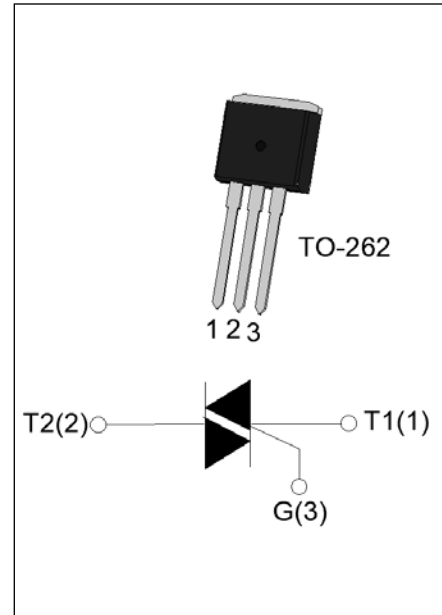


**JST137D-600F 8A TRIAC**

Rev.A.1.0

The JST137D-600F 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-262 is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	8	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT} / / /$	25/25/25/70	mA

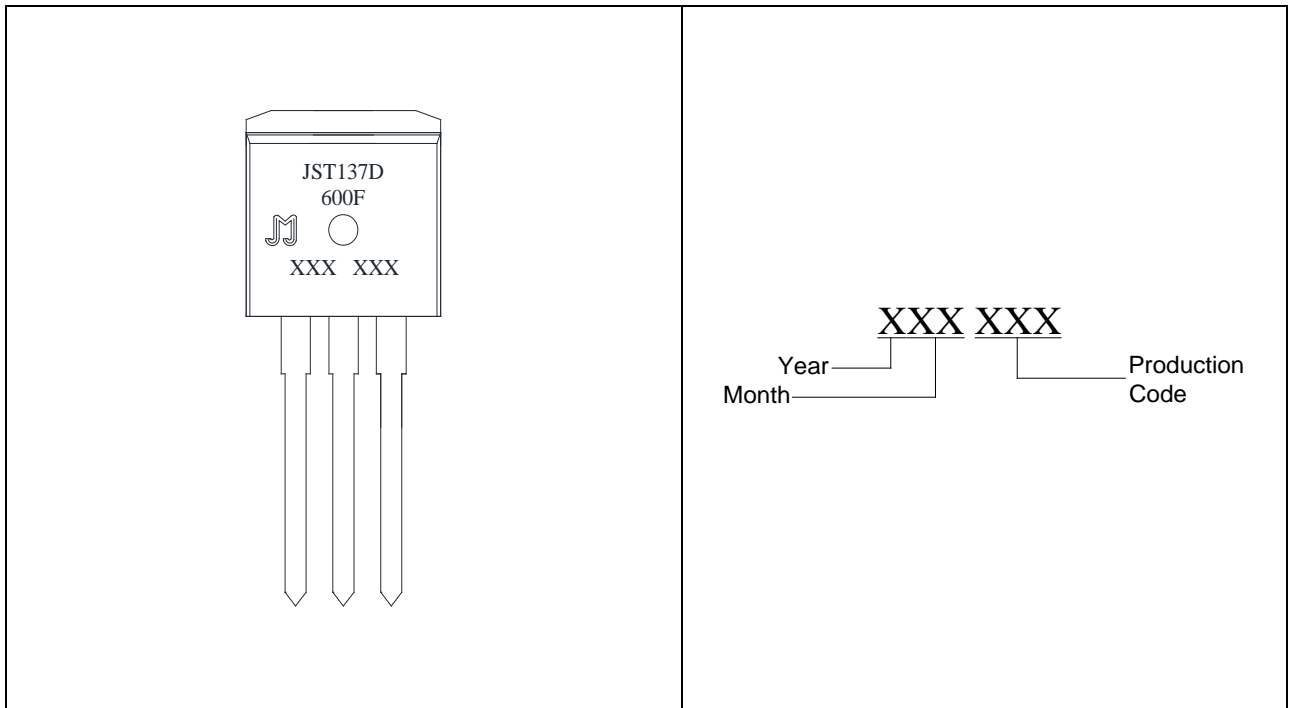
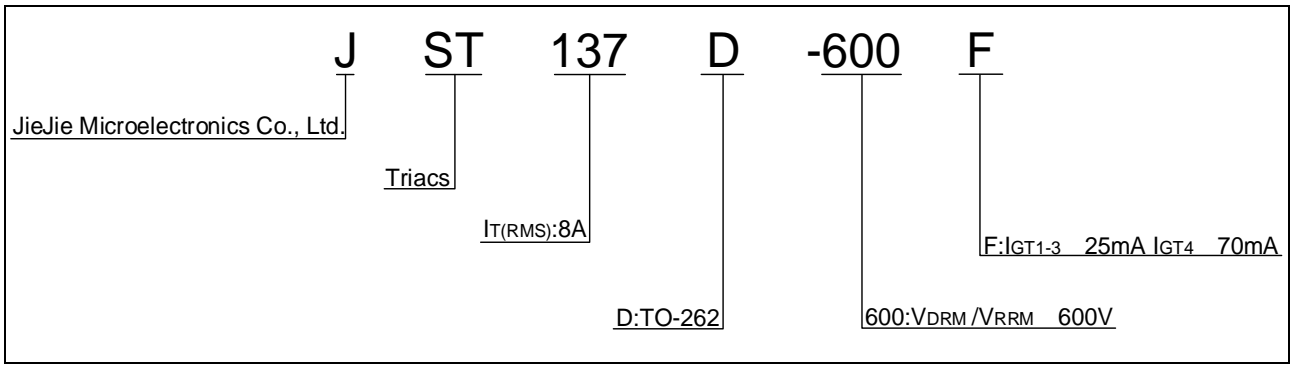
Parameter	Symbol	Value	Unit	
Storage junction temperature range	$T_{stg}$	-40-150		
Operating junction temperature range	$T_j$	-40-125		
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	600	V	
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	600	V	
RMS on-state current ( $T_c = 100^\circ\text{C}$ )	$I_{T(RMS)}$	8	A	
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	65	A	
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		72		
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	21	$\text{A}^2\text{s}$	
Critical rate of rise of on-state current ( $I_G=2 I_{GT}$ , $f=100\text{Hz}$ , $T_j=125^\circ\text{C}$ )	- -	$di/dt$	100	$\text{A}/\mu\text{s}$
			50	
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.7)	$V_{pp}$	4	kV	

