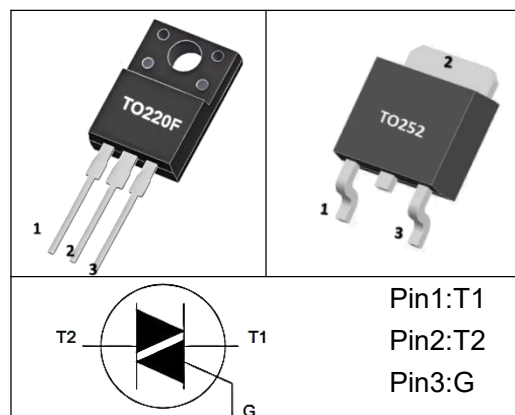


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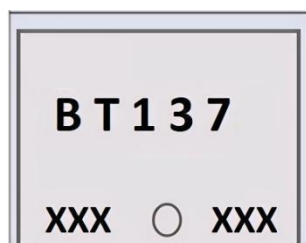
TRIAC

■ GENERAL DESCRIPTION

Passivated triacs in a plastic envelope, intended for use in applications requiring high bidirectional transient and blocking voltage capability and high thermal cycling performance. Typical applications include motor control, industrial and domestic lighting , heating and static switching.



■ MARKING



BT137S=Device Code
800E: $V_{DRM}/V_{RRM}=800V$
XXX=Date Code
Solid Dot=Green molding compound

■ ABSOLUTE MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

SYMBOL	PARAMETER		TEST CONDITION	RATINGS	UNIT
V _{DRM}	Repetitive Peak Off State Voltage	BT137-600	T _j =25 °C	600	V
		BT137-800		800	
I _{T(RMS)}	RMS On-State Current(full sine wave;T _{mb} <=102 °C)			8	A
I _{TSM}	Non Repetitive Peak. On-State Current (full sine wave, T _j =25 °C prior to surge))		t=20ms,F=50Hz	40	A
I ² t	I ² t For Fusing		t=10ms	21	A ² s
dI _T /dt	Repetitive Rate of Rise of On-state Current after Triggering I _{TM} =12A;I _G =0.2A,dI _G /dt=0.2A/μs		T2+ G+	50	A/μs
			T2+ G-	50	
			T2- G-	50	
			T2- G+	10	
V _{GM}	Peak Gate Voltage			5	V
I _{GM}	Peak Gate Current			2	A
P _{G(AV)}	Average Gate Power (Over any 20ms period)			0.5	W
P _{GM}	Peak Gate Power			5	W
T _{stg}	Storage Temperature			-40 to +150	°C
T _j	Operating junction temperature			125	°C

Notes:Although not recommended, off-state voltages up to 800V may be applied without damage, but the triac may switch to the on-state. The rate of rise of current should not exceed 6A/ μs .

BT137

TRIAC

■ THERMAL RESISTANCES

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-252/TO-220F	$R\theta_{JA}$	62.5	$^{\circ}\text{C}/\text{W}$
Junction to Case	TO-220F	$R\theta_{JC}$	3.31	$^{\circ}\text{C}/\text{W}$
	TO-252		2.6	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

