BT137 Series 8A TRIACs

DESCRIPTION:

High current density due to double mesa technology, SIPOS and Glass Passivation.

BT137 series triacs is suitable for general purpose AC switching,They can be used as an ON/OFF function in applications such as static relays,heating regulation, induction motor stating circuits...or for phase contol operation, light dimmers,motor speed controllers.

BT137 are 3 quadrants triacs,They are specially recommended for use on inductive loads.

BT137 are isolated in internal, they provide a 2500V RMS isolation voltage from all three terminals to extemal heat sink.

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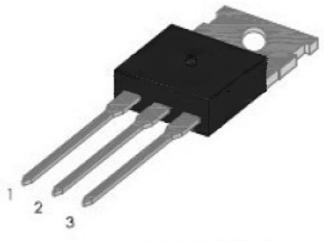
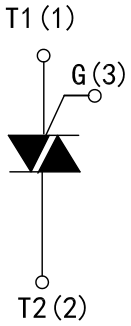




MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	600 and 800	V
V_{TM}	1.55	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	˚C
Operrating junction temperature range		Tj	-40 to +125	˚C
Repetitive Peak Off-state Voltage	Tj=25˚C	V_{DRM}	600and800	V
Repetitive Peak Reverse Voltage	Tj=25˚C	V_{RRM}	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms,Tj=25˚C	V_{DSM}	700and900	V
Non repetitive Peak Reverse Voltage		V_{RSM}	700and900	
RMS on-state current (full sine wave)	BT137 Tc=110˚C	$I_{T(RMS)}$	8	A
	BT137 Tc=100˚C			
Non repetitive surge peak on-state current (full cycle,Tj=25˚C)	f = 60 Hz t=16.7ms	I_{TSM}	72	A
	f = 50 Hz t=20ms		65	
I^2t Value for fusing	tp=10ms	I^2t	36	A^2s
Critical rate of rise of on-state current ($I_G=2\times I_{GT}$,tr≤100 ns,f=120Hz,Tj=125˚C)		dI /dt	50	A/μs
Peak gate current (tp=20us,Tj=125˚C)		I_{GM}	4	A
Peak Gate Power Dissipation (tp=20us,Tj=125˚C)		P_{GM}	10	W
Average gate power dissipation (Tj=125˚C)		$P_{G(AV)}$	1	W

ELECTRICAL CHARACTERISTICS(Tj=25℃ unless otherwise specified)

● 3 Quadrants

Symbol	Test Condition	Quadrant		BT137	Unit
				D	
I_{GT}	V_D=12V R_L=33Ω	I-II-III	MAX.	10	mA
V_{GT}		I-II-III	MAX.	1.3	V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩ Tj =125℃	I-II-III	MIN.	0.2	V
I_L	I_G=1.2I_{GT}	I-III	MAX.	20	mA
		II	MAX.	35	mA
I_H	I_T =100mA		MAX.	15	mA
dV/dt	V_D=67%V_{DRM} gate open Tj=125℃		MIN.	40	V/μs
(dV/dt)c	(dI/dt)c=3.5A/ms Tj=125℃		MIN.	1	V/μs

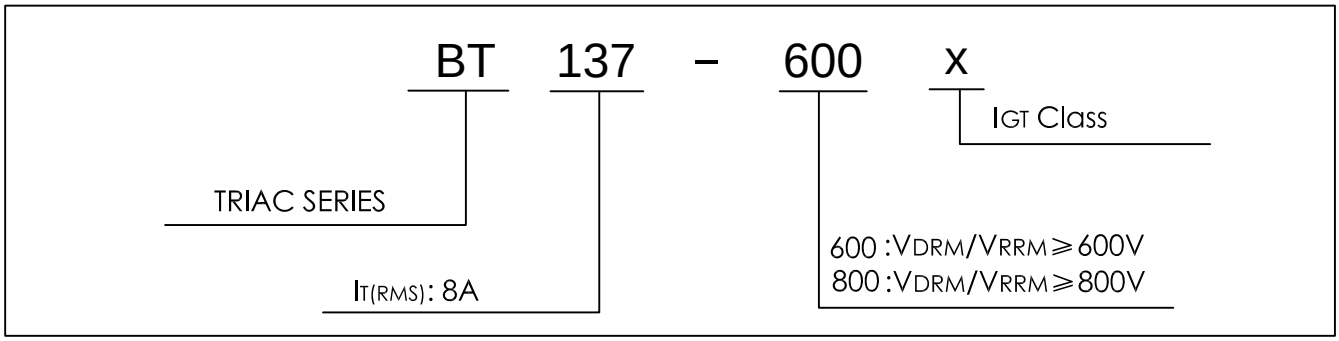
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=11A,tp=380μs	Tj=25℃	1.55	V
I_{DRM} I_{RRM}	V_D=V_{DRM} V_R=V_{RRM}	Tj=25℃	5	μA
		Tj=125℃	1	mA

