

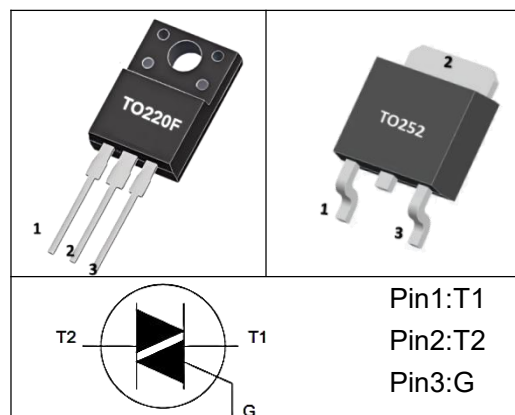


BT137

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



: HY LOGO

BT137=Device Code

800E:VDRM/VRRM=800V

XXXX=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	65	A
			t=16.7ms	17	
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.



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■ 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	$I_T=10\text{A}$		1.3	1.65	V
Gate trigger current	I_{GT}	T2+, G+	$V_D=12\text{V}, I_T=0.1\text{A}$	3	5	mA
		T2+, G-		3	5	mA
		T2-, G-		3	5	mA
		T2-, G+		8	15	mA
Latching Current	I_L	T2+, G+	$V_D=12\text{V}, I_T=0.1\text{A}$	5	10	mA
		T2+, G-		6	12	mA
		T2-, G-		5	10	mA
		T2-, G+		5	10	mA
Gate Trigger Voltage	V_{GT}	$V_D=12\text{V}, I_T=0.1\text{A}$		0.8	1.2	V
		$V_D=400\text{V}, I_T=0.1\text{A}; T_J=125^{\circ}\text{C}$	0.25	0.4		V
Holding Current	I_H	$V_D=12\text{V}, I_{GT}=0.1\text{A}$		5	20	mA
Off-state Leakage Current	I_D	$V_D=V_{DRM(\text{max})}, T_J=125^{\circ}\text{C}$		0.1	0.5	mA
DYNAMIC CHARACTERISTICS						
Critical Rate of Rise of off-state Voltage	dV_D/dt	$V_{DM}=67\%, V_{DRM(\text{max})}, T_J=125^{\circ}\text{C}$ Exponential waveform, Gate open circuit	100	250		V/ μs
Critical Rate of Change of commutating Voltage	dV_{com}/dt	$V_{DM}=400\text{V}, T_J=95^{\circ}\text{C}, I_{T(\text{RMS})}=8\text{A}$ $dI_{com}/dt=3.6\text{A/ms}$ Gate open circuit		20		V/ μs
Gate Controlled Turn-on Time	tgt	$I_{TM}=12\text{A}, V_D=V_{DRM(\text{max})}, I_G=0.1\text{A}$ $dI_G/dt=5\text{A}/\mu\text{s}$		2		μs

