



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 starting circuits...or for phase control operation, light dimmers, motor speed controllers.

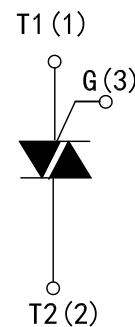
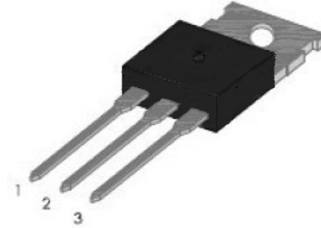
BT137 are 3 quadrants triacs, They are specially recommended for use on inductive loads.

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

MAIN FEATURES

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

TO-220C



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 to +150	°C
Operating junction temperature range		Tj	-40 to +125	°C
Repetitive Peak Off-state Voltage	Tj=25°C	VDRM	600and800	V
Repetitive Peak Reverse Voltage	Tj=25°C	VRRM	600and800	
Non repetitive Surge Peak Off-state Voltage	tp=10ms, Tj=25°C	VDSM	700and900	V
Non repetitive Peak Reverse Voltage		VRSM	700and900	
RMS on-state current (full sine wave)	BT137 Tc=110°C	IT(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	ITSM	72	A
	f = 50 Hz t=20ms		65	
I²t Value for fusing	tp=10ms	I²t	36	A²s
Critical rate of rise of on-state current (IG=2×IGT, tr≤100 ns, f=120Hz, Tj=125°C)		di /dt	50	A/μs
Peak gate current (tp=20us, Tj=125°C)		IGM	4	A
Peak Gate Power Dissipation (tp=20us, Tj=125°C)		PGM	10	W
Average gate power dissipation (Tj=125°C)		PG(AV)	1	W

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

● 3 Quadrants

Symbol	Test Condition	Quadrant		BT137	Unit
				D	
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I-II-III	MAX.	10	mA
V_{GT}		I-II-III	MAX.	1.3	V
V_{GD}	$V_D=V_{DRM}$ $R_L=3.3\text{K}\Omega$ $T_j=125^{\circ}\text{C}$	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	$I_T=100\text{mA}$		MAX.	15	mA
dV/dt	$V_D=67\%V_{DRM}$ gate open $T_j=125^{\circ}\text{C}$		MIN.	40	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	$(dI/dt)_c=3.5\text{A/ms}$ $T_j=125^{\circ}\text{C}$		MIN.	1	$\text{V}/\mu\text{s}$



STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=11A, t_p=380\mu s$	$T_j=25^{\circ}C$	1.55	V
I_{DRM} I_{RRM}	$V_D=V_{DRM} \ V_R=V_{RRM}$	$T_j=25^{\circ}C$	5	μA
		$T_j=125^{\circ}C$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(J-C)}$	Junction to Case(AC)	BT137	1.6	$^{\circ}C/W$
$R_{th(j-a)}$	Junction to ambient ($S=1cm^2$)	BT137	60	$^{\circ}C/W$

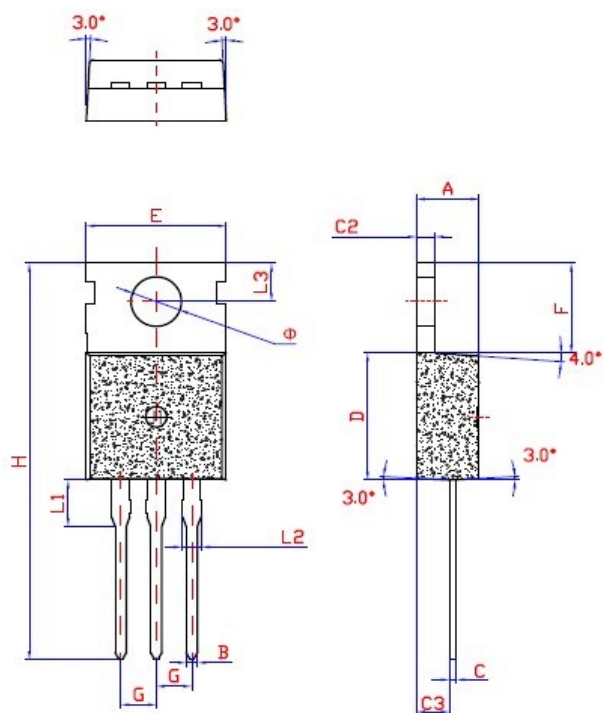
ORDERING INFORMATION

BT 137 - 600 X				
TRIAC SERIES		IGT Class		
$I_{T(RMS)}: 8A$		600 : $V_{DRM}/V_{RRM} \geq 600V$ 800 : $V_{DRM}/V_{RRM} \geq 800V$		



