



JST139E 16A TRIACs

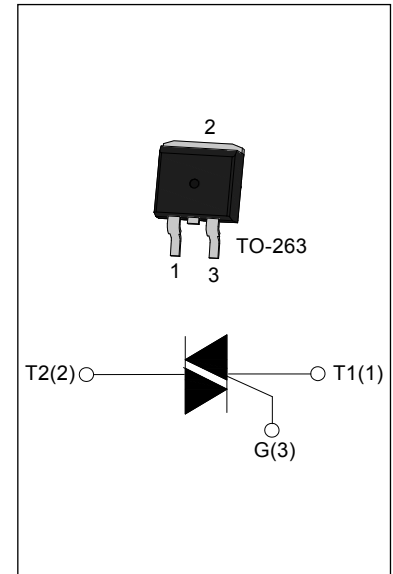
Rev.8.0

DESCRIPTION:

JST139E triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load. Package TO-263 is RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	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	TO-263 ($T_c=75^\circ\text{C}$)	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current ($t_p=20\text{ms}$)		I_{TSM}	140	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	98	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$)	I - II - III	di/dt	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
				D	E	F	B	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II - III	MAX	5	10	25	50	mA
		IV		10	25	70	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	15	30	50	80	mA
		II - IV		20	40	100	120	
I_H	$I_T=100\text{mA}$		MAX	10	25	40	60	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	20	50	100	500	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=20\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.6	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	1	mA

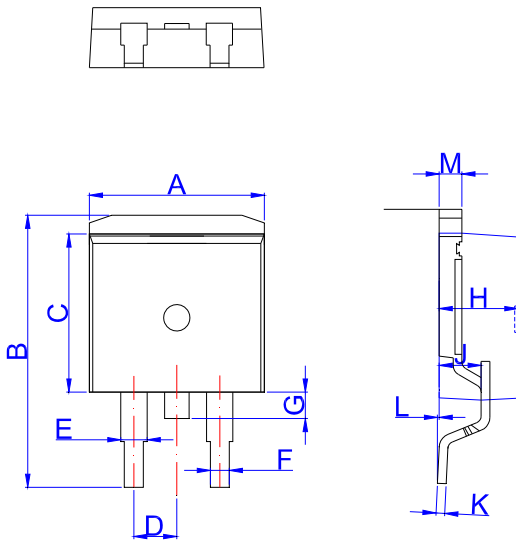
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-263	1.2	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

JieJie Microelectronics Co.,Ltd TRIACs $I_{T(RMS)}:16\text{A}$	J ST 139 E -600 B	D: $I_{GT1-3}\leq 5\text{mA } I_{GT4}\leq 10\text{mA}$ E: $I_{GT1-3}\leq 10\text{mA } I_{GT4}\leq 25\text{mA}$ F: $I_{GT1-3}\leq 25\text{mA } I_{GT4}\leq 70\text{mA}$ B: $I_{GT1-3}\leq 50\text{mA } I_{GT4}\leq 70\text{mA}$ 600: $V_{DRM}/V_{RRM}\geq 600\text{V}$ 800: $V_{DRM}/V_{RRM}\geq 800\text{V}$ E:TO-263 ETR:TO-263(Tape&Reel)
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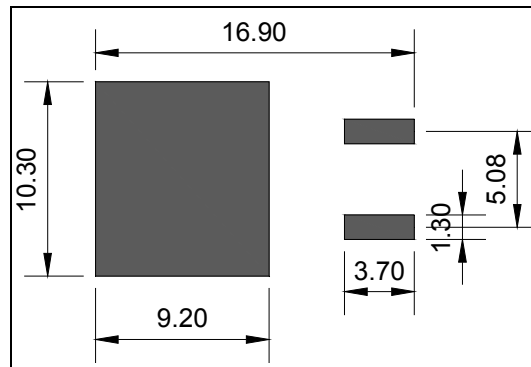
PACKAGE MECHANICAL DATA



