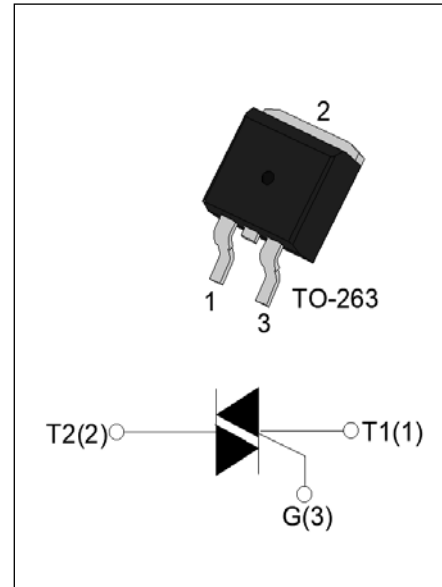


JST08E-600C 8A TRIAC

Rev.A.1.0

The JST08E-600C 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. Package TO-263 is RoHS compliant.

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600	V
$I_{GT} / / /$	25/25/25/50	mA



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 ($T_j=25^\circ\text{C}$)	V_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	600	V
RMS on-state current ($T_c = 107^\circ\text{C}$)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	80	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		88	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	32	A^2s
Critical rate of rise of on-state current ($I_G=2 I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	-	80	$\text{A}/\mu\text{s}$
	-	40	
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.8)	V_{PP}	1	kV

(T_j=25 unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I _{GT}	V _D =12V R _L =33	- -	MAX.	25	mA
				50	
V _{GT}		ALL	MAX.	1	V
V _{GD}	V _D =V _{DRM} T _j =125 R _L =3.3K	ALL	MIN.	0.2	V
I _L	I _G =1.2I _{GT}	- -	MAX.	40	mA
				80	
I _H	I _T =200mA		MAX.	30	mA
dV/dt	V _D =400V Gate Open T _j =125		MIN.	800	V/μs
(dV/dt) _c	(dI/dt) _c =3.5A/ms, T _j =125		MIN.	6	V/μs
t _{on}	I _G =80mA I _A =400mA I _R =40mA T _j =25		TYP.	5	μs
t _{off}				30	

Symbol	Parameter		Value(MAX.)	Unit
V _{TM}	I _{TM} =11A t _p =380μs	T _j =25	1.5	V
V _{TO}	Threshold voltage	T _j =125	0.81	V
R _D	Dynamic resistance	T _j =125	44	m
I _{DRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25	5	μA
I _R RM		T _j =125	0.25	mA

Symbol	Parameter	Value	Unit
R _{th(j-c)}	junction to case (AC)	1.6	/W
R _{th(j-a)}	junction to ambient (AC, in free air, S=2cm ²)	45	/W

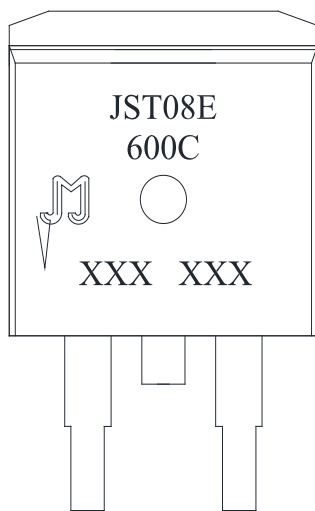
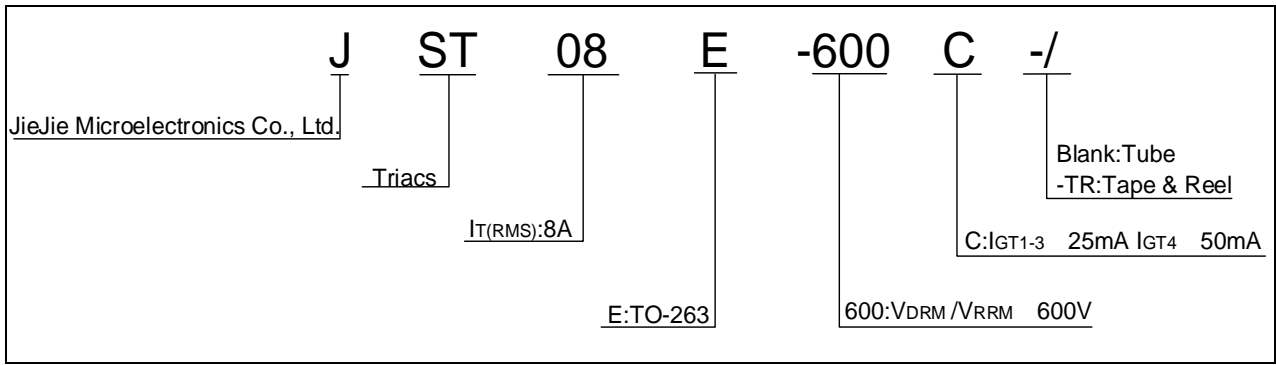