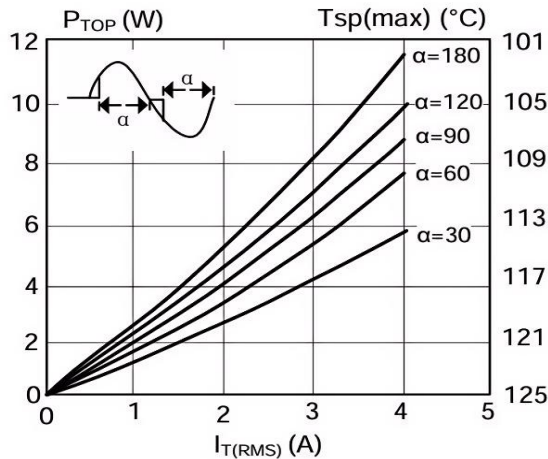
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS							
On-State Voltage	V _T	I _T =10A			1.3	1.4	V
Gate trigger current	I _{GT}	T2+, G+	V _D =12V, I _T =0.1A		3	5	mA
		T2+, G -			3	5	mA
		T2-, G -			3	5	mA
		T2-, G +			8	15	mA
Latching Current	I _L	T2+, G+	V _D =12V, I _T =0.1A		5	10	mA
		T2+, G -			6	12	mA
		T2-, G -			5	10	mA
		T2-, G +			5	10	mA
Gate Trigger Voltage	V _{GT}	V _D =12V, I _T =0.1A			0.8	1.5	V
		V _D =400V, I _T =0.1A ; T _j =125°C		0.25	0.4		V
Holding Current	I _H	V _D =12V, I _{GT} =0.1A			5	20	mA
Off-state Leakage Current	I _D	V _D =V _{DRM(max)} , T _j =125°C			0.1	0.5	mA
DYNAMIC CHARACTERISTICS							
Critical Rate of Rise of off-state Voltage	dV _D /dt	V _{DM} =67%, V _{DRM(max)} , T _j =125°C Exponential waveform,Gate open circuit		100	250		V/μs
Critical Rate of Change of commutating Voltage	dV _{com} /dt	V _{DM} =400V , T _j =95°C, I _{T(RMS)} =8A dl _{com} /dt =3.6A/ms Gate open circuit			20		V/μs
Gate Controlled Turn-on Time	tgt	I _{TM} =12A,V _D =V _{DRM(max)} ,I _G =0.1A dl _G /dt=5A/μs			2		μs

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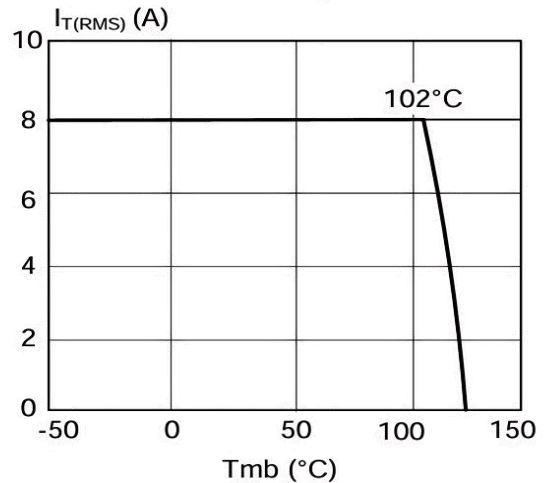
TRIAC

■ TYPICAL CHARACTERISTICS (1)

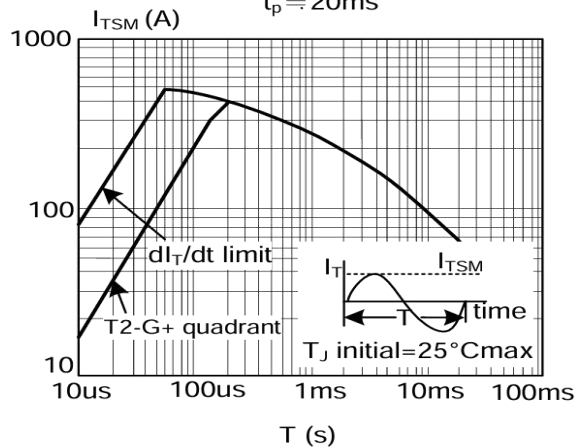
Maximum On -State Dissipation. P_{Tot} vs. RMS On-State Current, $I_{T(RMS)}$, Where α =conduction Angle



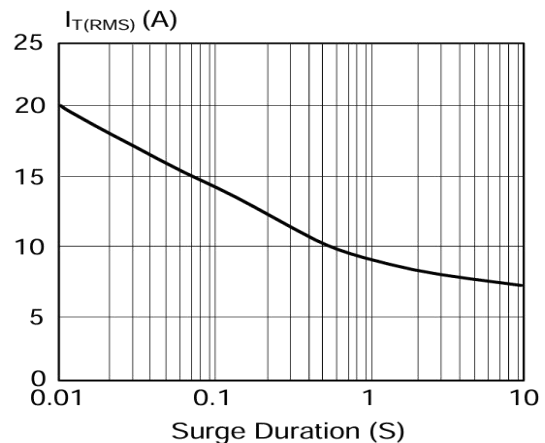
Maximum Permissible RMS Current $I_{T(RMS)}$ vs. Versus Heatsink Temperature T_{mb}



