JPTT04K-800SW 4A TRIACs

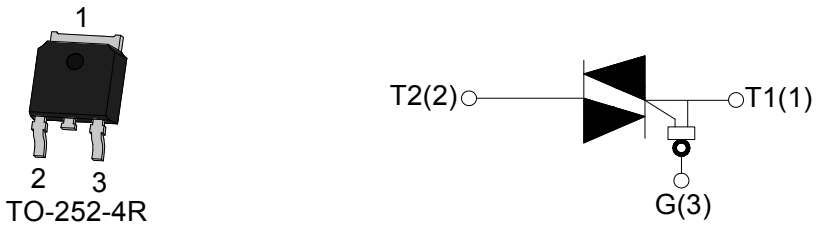
Rev.A-1

DESCRIPTION:

Available in surface-mount package, the JPTT04K-800SW can be used as an AC static ON/OFF function in domestic and industrial control systems, or as a driver of low power and high inductance loads, such as solenoid valves, pumps, fans, micro-motors. JPTT04K-800SW is loaded with a planar chip which is Pb-free. Package TO-252-4R is RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM} /V_{RRM}	800	V
I_{GT}	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}	800	V
Repetitive peak reverse voltage(T_j =25℃)		V_{RRM}	800	V
RMS on-state current	TO-252-4R (T_C=100℃)	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (tp=20ms)		I_{TSM}	40	A
I^2t value for fusing (tp=20ms)		I^2t	8	A^2s
Rate of rise of on-state current (I_G =2×I_{GT})		dI/dt	50	A/μs
Peak gate current		I_{GM}	1	A
Average gate power dissipation		$P_{G(AV)}$	0.1	W
Peak pulse voltage (Tj=25℃; non-repetitive,off-state;FIG.7)		V_{PP}	2.5	kV

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D=12V R_L=33Ω	Ⅱ-Ⅲ	MAX	10	mA
V_{GT}		Ⅱ-Ⅲ	MAX	1.5	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	Ⅱ-Ⅲ	MIN	0.2	V
I_L	I_G=1.2I_{GT}	Ⅱ	MAX	40	mA
		Ⅲ		30	
I_H	I_T=100mA		MAX	20	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	500	V/μs

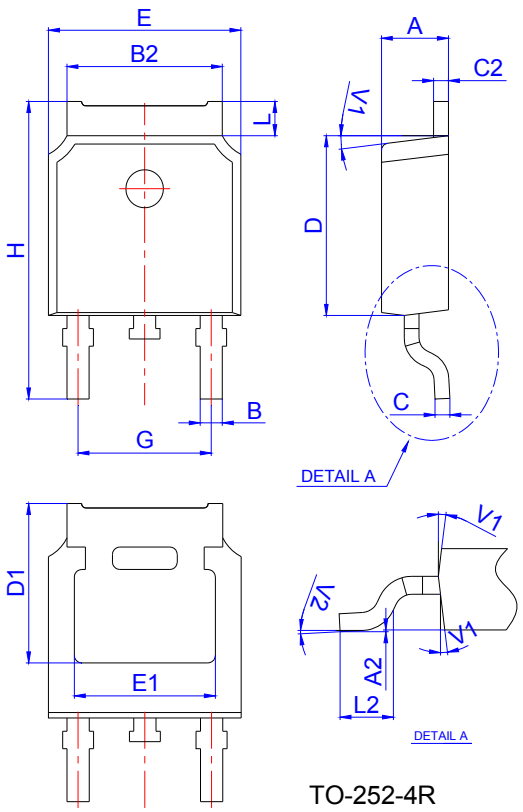
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM}=5A tp=380μs	T_j=25℃	1.6	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	1	μA
I_{RRM}		T_j=125℃	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252-4R	3.4	℃/W
$R_{th(j-a)}$	junction to ambient		70	

