



### DESCRIPTION:

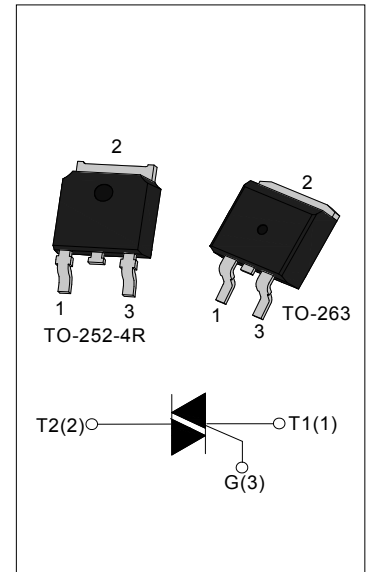
With high ability to withstand the shock loading of large current, JST08 series triacs provide high dv/dt rate with strong resistance to electromagnetic interference. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.

Package TO-263 and TO-252-4R are RoHS compliant.

(2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
$V_{DRM} / V_{RRM}$	600/800/1200	V



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	$T_{stg}$	-40 - 150	°C	
Operating junction temperature range	$T_j$	-40 - 125	°C	
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	600/800/1200	V	
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	600/800/1200	V	
Non repetitive surge peak Off-state voltage	$V_{DSM}$	$V_{DRM} + 100$	V	
Non repetitive peak reverse voltage	$V_{RSM}$	$V_{RRM} + 100$	V	
RMS on-state current	$I_{T(RMS)}$	TO-263 ( $T_c=90^\circ\text{C}$ )	8	A
		TO-252-4R ( $T_c=100^\circ\text{C}$ )		
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	80	A	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )	$I^2t$	32	$\text{A}^2\text{s}$	
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	$di/dt$	50	$\text{A}/\mu\text{s}$	
Peak gate current	$I_{GM}$	4	A	
Average gate power dissipation	$P_{G(AV)}$	1	W	
Peak gate power	$P_{GM}$	5	W	

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value				Unit
				TW	SW	CW	BW	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	5	10	35	50	mA
$V_{GT}$		I - II -III	MAX	1.5				V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	I - II -III	MIN	0.2				V
$I_L$	$I_G=1.2I_{GT}$	I -III	MAX	20	25	50	70	mA
		II		25	35	70	90	
$I_H$	$I_{TM}=100\text{mA}$		MAX	15	20	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	50	200	500	1000	V/ $\mu\text{s}$

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				C	B	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	25	50	mA
		IV		50	70	
$V_{GT}$		ALL	MAX	1.5		V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2		V
$I_L$	$I_G=1.2I_{GT}$	I -III-IV	MAX	50	70	mA
		II		70	90	
$I_H$	$I_{TM}=200\text{mA}$		MAX	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	200	500	V/ $\mu\text{s}$

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=11\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	1	mA

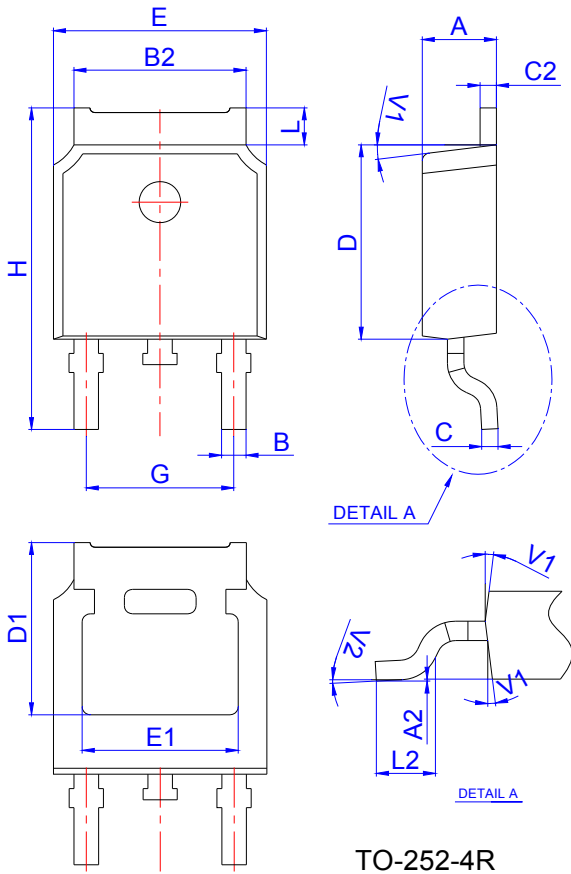
## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	junction to case(AC)	TO-263	3.0
		TO-252-4R	2.1
R <sub>th(j-a)</sub>	junction to ambient	TO-263	45
		TO-252-4R	70