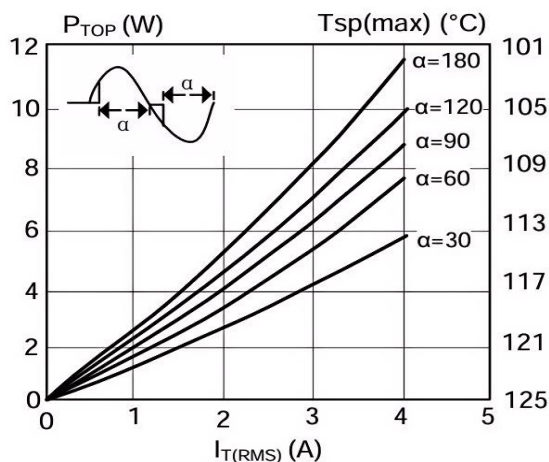


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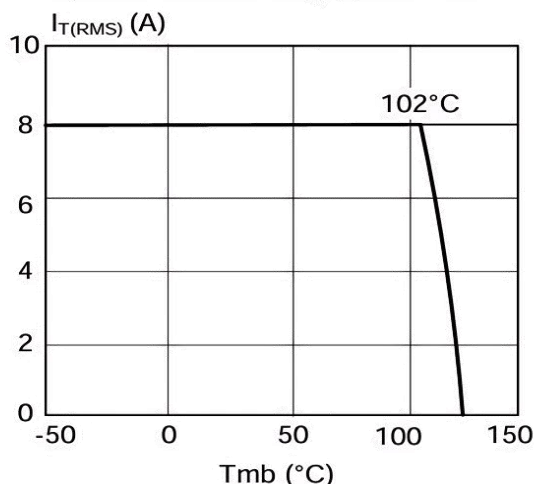
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■ TYPICAL CHARACTERISTICS (1)

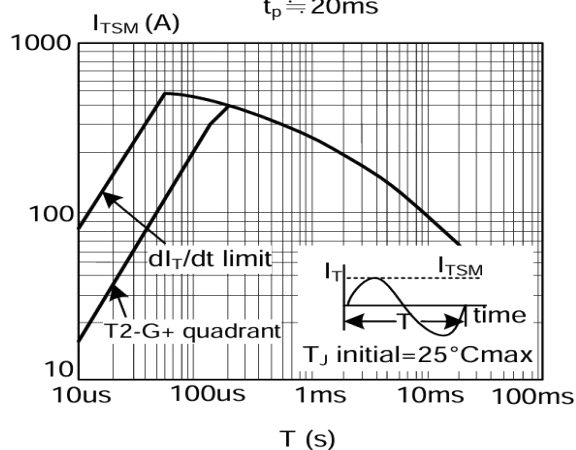
Maximum On -State Dissipation. P_{Tot} vs. RMS On-State Current, $I_{T(RMS)}$, Where α =conduction Angle



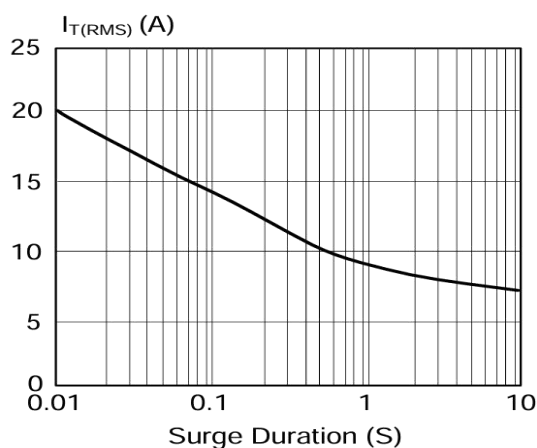
Maximum Permissible RMS Current $I_{T(RMS)}$ vs. Versus Heatsink Temperature T_{mb}



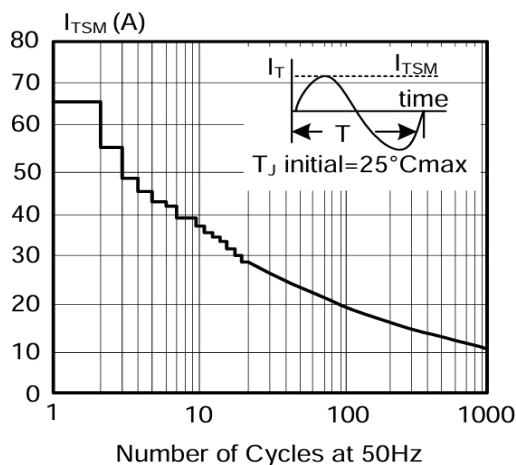
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Pulse Width t_p , for Sinusoidal Currents, $t_p \approx 20\text{ms}$