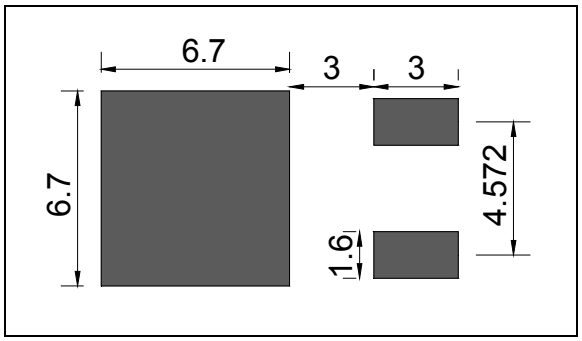
PACKAGE MECHANICAL DATA



TO-252-4R

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

FOOTPRINT-TO-252-4R (dimensions in mm)



MARKING

PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-252-4R	TUBE	80	4,000	20,000
PACKAGE	**OUTLINE**	**REEL (PCS)**	**PER CARTON (PCS)**	**TAPE & REEL**
TO-252-4R	TAPING	2,500	25,000	13 inch

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

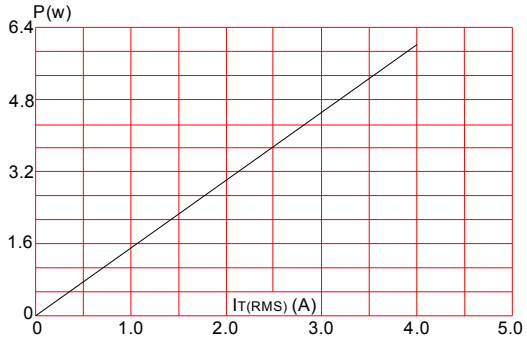


FIG.2: RMS on-state current versus case temperature

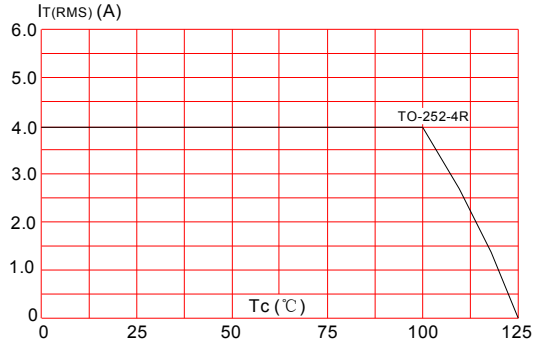


FIG.3: Surge peak on-state current versus number of cycles

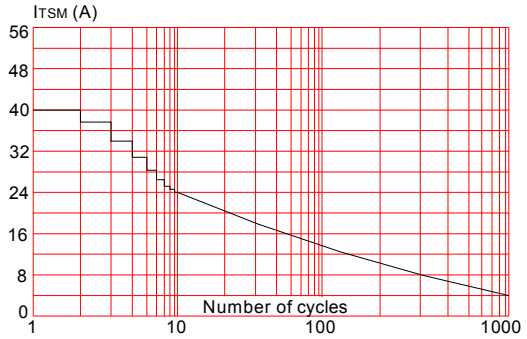


FIG.4: On-state characteristics (maximum values)

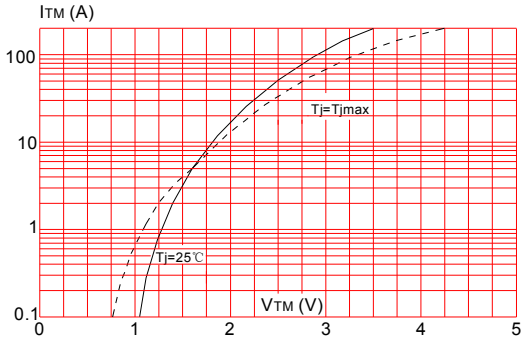


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms, and corresponging value of I^2t (dI/dt < 50A/ μs)