## ORDERING INFORMATION

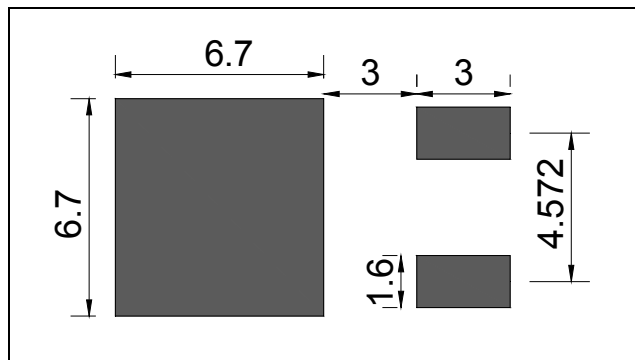
<p>JieJie Microelectronics Co.,Ltd</p>	<p><b>J</b></p> <p>Triacs</p> <p><math>I_{T(RMS)}:8A</math></p> <p>E:TO-263 ETR:TO-263(Tape&amp;Reel) K:TO-252-4R KTR:TO-252-4R(Tape&amp;Reel)</p>	<p><b>ST</b></p>	<p><b>08</b></p>	<p><b>C</b></p>	<p><b>-800</b></p> <p>600:<math>V_{DRM} / V_{RRM} \geq 600V</math> 800:<math>V_{DRM} / V_{RRM} \geq 800V</math> 1200:<math>V_{DRM} / V_{RRM} \geq 1200V</math></p>	<p><b>SW</b></p> <p>TW: <math>I_{GT1-3} \leq 5mA</math> SW: <math>I_{GT1-3} \leq 10mA</math> CW: <math>I_{GT1-3} \leq 35mA</math> BW: <math>I_{GT1-3} \leq 50mA</math> C: <math>I_{GT1-3} \leq 25mA</math> <math>I_{GT4} \leq 50mA</math> B: <math>I_{GT1-3} \leq 50mA</math> <math>I_{GT4} \leq 70mA</math></p>
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PACKAGE MECHANICAL DATA

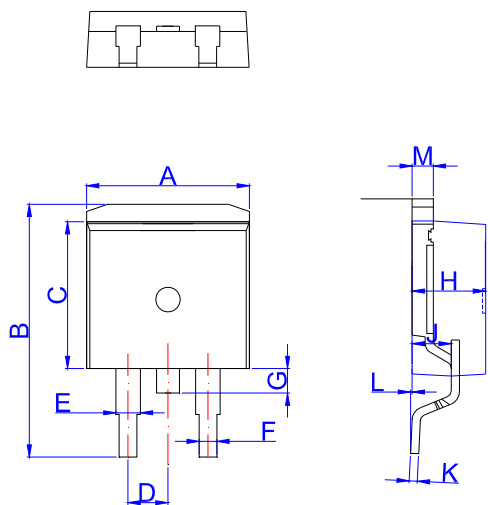


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
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)