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)



PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	5,000
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch

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

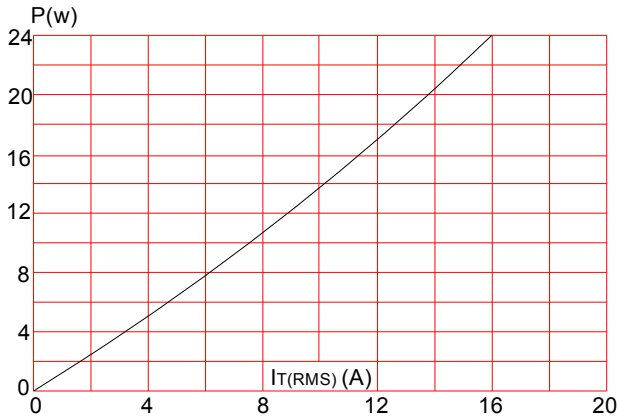


FIG.3: Surge peak on-state current versus number of cycles

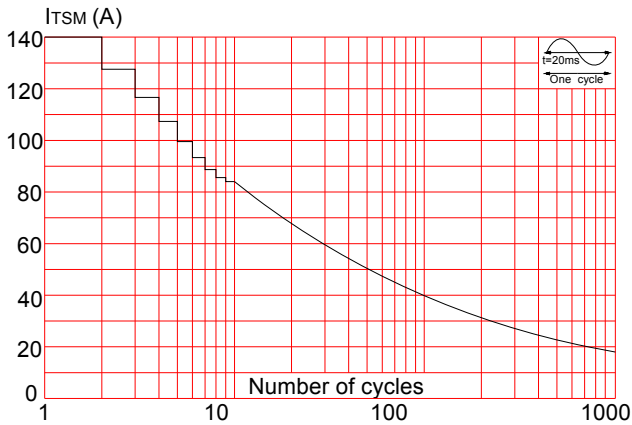


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t (I -II -III: $di/dt < 50\text{A}/\mu\text{s}$; IV: $di/dt < 10\text{A}/\mu\text{s}$)

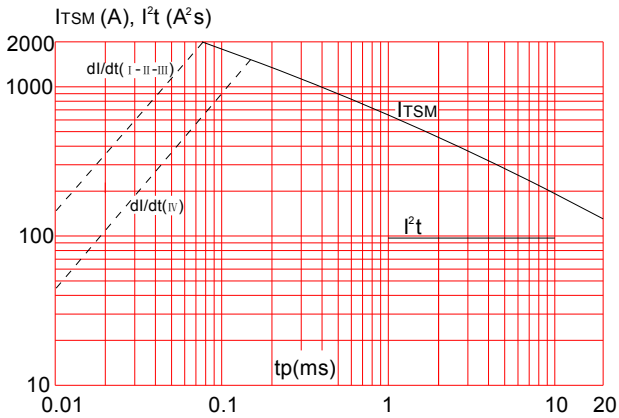


FIG.2: RMS on-state current versus case temperature

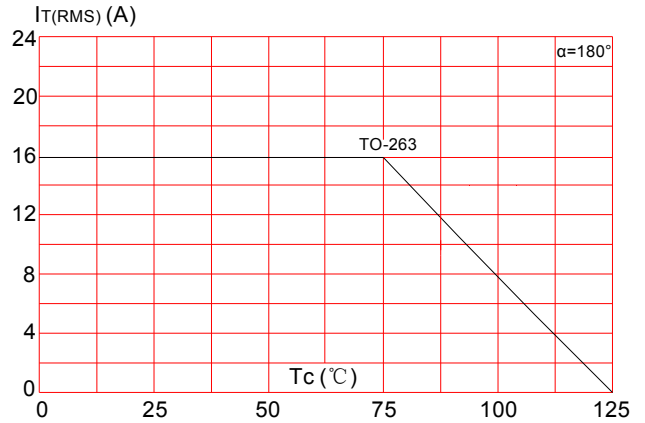


FIG.4: On-state characteristics (maximum values)

