JST137F-600D 8A TRIAC

Rev.A.1.2

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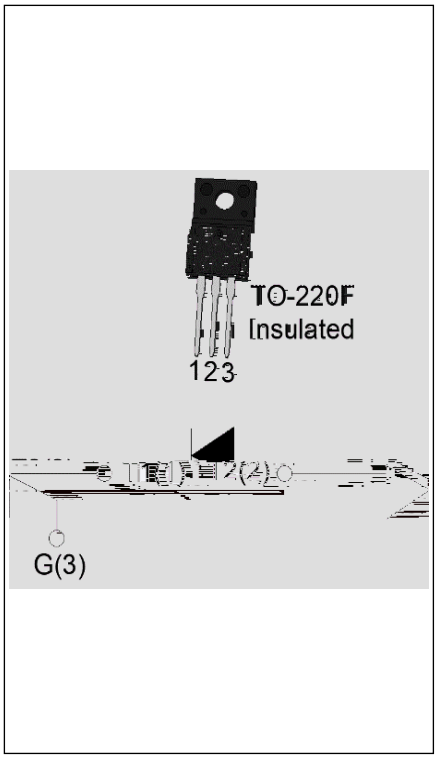
The JST137F-600D triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. By using an external plastic package, JST137F-600D provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



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Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM} /V_{RRM}	600	V
I_{GT} / / /	5/5/5/10	mA

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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}	600	V
Repetitive peak reverse voltage (T_j=25)	V_{RRM}	600	V
RMS on-state current (T_C 074)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25)	I_{TSM}	65	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25)		72	
I^2t value for fusing (t_p=10ms , T_j=25)	I^2t	21	A^2s
Critical rate of rise of on-state current (I_G=2 hI_{GT} , f=100Hz , T_j=125) - -	dI/dt	50	A/µs
		20	
Peak gate current (t_p=20µs , T_j=125)	I_{GM}	4	A
Average gate power dissipation (T_j=125)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	10	W

Peak pulse voltage (T_j=25 ; non-repetitive,off-state;FIG.7)	V_{pp}	4	kV

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Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	V_D=12V R_L=33Ω	- -	MAX.	5	mA
				10	
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}	- -	MAX.	15	mA
				20	
I_H	I_T=500mA		MAX.	10	mA
dV/dt	V_D=400V Gate Open T_j=125		MIN.	80	V/μs
(dV/dt)c	(dI/dt)c=2.7A/ms, T_j=125		MIN.	2	V/μs
t_{on}	I_G=20mA I_A=200mA I_R=20mA T_j=25		TYP.	1.2	μs
t_{off}				15	

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Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=10A t_p=380μs	T_j=25	1.5	V
V_{TO}	Threshold voltage	T_j=125	0.8	V
R_D	Dynamic resistance	T_j=125	53	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25	5	μA
I_{RRM}		T_j=125	0.35	mA

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Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	4.5	/W
$R_{th(j-a)}$	junction to ambient (AC)	60	/W

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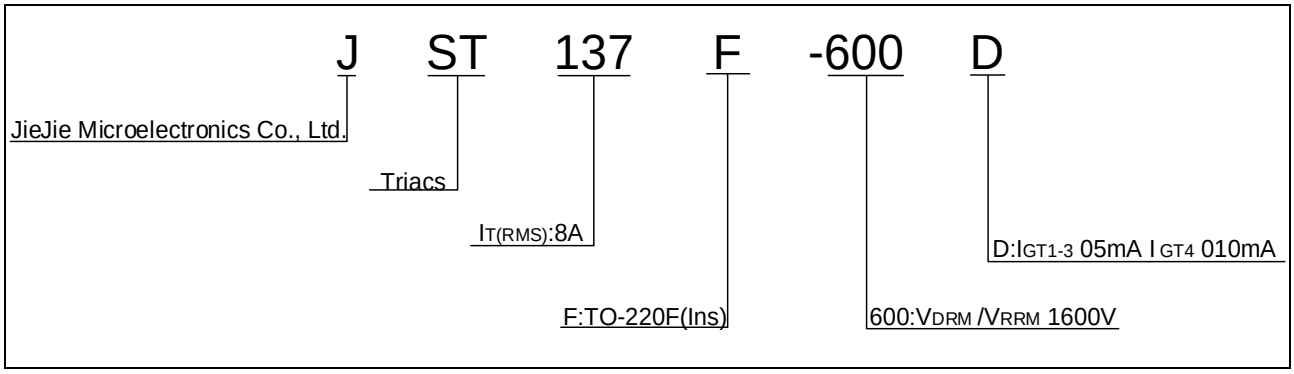

