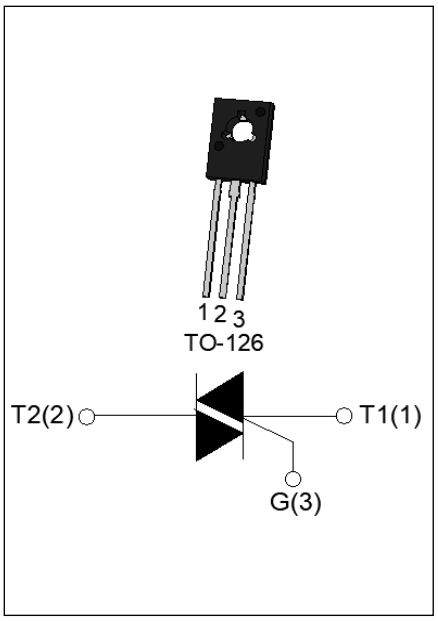
JST136Q-800E 4A TRIAC

Rev.A.1.0

DESCRIPTION:

The JST136Q-800E 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. From T2 terminals to external heatsink. Package TO-126 is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM} /V_{RRM}	800	V
$I_{GT\ I/II/III/IV}$	10/10/10/25	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 (T_C≤83℃)		$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25℃)		I_{TSM}	35	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25℃)			38.5	
I^2t value for fusing (t_p=10ms , T_j=25℃)		I^2t	6.1	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT} , f=100Hz , T_j=125℃)	I - II -III	dI/dt	80	A/μs
	IV		40	
Peak gate current (t_p=20μs , T_j=125℃)		I_{GM}	2	A
Average gate power dissipation (T_j=125℃)		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	5	W
Peak pulse voltage (T_j=25℃; non-repetitive,off-state;FIG.7)		V_{pp}	3.5	kV

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX.	10	mA
		Ⅳ		25	
V_{GT}		ALL	MAX.	1	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	ALL	MIN.	0.2	V
I_L	I_G=1.2I_{GT}	Ⅰ-Ⅲ	MAX.	20	mA
		Ⅱ-Ⅳ		30	
I_H	I_T=100mA		MAX.	25	mA
dV/dt	V_D=540V Gate Open T_j=110℃		MIN.	250	V/μs
(dV/dt)c	(dI/dt)c=1.8A/ms, T_j=110℃		MIN.	6	V/μs
t_{on}	I_G=40mA I_A=200mA I_R=20mA T_j=25℃		TYP.	1.5	μs
t_{off}				15	

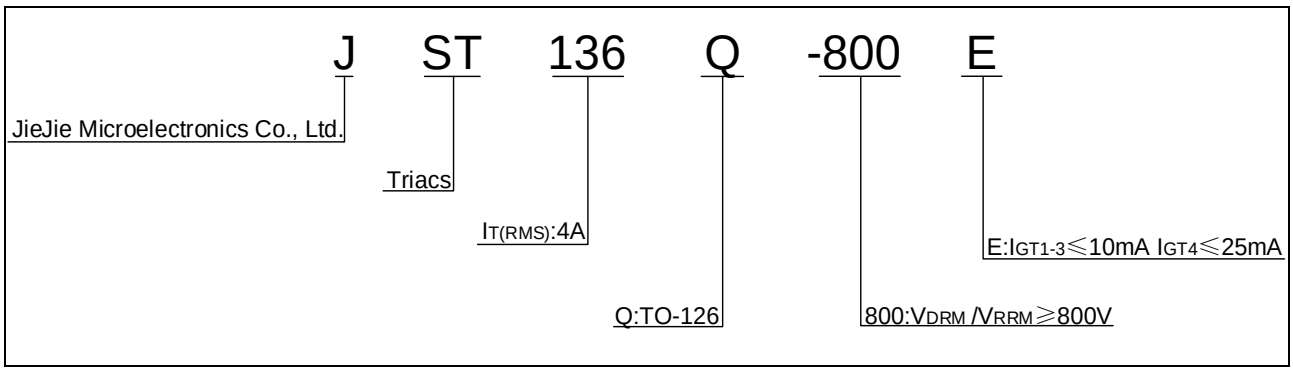
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=5A t_p=380μs	T_j=25℃	1.7	V
V_{TO}	Threshold voltage	T_j=125℃	0.94	V
R_D	Dynamic resistance	T_j=125℃	124	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	0.4	mA

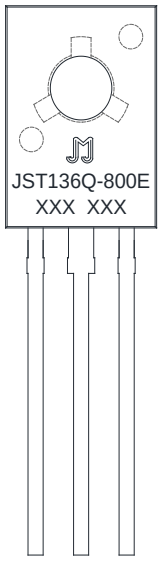
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	6.5	℃/W
$R_{th(j-a)}$	junction to ambient (AC)	150	℃/W

