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	65	/W
$R_{th(j-a)}$	junction to ambient (AC)	150	/W

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

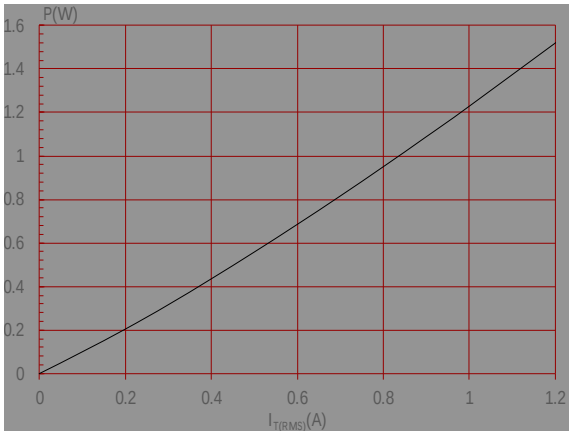


FIG.2: RMS on-state current versus case temperature

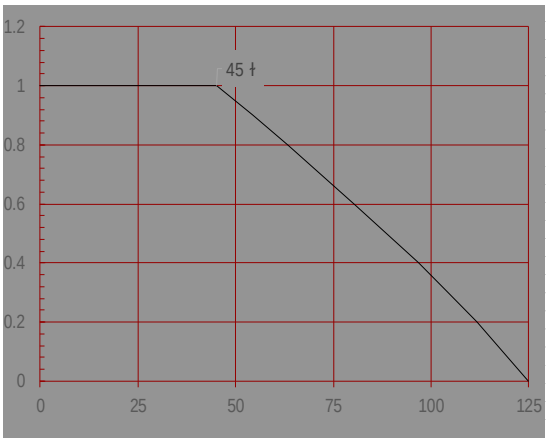
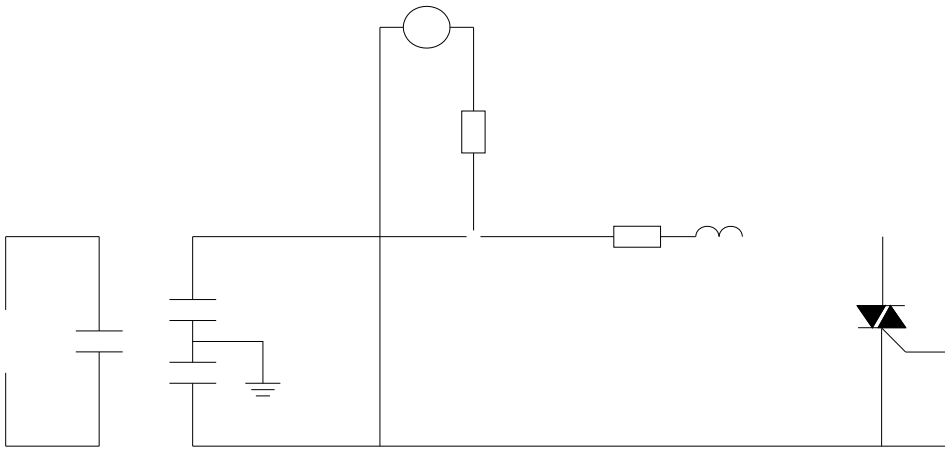


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



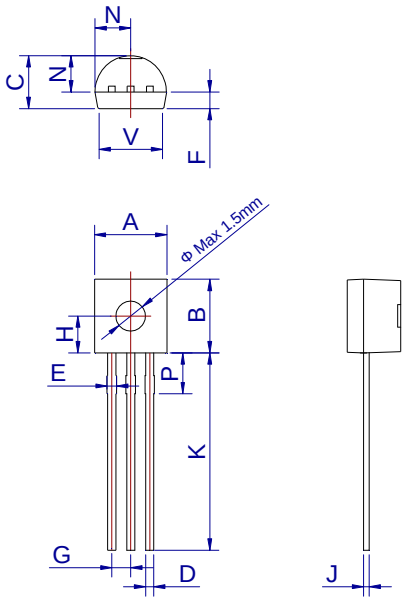
J

O



TE

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	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
E	0.50		0.70	0.020		0.028
F	1.10		1.30			0.051
G	1.10		1.40	0.043		0.055
H	2.20		2.40	0.087		0.094
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.80		2.30	0.071		0.091
V	4.10		4.50	0.161		0.177

DELIVERY MODE

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92UR	Bulk Pack	1,000	10,000	50,000

Dimensions						
Ref.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
P	12.40	12.70	13.00	0.488	0.500	0.512
P0	12.40	12.70	13.00	0.488	0.500	0.512
P1	3.55	3.85	4.15	0.140	0.152	0.163
P2	5.95	6.35	6.75	0.233	0.250	0.265
P	-1.00	0	1.00	-0.039	0	0.039
F1 F2	2.30	2.50	2.70	0.090	0.098	0.106
F1-F2	-0.10	0	0.10	-0.004	0	0.004
W	17.50	18.00	19.00	0.689	0.709	0.748
W0	5.50	6.00	6.50	0.217	0.236	0.256
W1	8.50	9.00	9.50	0.335	0.354	0.374
W2			1.00			0.039
D0	3.80	4.00	4.20	0.150	0.157	0.165
H	-1.00	0	1.00	-0.039	0	0.039
L1	2.50			0.098		
H	18.00	19.00	20.00	0.709	0.748	0.787

n ‘
я‘