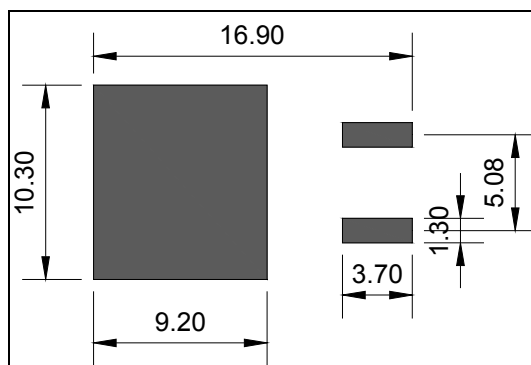
PACKAGE MECHANICAL DATA



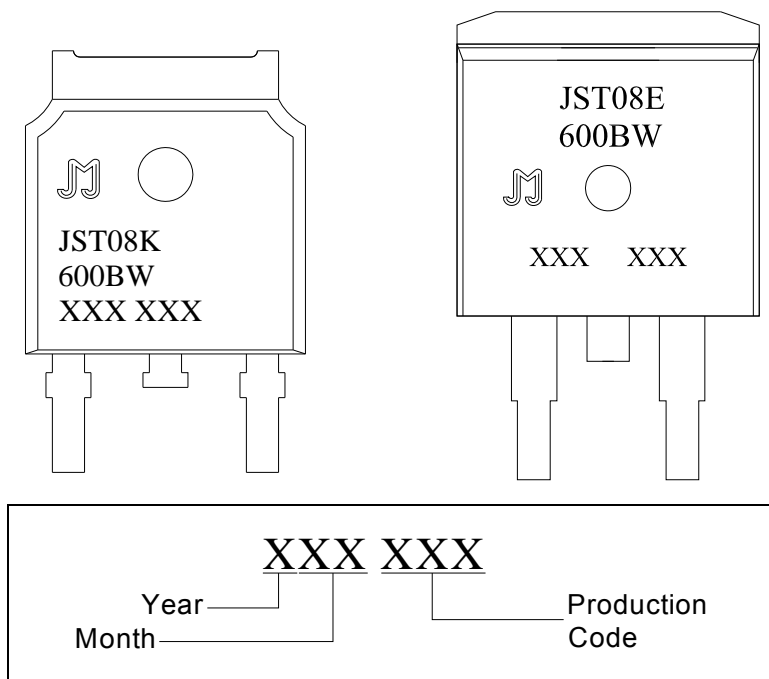
TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053

FOOTPRINT-TO-263 (dimensions in mm)



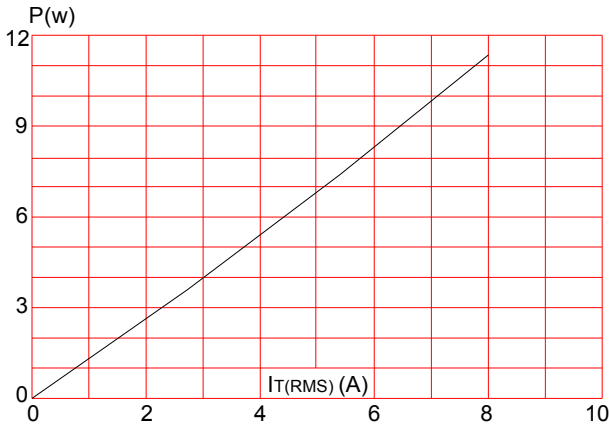
**MARKING**



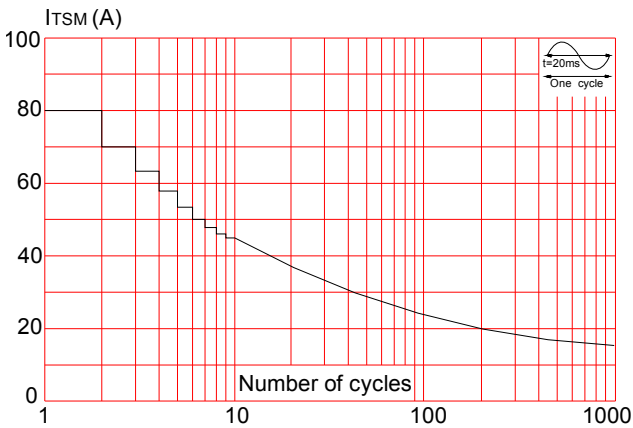
**PACKAGE INFORMATION**

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	8,000
TO-252-4R	TUBE	80	4,000	32,000
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch
TO-252-4R	TAPING	2,500	25,000	13 inch

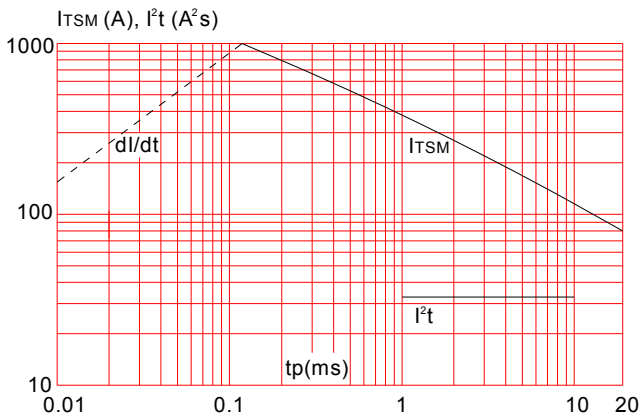
**FIG.1:** Maximum power dissipation versus RMS on-state current