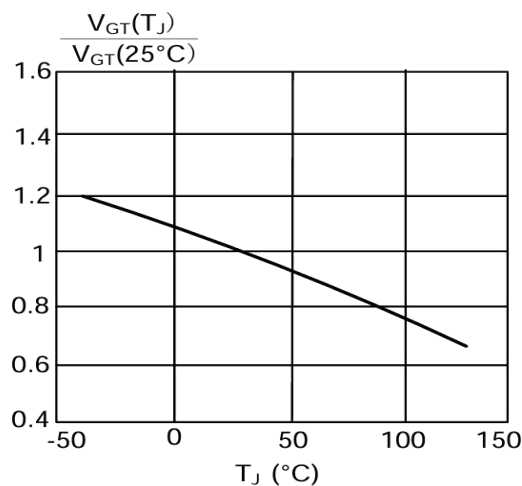
Maximum Permissible Repetitive RMS On-State Current $I_{T(RMS)}$ vs. Versus Surge Duration, for Sinusoidal Currents, $f=50\text{Hz}$, $T_{mb} \leq 102^\circ\text{C}$



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



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

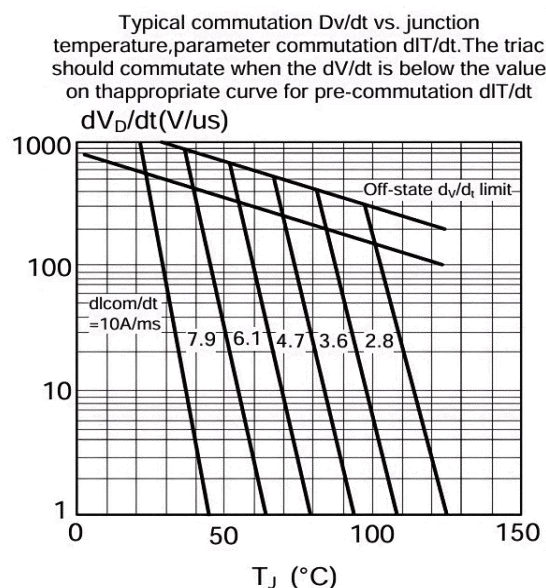
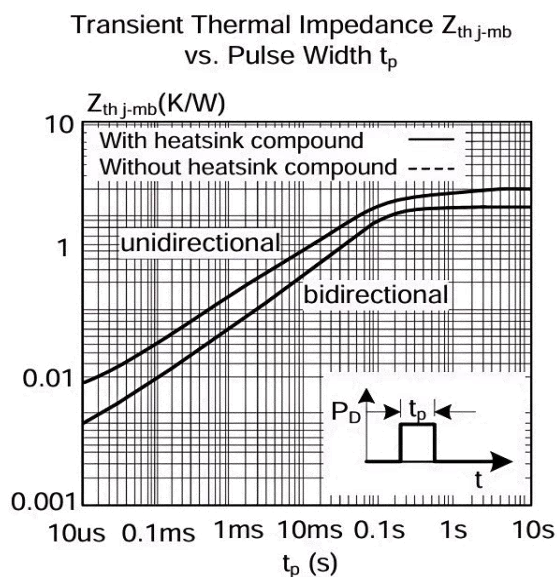
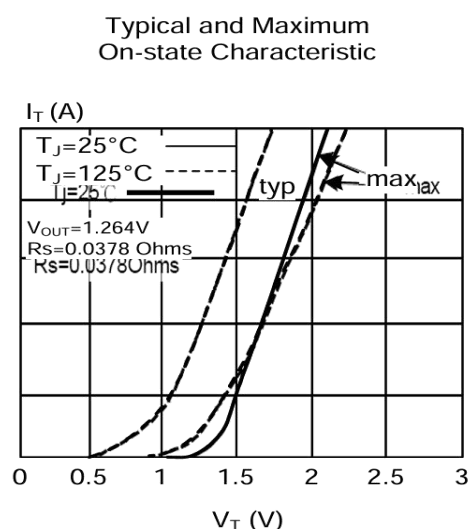
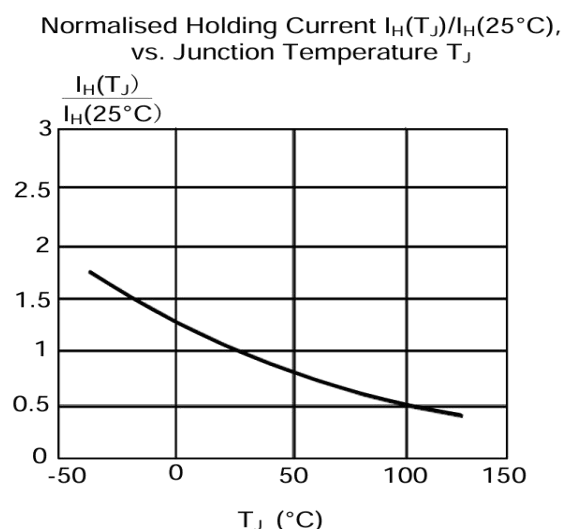
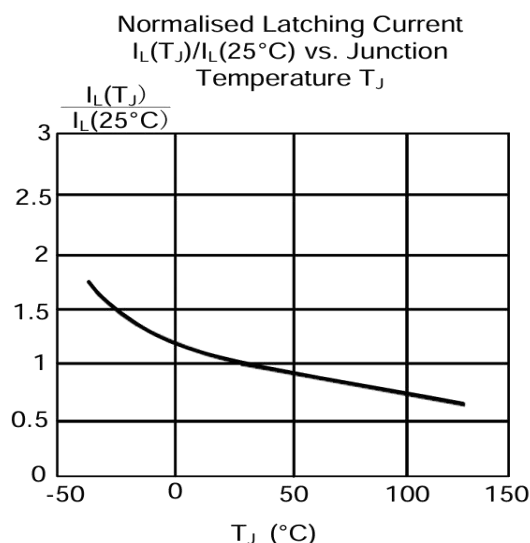
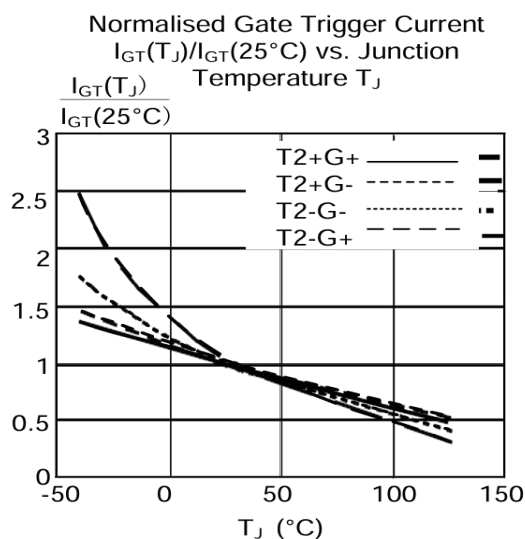