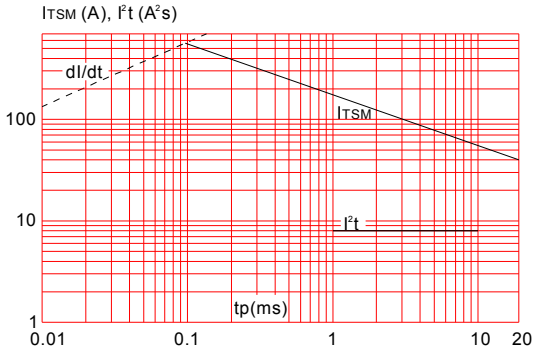


FIG.6: Relative variations of gate trigger current versus junction temperature

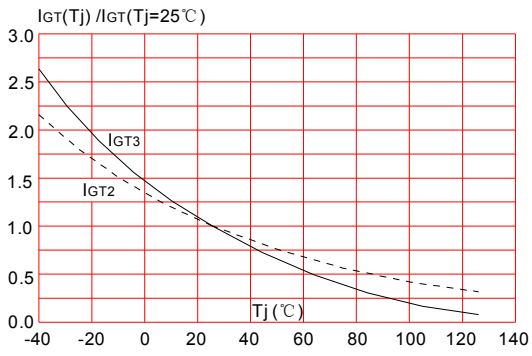
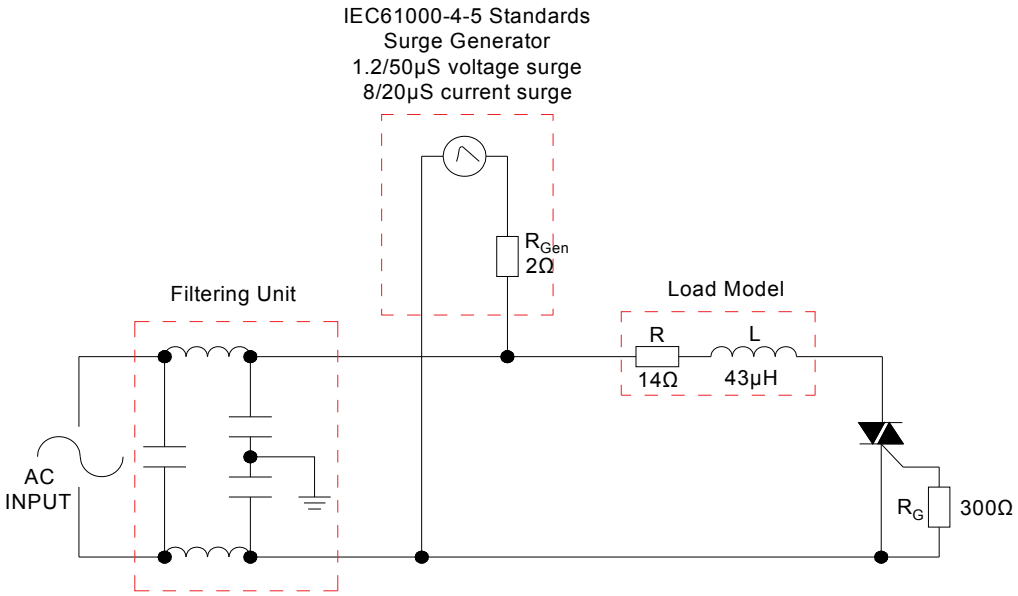
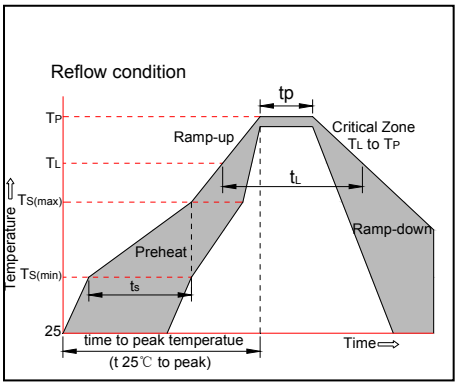


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L)to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃



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