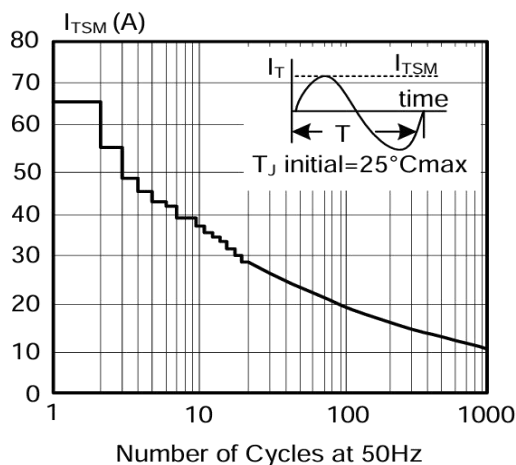
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Pulse Width t_p , for Sinusoidal Currents, $t_p \approx 20ms$



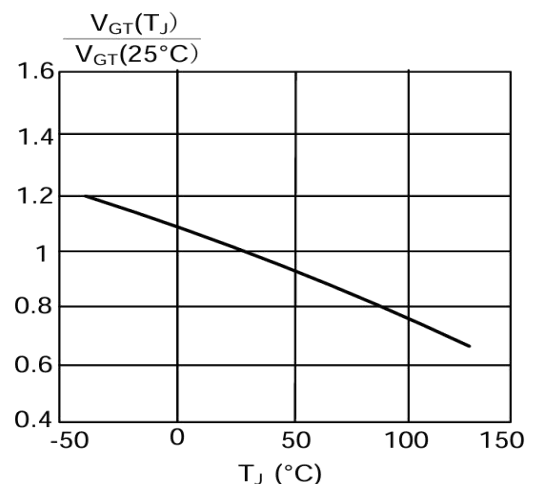
Maximum Permissible Repetitive RMS On-State Current $I_{T(RMS)}$ vs. Versus Surge Duration, for Sinusoidal Currents, $f=50Hz$, $T_{mb} \leq 102^\circ C$



