

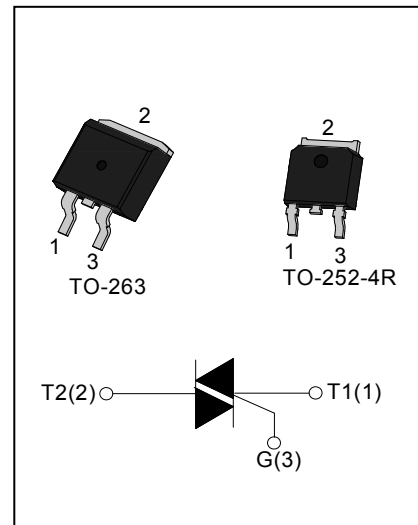


DESCRIPTION:

With low holding and latching current, JST136 series triacs are especially recommended for use on middle and small resistance type power load. Packages TO-263 & TO-252-4R are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600/800	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	V	
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)	V_{RRM}	600/800	V	
RMS on-state current	$I_{T(RMS)}$	TO-252-4R ($T_C=100^\circ\text{C}$)	4	A
		TO-263 ($T_C=95^\circ\text{C}$)		
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	35	A	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	6.1	A^2s	
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di/dt	I - II - III	50	$\text{A}/\mu\text{s}$
		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	

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

Symbol	Test Condition	Quadrant		Value				Unit
				T	D	E	F	
I_{GT}	$V_D=12\text{V}$	I - II - III	MAX	5	5	10	25	mA
		IV		5	10	25	70	
V_{GT}		ALL	MAX	1.3				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	MAX	10	20	30	40	mA
		II - IV		15	35	45	60	
I_H	$I_T=100\text{mA}$		MAX	5	15	25	30	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	20	50	100	150	V/ μs
$(dV/dt)_c$	$(dI/dt)_c=1.7\text{A/ms}$ $T_j=125^{\circ}\text{C}$		MIN	0.1	0.1	0.5	5	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=5.5\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.6	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.5	mA

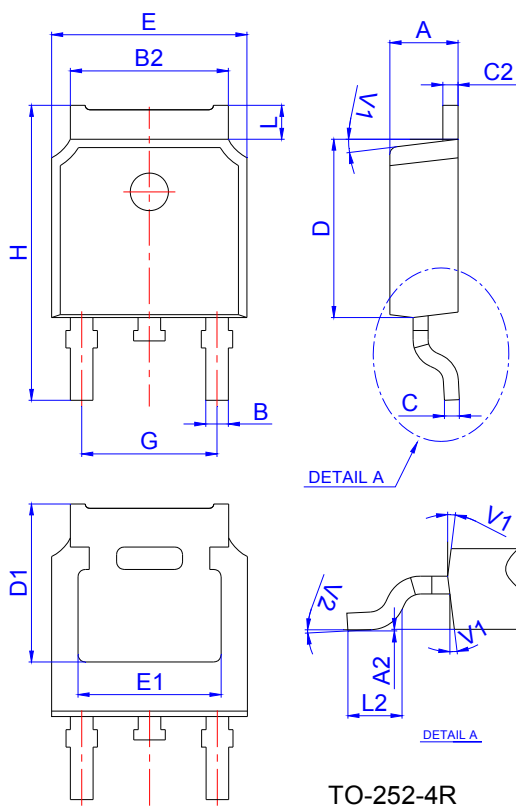
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252-4R	2.8	$^{\circ}\text{C/W}$
		TO-263	3.8	
$R_{th(j-a)}$	junction to ambient	TO-252-4R	70	$^{\circ}\text{C/W}$
		TO-263	45	

ORDERING INFORMATION

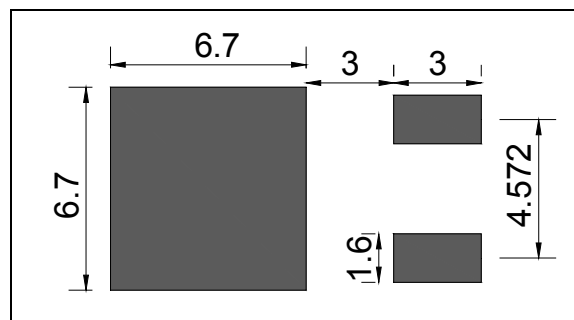
J	ST	136	K	-800	E
JieJie Microelectronics Co.,Ltd					
TRIACs					
IT(RMS):4A					
E:TO-263 K:TO-252-4R ETR:TO-263(Tape&Reel) KTR:TO-252-4R(Tape&Reel)					
600:VDRM/VRRM≥600V 800:VDRM/VRRM≥800V					
T:IGT1-3≤5mA IGT4≤5mA D:IGT1-3≤5mA IGT4≤10mA E:IGT1-3≤10mA IGT4≤25mA F:IGT1-3≤25mA IGT4≤70mA					