(T<sub>j</sub>=25 unless otherwise specified)

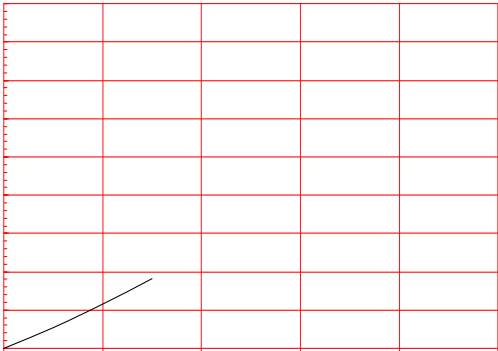
Symbol	Test Condition	Quadrant	Value		Unit
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33	- -	MAX.	25	mA
				70	
V <sub>GT</sub>		ALL	MAX.	1	V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125 R <sub>L</sub> =3.3K	ALL	MIN.	0.2	V
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	- -	MAX.	50	mA
				80	
I <sub>H</sub>	I <sub>T</sub> =500mA		MAX.	40	mA
dV/dt	V <sub>D</sub> =400V Gate Open T <sub>j</sub> =125		MIN.	350	V/μs
(dV/dt) <sub>c</sub>	(dI/dt) <sub>c</sub> =2.7A/ms, T <sub>j</sub> =125		MIN.	8	V/μs
t <sub>on</sub>	I <sub>G</sub> =80mA I <sub>A</sub> =400mA I <sub>R</sub> =40mA T <sub>j</sub> =25		TYP.	5	μs
t <sub>off</sub>				50	