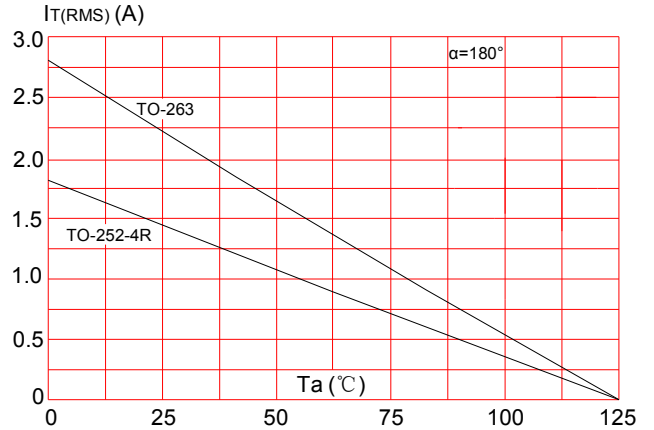
**FIG.3:** Surge peak on-state current versus number of cycles



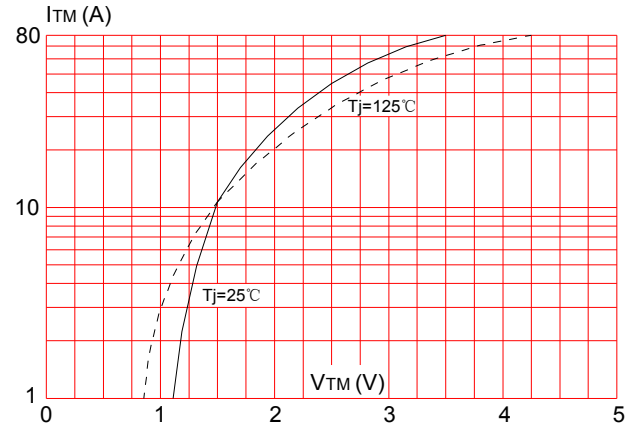
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



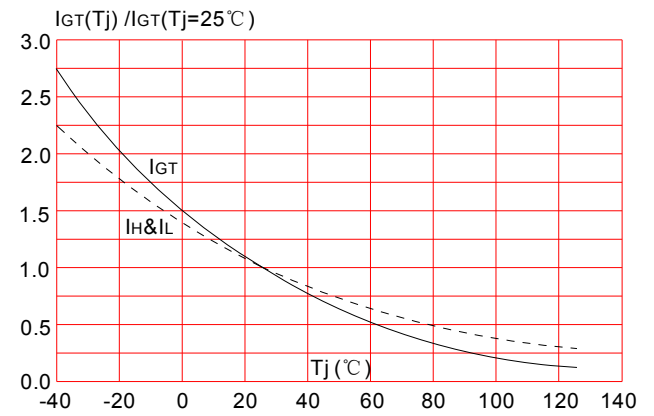
**FIG.2:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:  $35\mu\text{m}$ ) (full cycle)



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

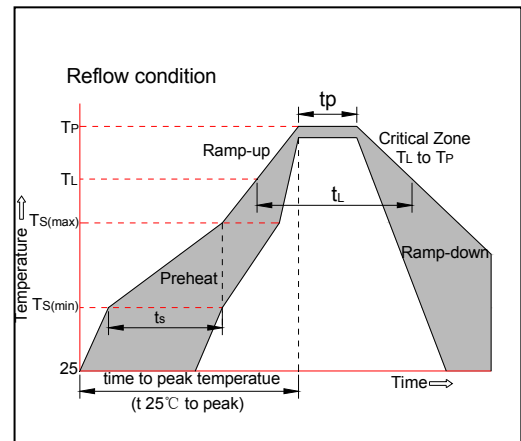


**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature



**SOLDERING PARAMETERS**

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




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