THERMAL RESISTANCES

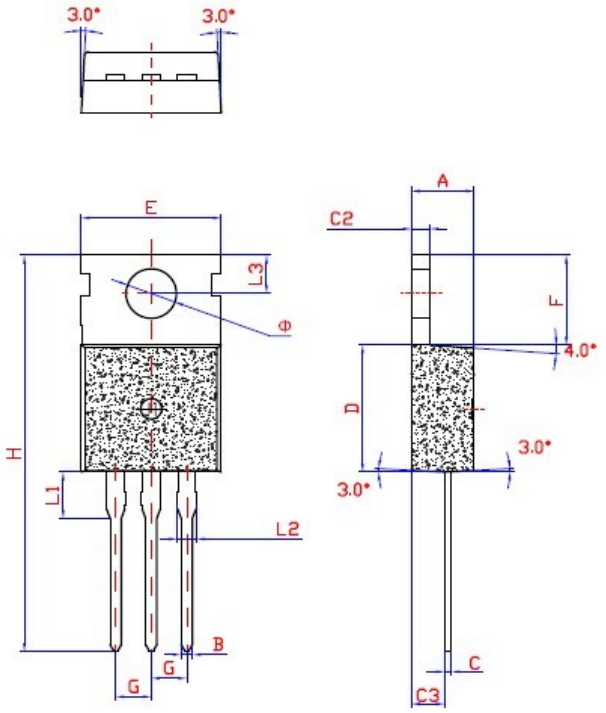
Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	BT137	1.6	℃/W
$R_{th(j-a)}$	Junction to ambient (S=1cm²)	BT137	60	℃/W

ORDERING INFORMATION



PACKAGE MECHANICAL DATA

TO-220C



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.4		4.6	0.173		1.181
B	0.7		0.9	0.027		0.035
C	0.45		0.6	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.2		2.6	0.086		0.102
D	8.9		9.9	0.350		0.390
E	9.9		10.3	0.390		0.406
F	6.3		6.9	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	11.0		11.7
L1		3.2			0.126	
L2	1.14		1.7	0.045		0.067
L3	2.65		2.95	0.104		0.116
Φ		3.6			0.142	

Marking:

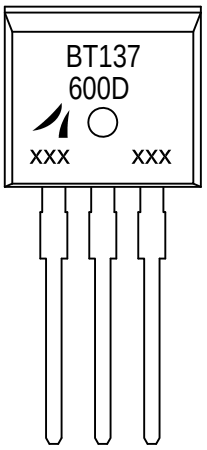


FIG.1:Maximum power dissipation versus RMS on-state current(full cycle)

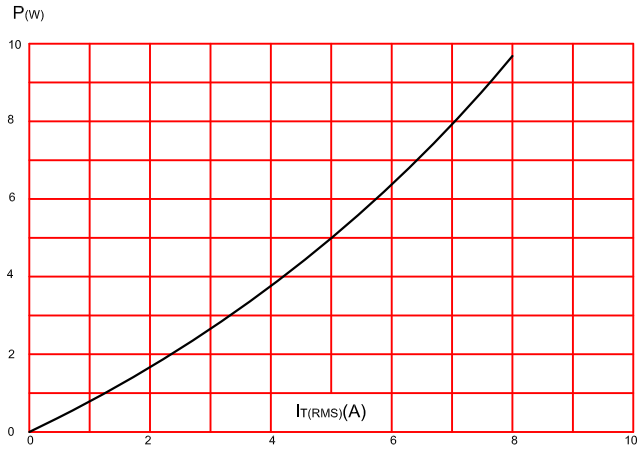


FIG.2:RMS on-state current versus case temperature(full cycle)