Symbol	Parameter		Value(MAX.)	Unit
V <sub>TM</sub>	I <sub>TM</sub> =10A t <sub>p</sub> =380μs	T <sub>j</sub> =25	1.5	V
V <sub>TO</sub>	Threshold voltage	T <sub>j</sub> =125	0.8	V
R <sub>D</sub>	Dynamic resistance	T <sub>j</sub> =125	53	m
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub>	T <sub>j</sub> =25	5	μA
I <sub>R</sub> RM		T <sub>j</sub> =125	0.35	mA

Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	junction to case (AC)	2.2	/W
R <sub>th(j-a)</sub>	junction to ambient (AC)	60	/W



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



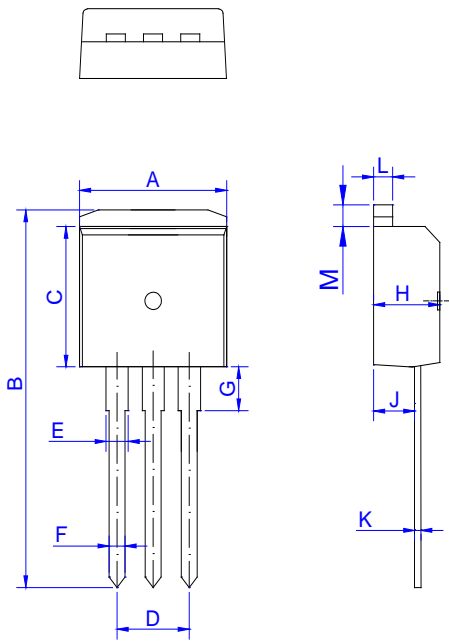
**FIG.2:** RMS on-state current versus case temperature

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

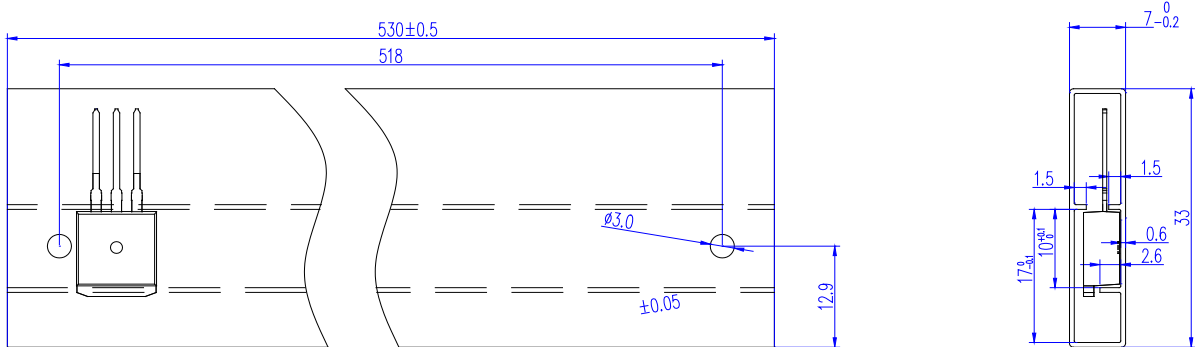
Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		-	-			
JST137D-600F	600	25	70	TO-262	50	Tube

**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	9.95		10.20	0.392		0.402
B	23.85		24.05	0.939		0.947
C	9.40		9.60	0.370		0.378
D	4.95		5.25	0.195		0.207
E	1.35		1.40	0.053		0.055
F	0.80		0.85	0.031		0.033
G	2.70		3.40	0.106		0.134
H	4.45		4.55	0.175		0.179
J	2.20		2.60	0.087		0.102
K	0.48		0.52	0.019		0.020
L	1.30		1.35	0.051		0.053
M	1.20		1.50	0.047		0.059



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-262	TUBE	50	1,000	5,000

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