FIG.1 Maximum power dissipation versus RMS on-state current

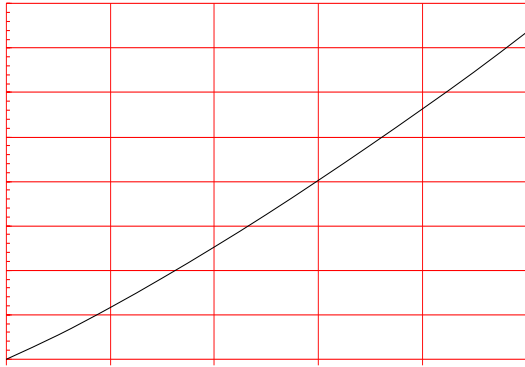


FIG.2: RMS on-state current versus case temperature



FIG.3: RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35μm)(full cycle)

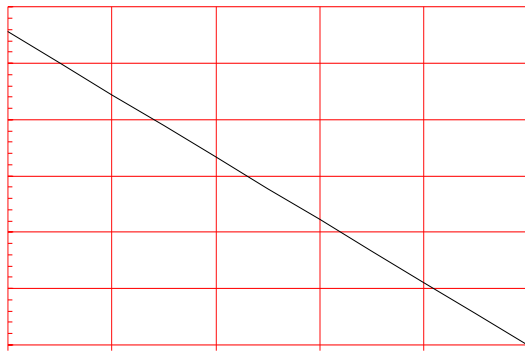


FIG.4: Surge peak on-state current versus number of cycles



FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

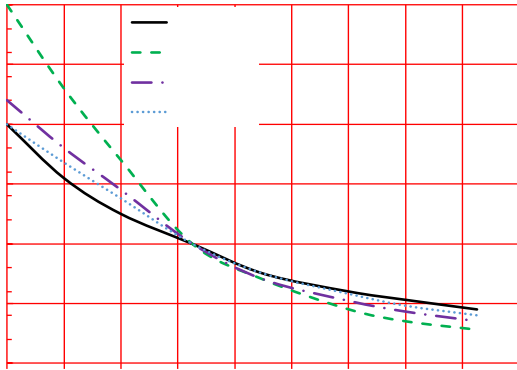
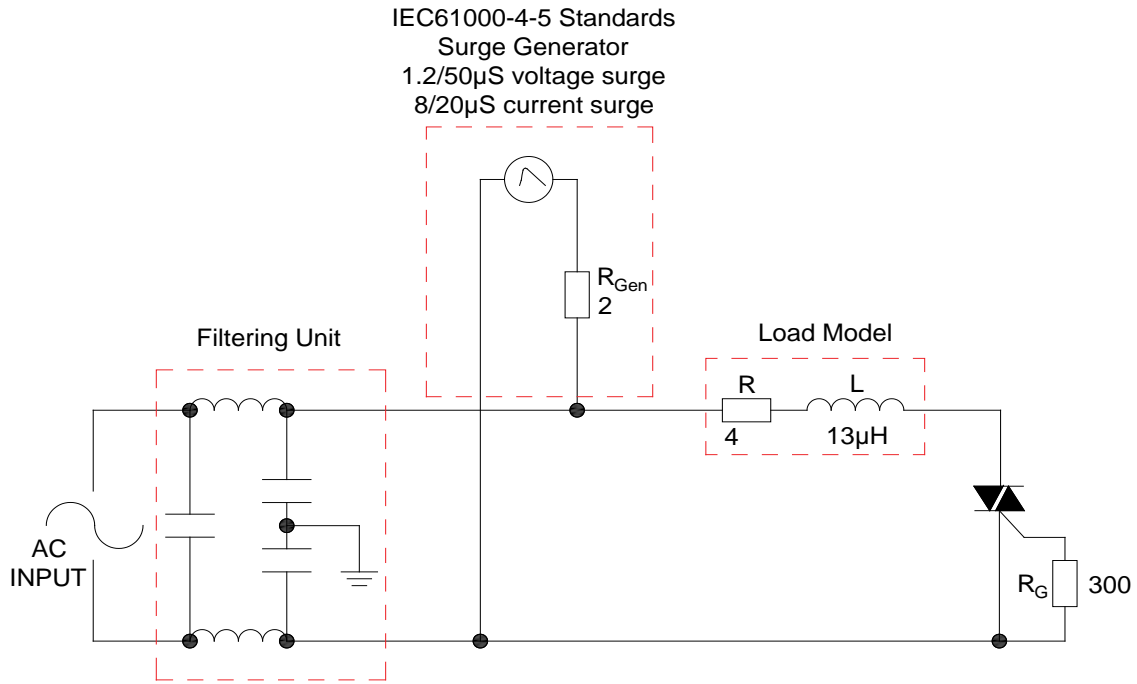


FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



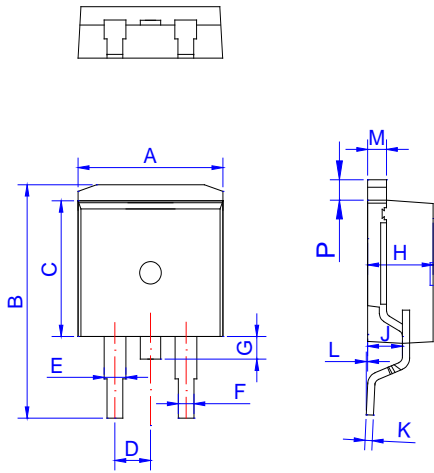
Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150
	-Temperature Max($T_{s(max)}$)	+200
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3 /sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3 /sec. Max
Reflow	-Temperature(T_L) (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

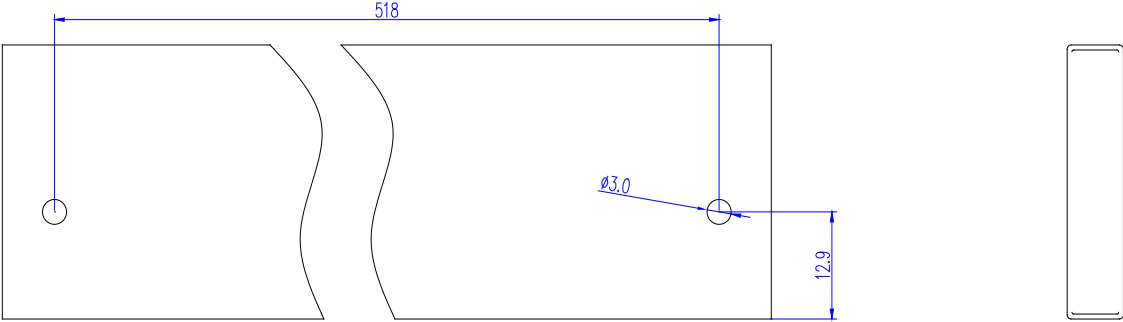
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		-	-			
JST08E-600C	600	25	50	TO-263	50	Tube
JST08E-600C-TR					800	Tape & Reel

Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated



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	9.40		9.60	0.37		0.378
D	2.40		2.70	0.094		0.106
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G	1.00		1.50	0.039		0.059
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
P	1.20		1.50	0.047		0.059



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