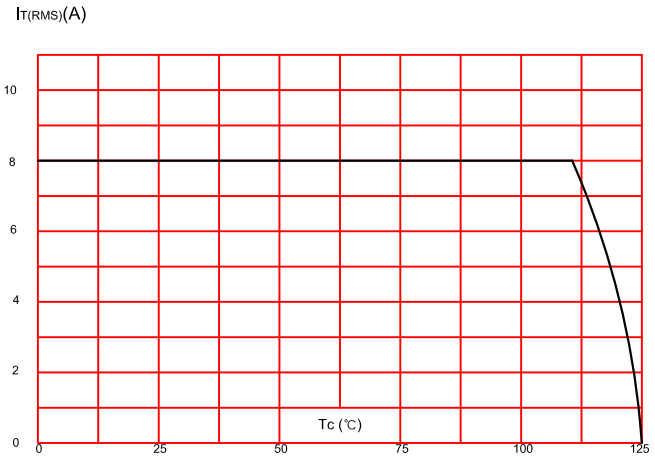


FIG.3:On-state characteristics (maximum values).

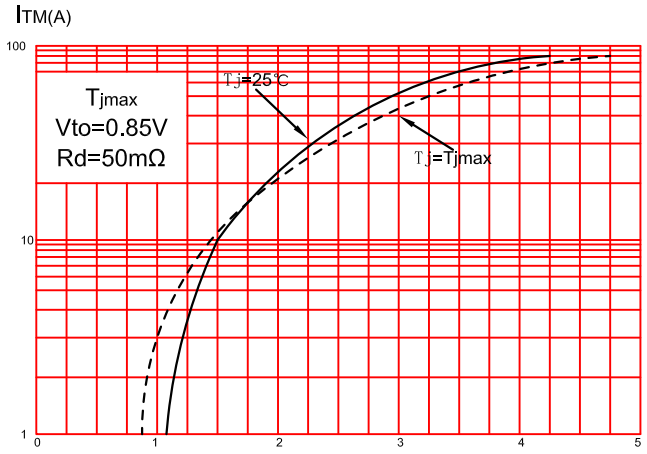


FIG.4:Surge peak on-state current versus number of cycles.

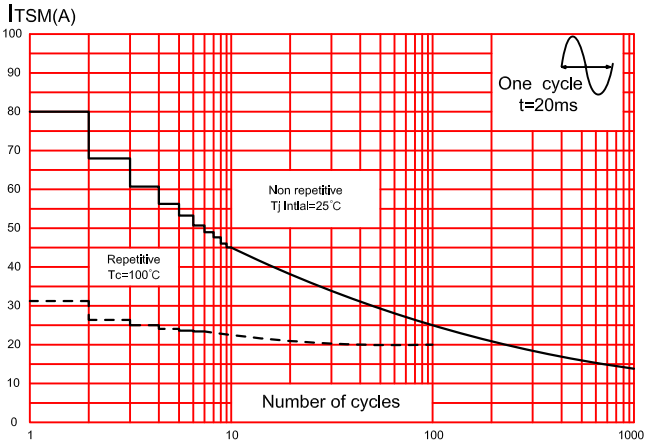


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

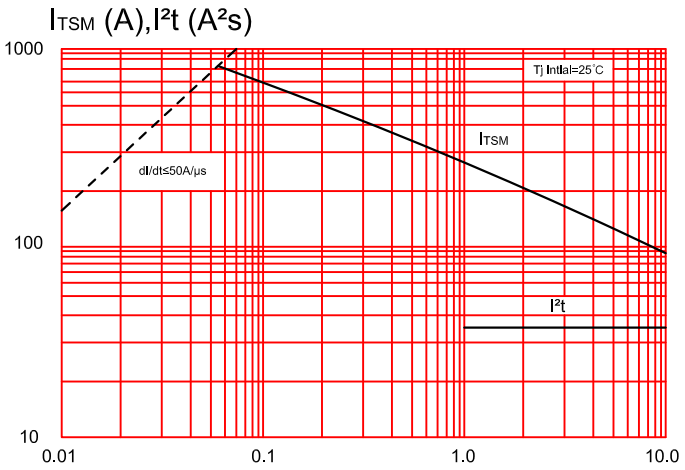


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)