ORDERING INFORMATION



MARKING



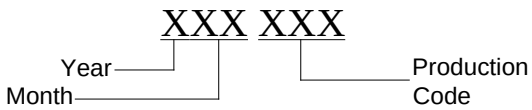


FIG.1 Maximum power dissipation versus RMS on-state current

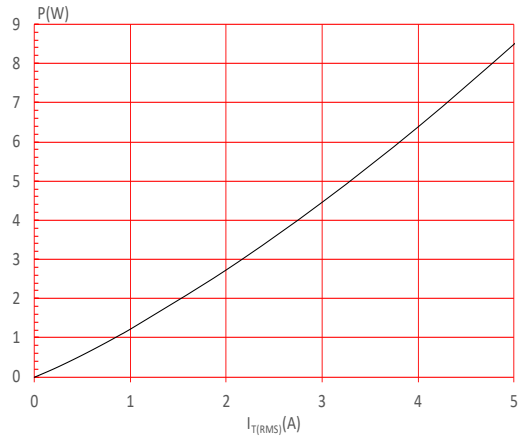


FIG.2: RMS on-state current versus case temperature

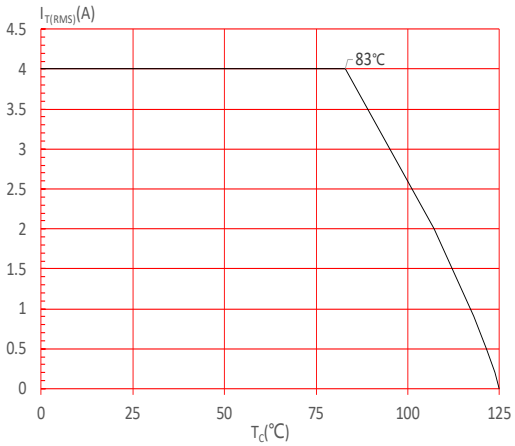


FIG.3: Surge peak on-state current versus number of cycles

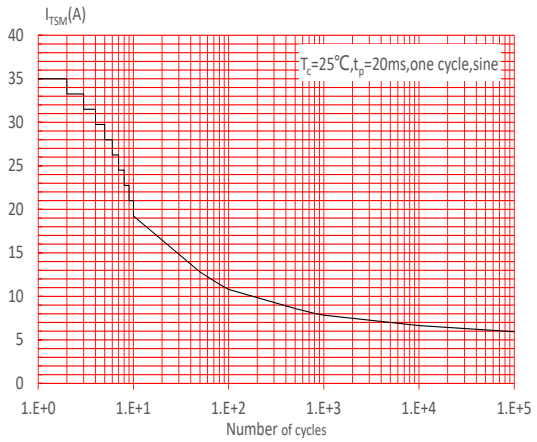


FIG.4: On-state characteristics

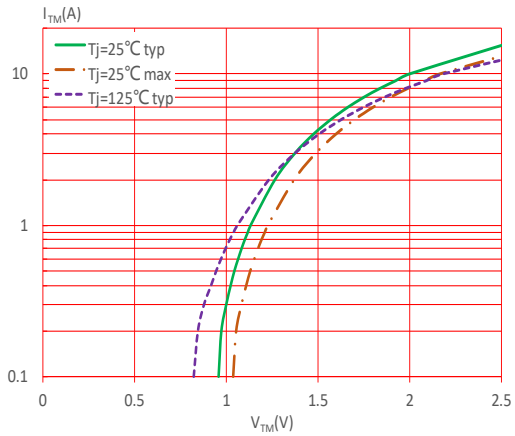


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p <20ms, and corresponding value of I^2t

(Ⅰ-Ⅱ-Ⅲ: dI/dt<80A/μs;Ⅳ: dI/dt<40A/μs)