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■ TYPICAL CHARACTERISTICS (2)

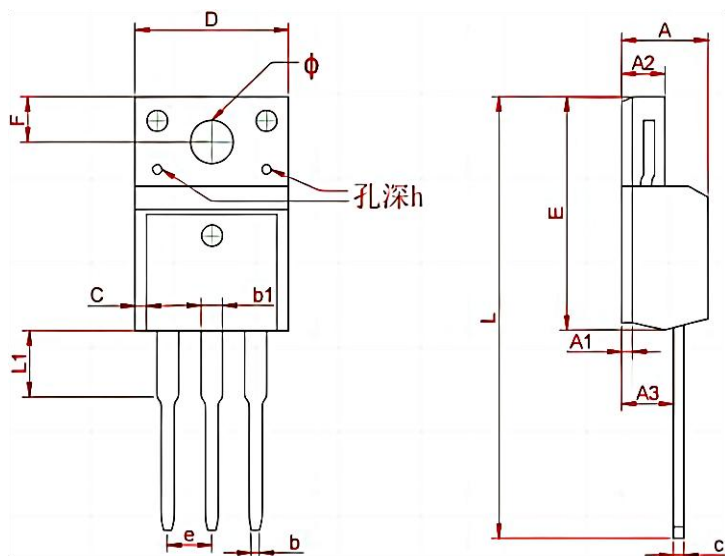




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TRIAC

TO - 220F Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max	Min	Max
A	4.300	4.750	0.169	0.185
A1	1.830 REF		0.072 REF	
A2	2.300	2.850	0.090	0.112
A3	2.500	2.900	0.098	0.114
b	0.400	0.420	0.016	0.016
b1	1.220	1.280	0.048	0.050
C	0.690	0.720	0.027	0.028
c	0.490	0.510	0.019	0.020
D	9.960	10.200	0.392	0.400
E	15.000	15.950	0.588	0.625
e	2.574 TYP		0.101TYP	
F	3.470 REF		0.136 REF	
y	3.200 REF		0.125 REF	
h	0.000	0.300	0.000	0.012
L	28.780	28.900	1.128	1.133
L1	2.990	3.100	0.117	0.122

TO - 220F Packing Information



50PCS

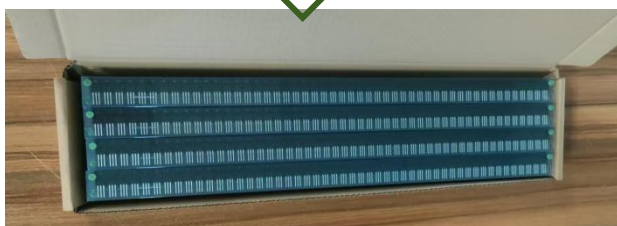


20 Tube



Outer Box

5 Inner
Box



Inner Box

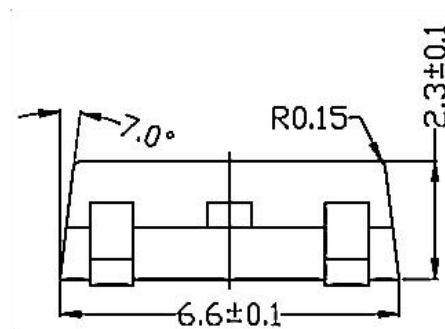
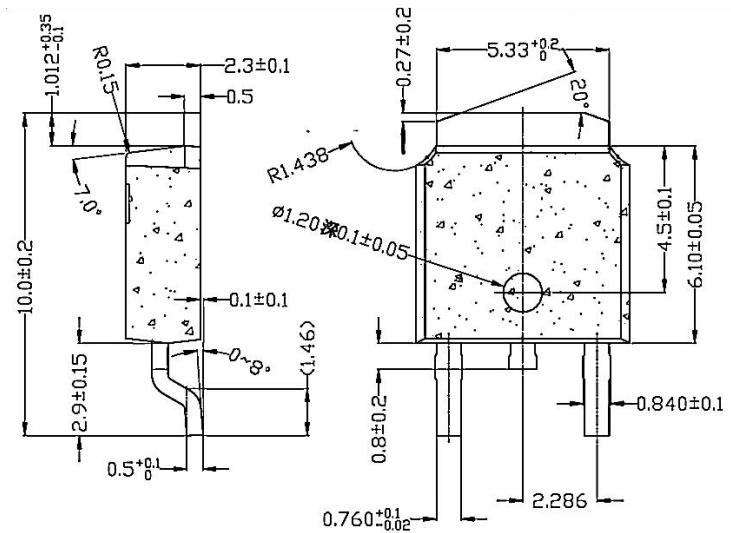
Package version	Tube dimensions LxWxH (mm)	Per Tube (pcs)	Tube per box	Inner box dimensions LxWxH (mm)	PCS/ Inner box	Outer box dimensions LxWxH(mm)	PCS/ Outer box
TO-220F	530*32*7	50	20	580*155*50	1000	602*277*188	5000



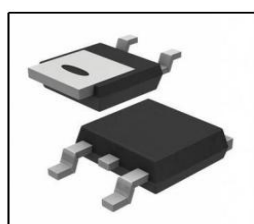
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TRIAC

TO - 252 Package Outline Dimensions



TO - 252 Packing Information



2500PC
S/reel



2 Reel/BOX



Outer box

5 Inner
Box



Inner box

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