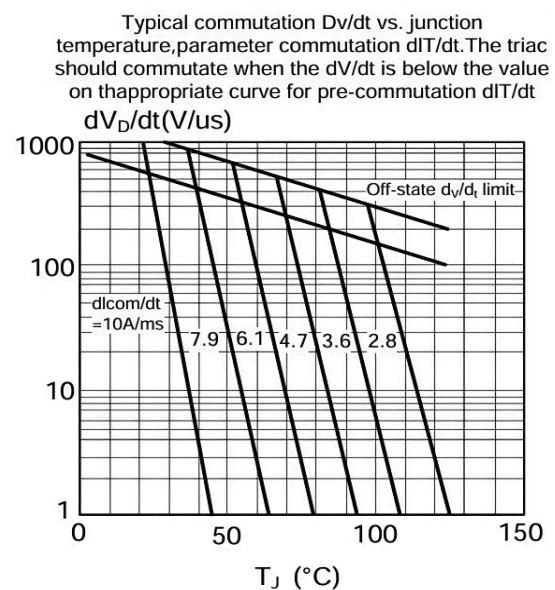
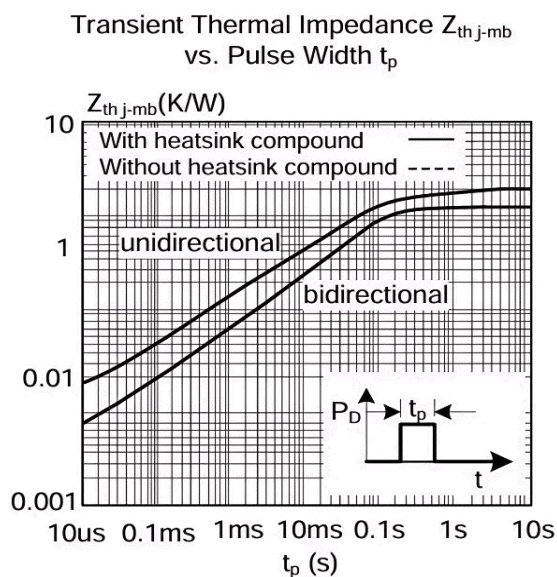
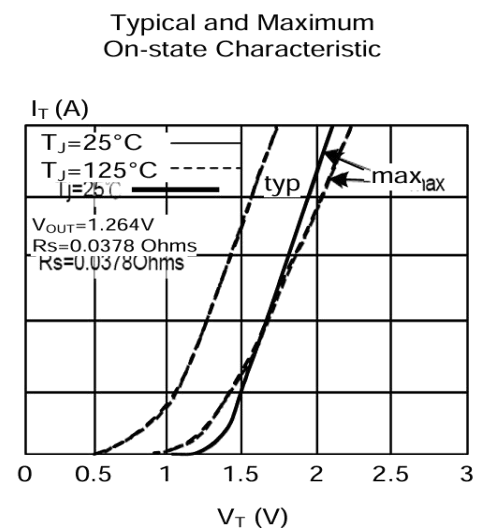
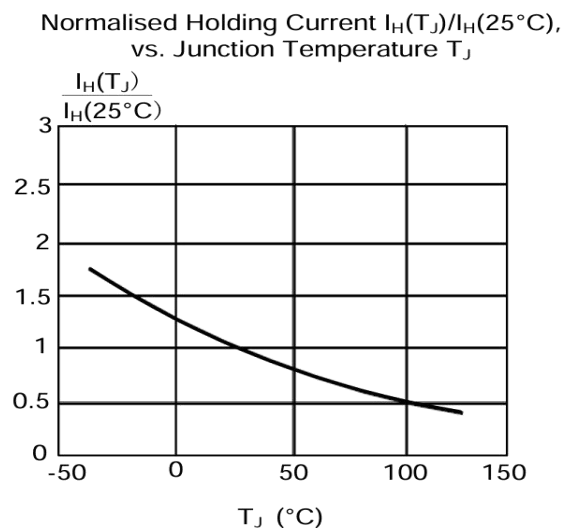
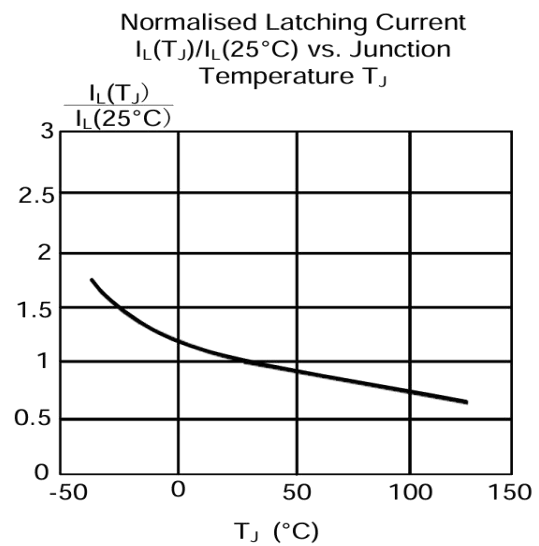
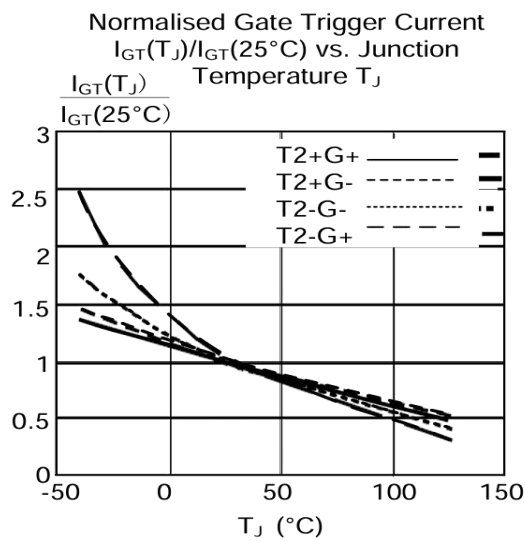
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Number of Cycles, for Sinusoidal Currents, $f=50Hz$



Normalised Gate Trigger Voltage $V_{GT}(T_J)/V_{GT}(25^\circ C)$ vs. Junction Temperature T_J