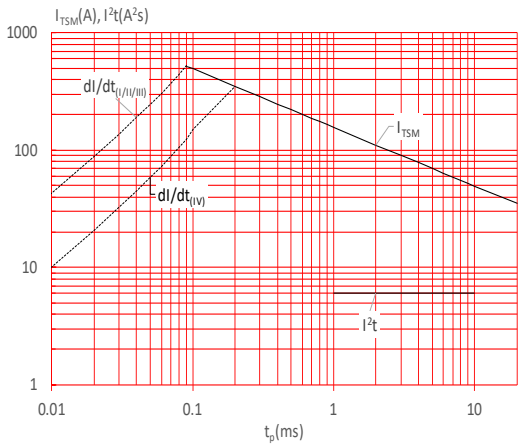


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

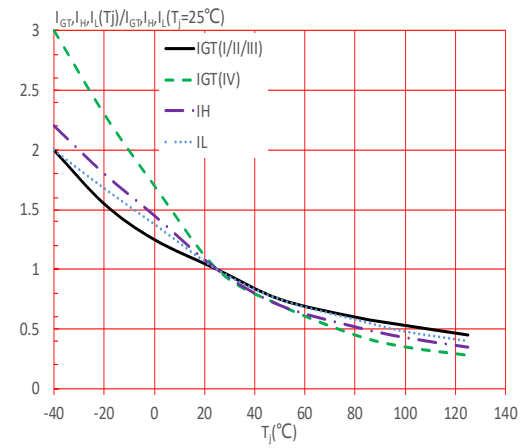
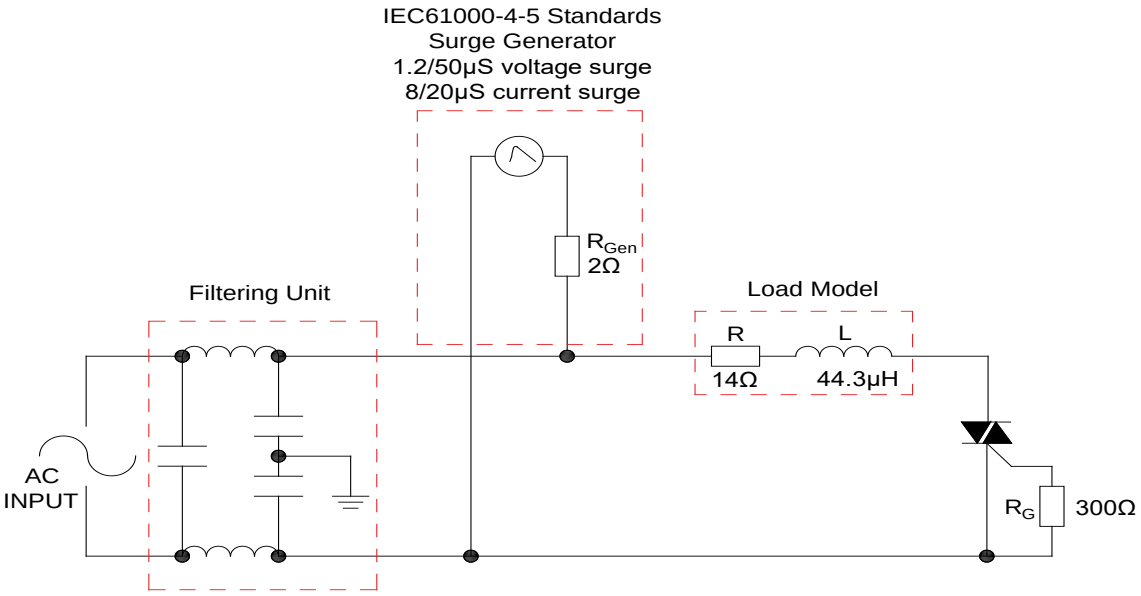


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SHAPING AND SOLDERING PARAMETERS

Refer to《Instructions for installation of plastic-sealed in-line power devices》released by JieJie.

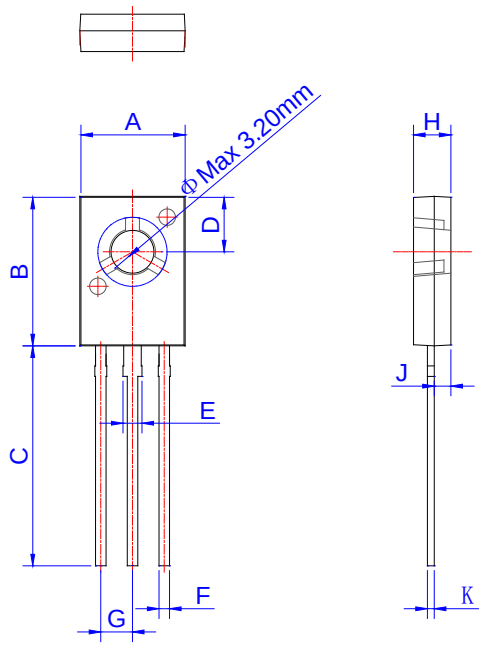
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		Ⅰ-Ⅱ-Ⅲ	Ⅳ			
JST136Q-800E	800	10	25	TO-126	500	Bulk Pack

Document Revision History

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

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.40		7.80	0.291		0.307
B	10.6		11.2	0.417		0.441
C	15.3		16.3	0.602		0.642
D	3.90		4.10	0.154		0.161
E	1.17		1.47	0.046		0.058
F	0.66		0.86	0.026		0.034
G	2.15		2.45	0.085		0.096
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024

DELIVERY MODE

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-126	Bulk Pack	500	2,000	10,000

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