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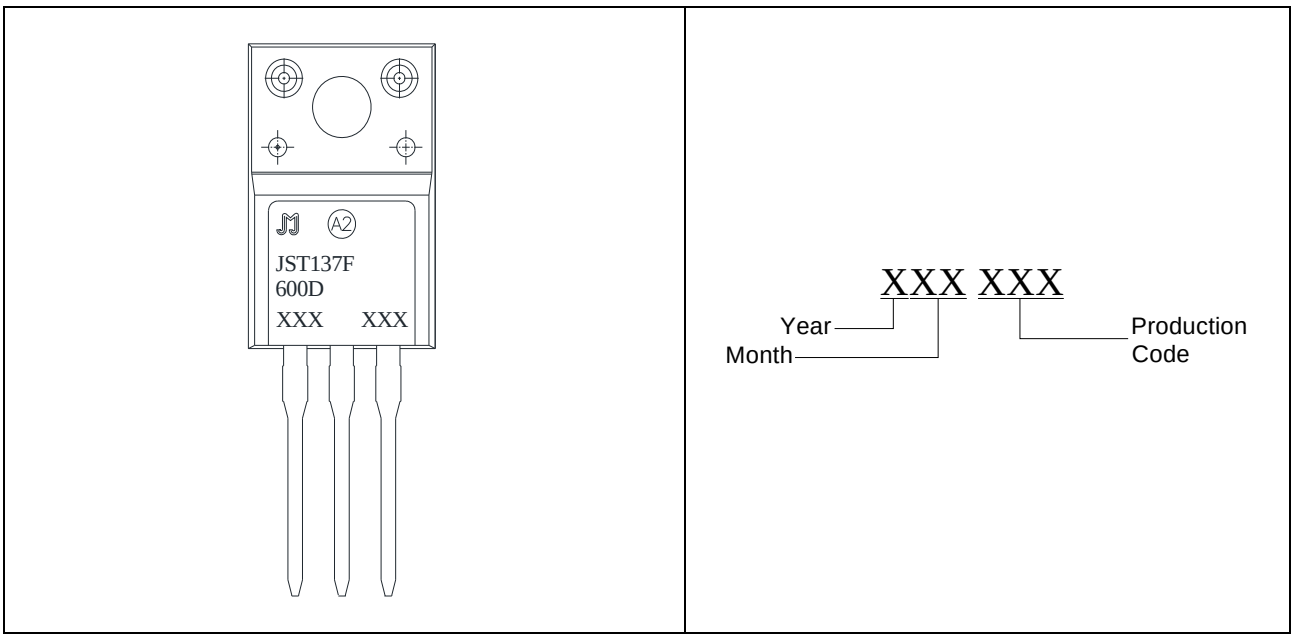
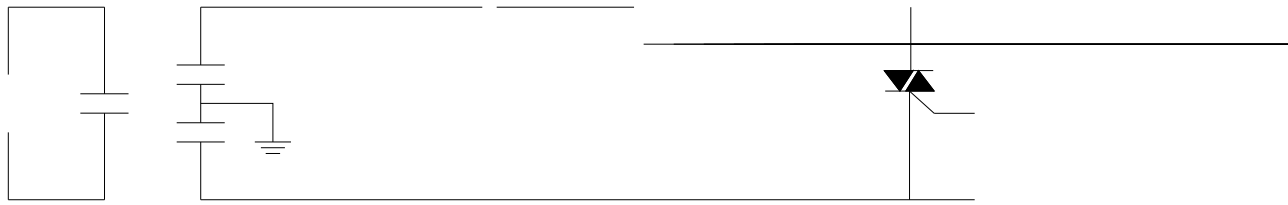


FIG.7 ÖTest circuit for inductive and resistive loads to IEC-61000-4-5 standards [9



ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		-	-			
JST137F-600D	600	5	10	TO-220F(Ins)	50	Tube

Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Sept.11, 2025	A.1.1	Revise dI/dt
Oct.15, 2025	A.1.2	Revise PACKAGE MECHANICAL DATA

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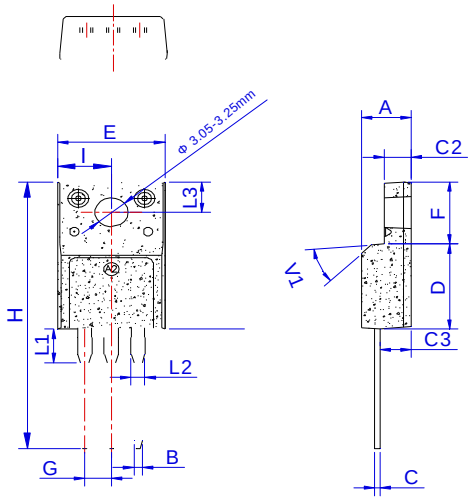

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
I						
J						
K						
L1	3.20		3.80	0.126		0.150
L2	1.14		1.70	0.045		0.067
L3	3.20		3.60	0.126		0.142
M						
V1		45°			45°	

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