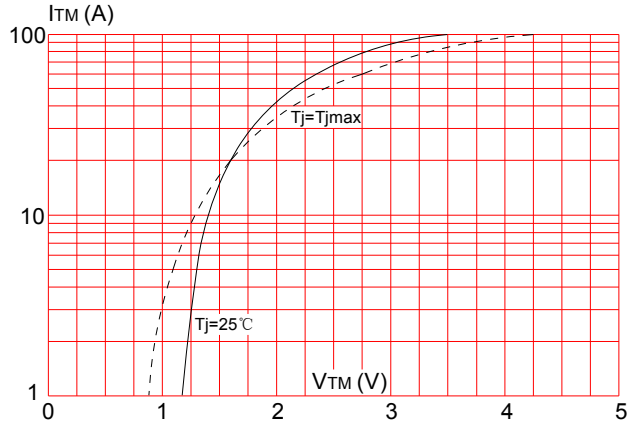


FIG.6: Relative variations of gate trigger current versus junction temperature

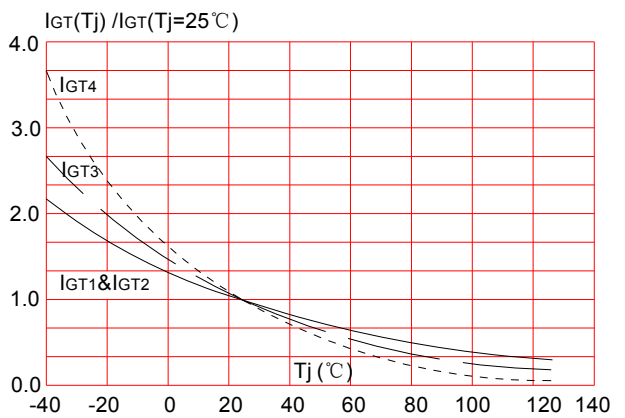


FIG.7: Relative variations of holding current versus junction temperature

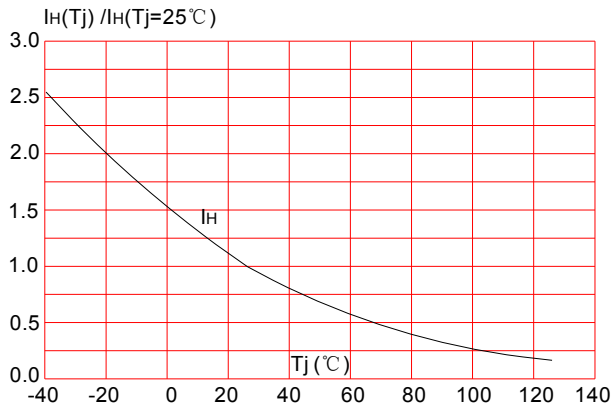
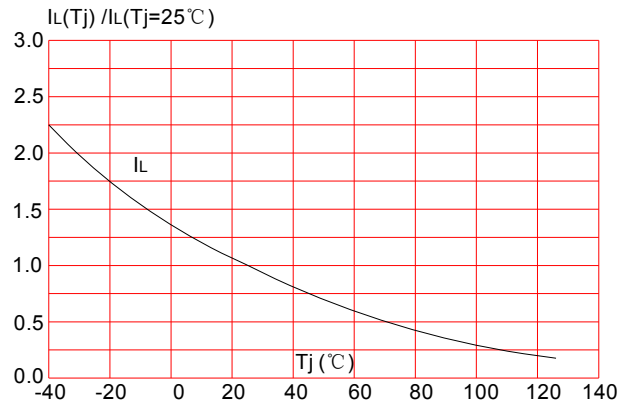


FIG.8: Relative variations of latching current versus junction temperature




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