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	



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

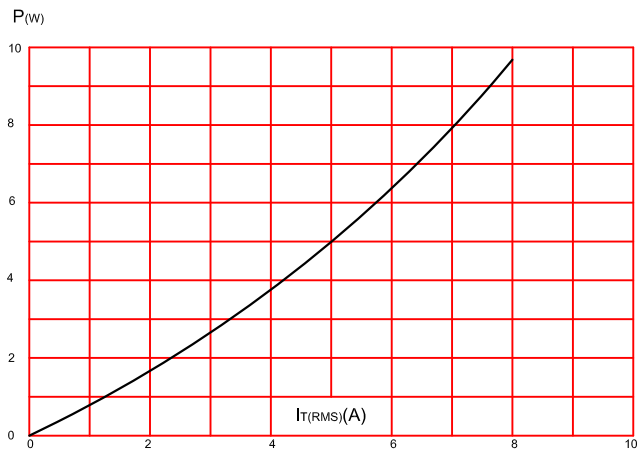


FIG.2:RMS on-state current versus case temperature(full cycle)

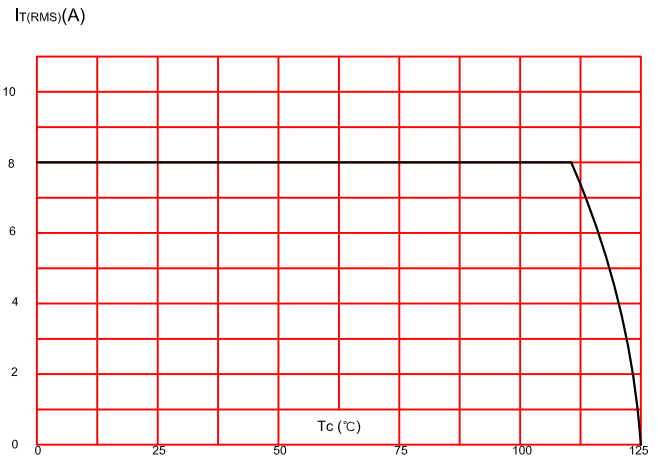


FIG.3:On-state characteristics (maximum values).

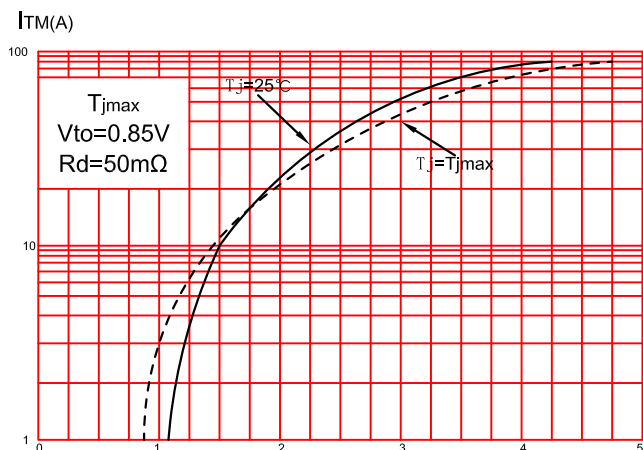


FIG.4:Surge peak on-state current versus number of cycles.

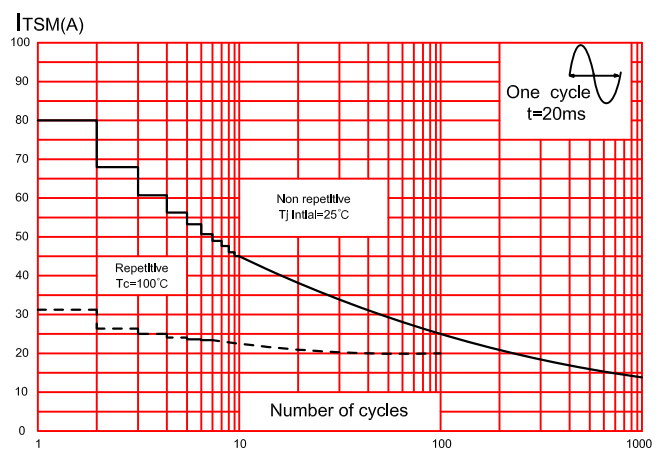


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$, and corresponding value of I^2t .

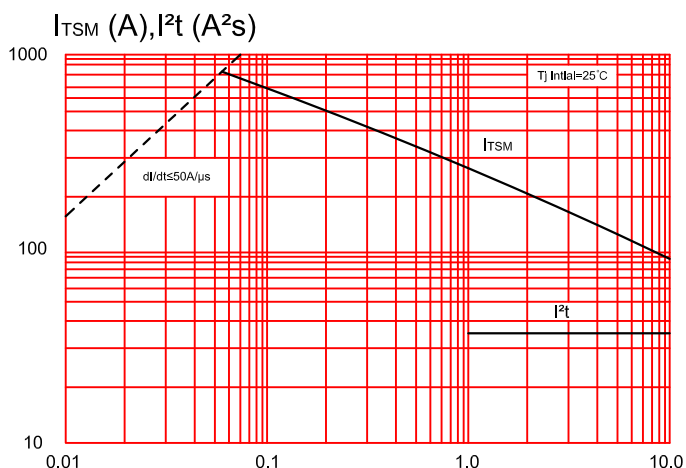


FIG.6:Relative variations of gate trigger current, holding current and latching current versus junction temperature(typical values)