PACKAGE MECHANICAL DATA

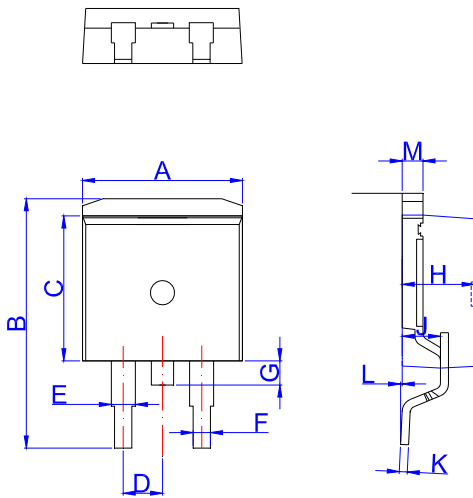


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268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



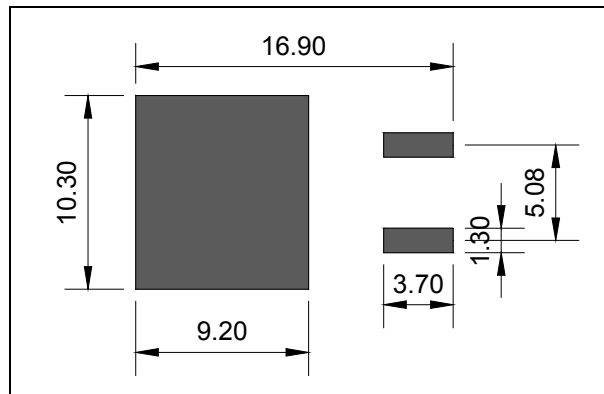
PACKAGE MECHANICAL DATA



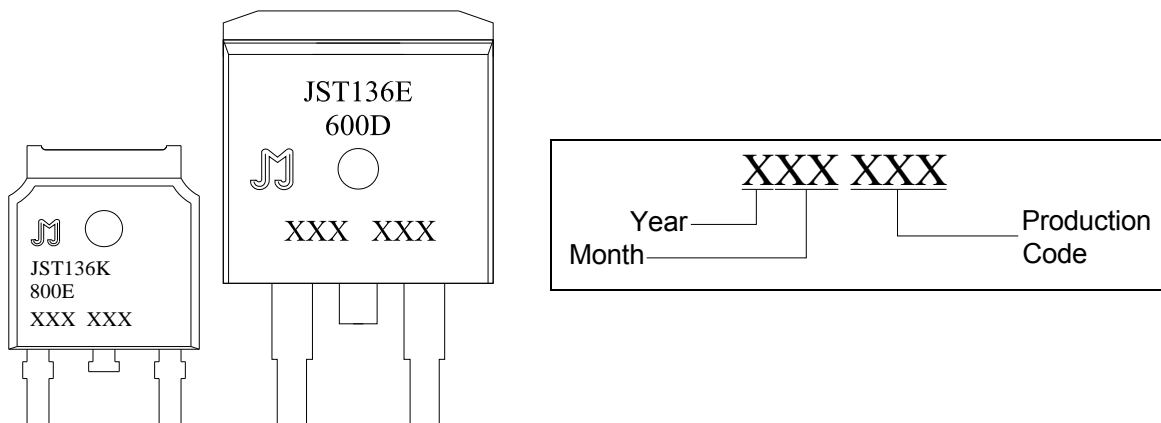
TO-263

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	6,000
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

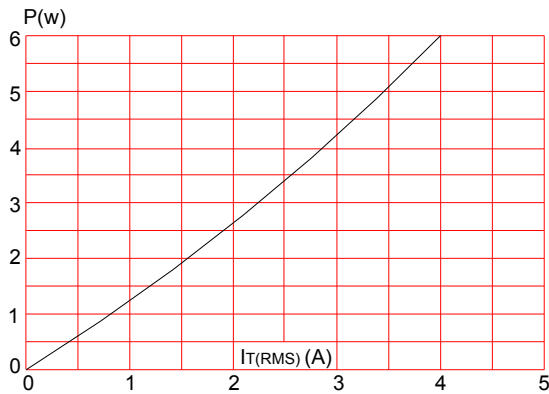


FIG.3: Surge peak on-state current versus number of cycles

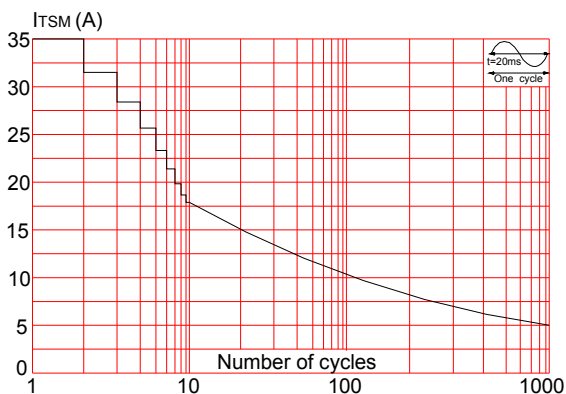


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm)