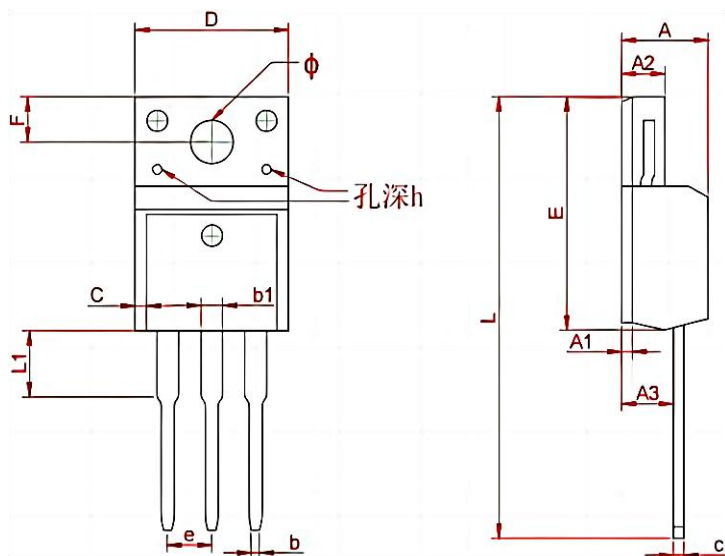
■ TYPICAL CHARACTERISTICS (2)



BT137

TRIAC

TO - 220F Package Outline Dimensions

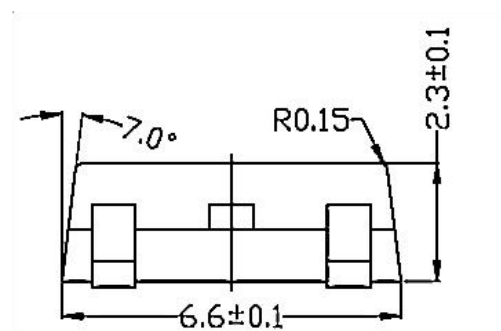
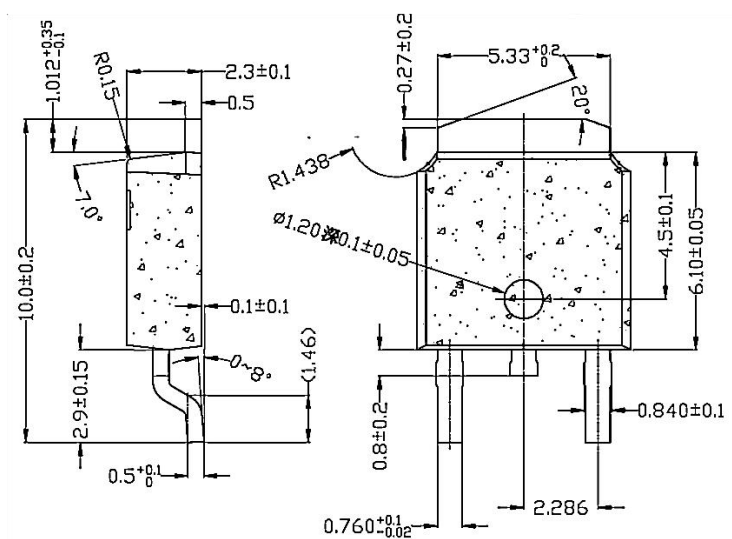


Symbol	Dimensions In Millimeters	
	Min	Max
A	4.300	4.750
A1	0.7 REF	
A2	2.300	2.850
A3	2.500	2.900
b	0.380	0.420
b1	1.220	1.280
C	1.08	1.200
c	0.480	0.520
D	10.15	10.450
E	15.700	15.950
e	2.574 TYP	
F	3.470 REF	
y	3.200 REF	
h	0.000	0.800
L	28.780	28.900
L1	2.990	3.100

TO - 220F Packing Information

Package version	Tube dimensions LxWxH (mm)	Per Tube (pcs)	Tube per box	Inner box dimensions LxWxH (mm)	PCS/ Inner box	Outer box dimensions LxWxH(mm)	PCS/ Outer box
TO-220F	530*32*7	50	20	580*155*50	1000	602*277*188	5000

■ TO - 252 Package Outline Dimensions



■ TO - 252 Packing Information

Package version	Reel dimensions $\phi \times H$ (mm)	Per Reel (pcs)	Reels per box	Inner box dimensions $L \times W \times H$ (mm)	Outer box (pcs)	Outer box dimensions $L \times W \times H$ (mm)
T0-252	$\phi 330 \times 20$	2500	2	360*340*50	25000	375*375*280