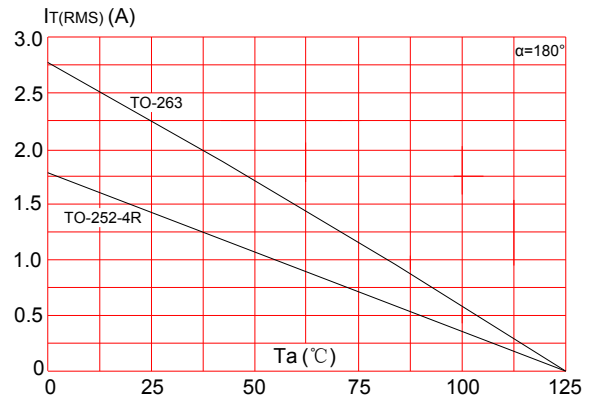


FIG.4: On-state characteristics (maximum values)

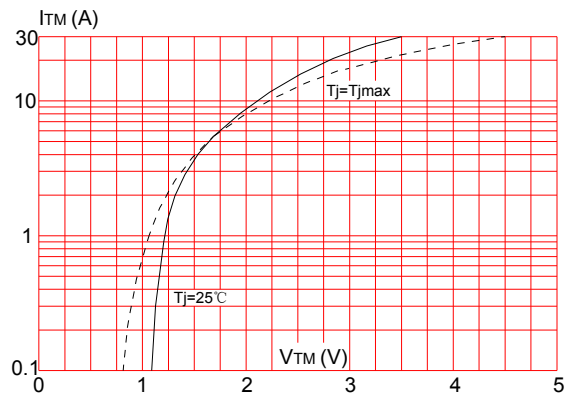


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t (I - II -III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

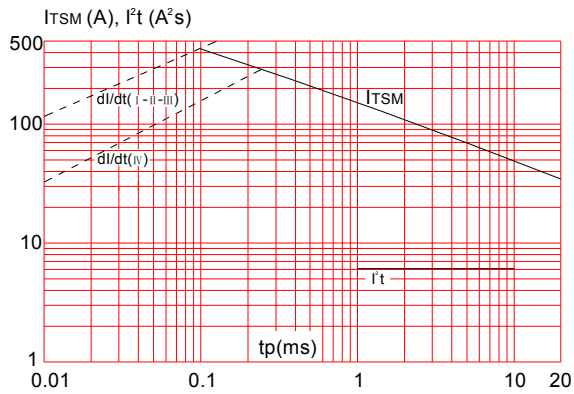


FIG.6: Relative variations of gate trigger current versus junction temperature

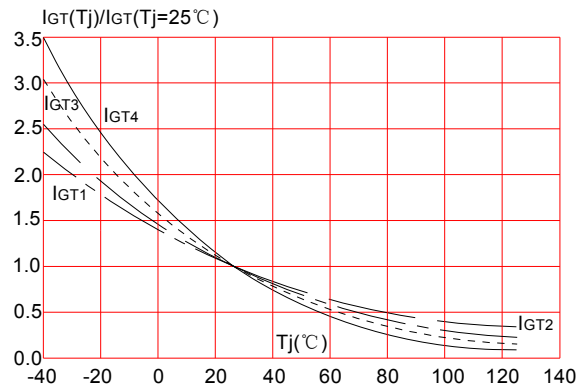


FIG.7: Relative variations of holding current versus junction temperature

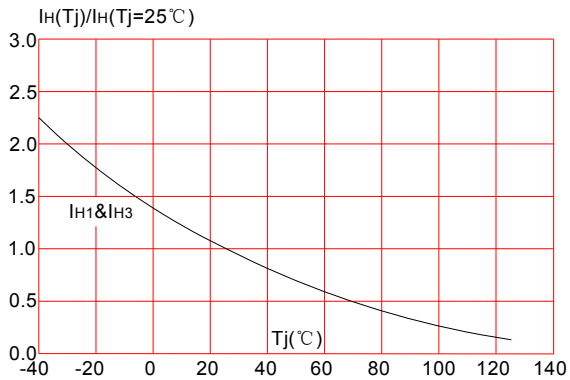
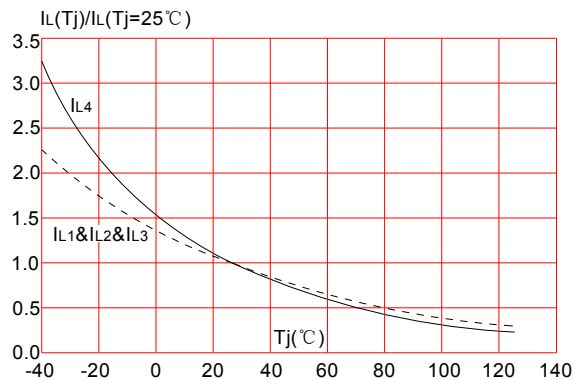
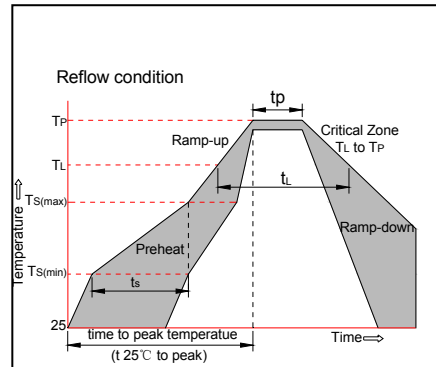


FIG.8: Relative variations of latching current versus junction temperature




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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