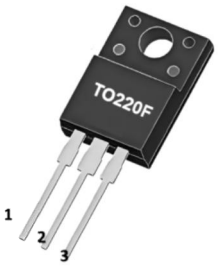
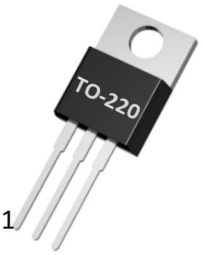
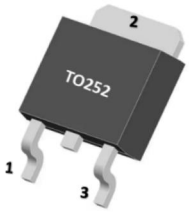
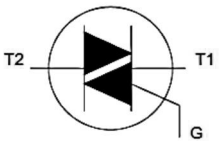
GENERAL DESCRIPTION

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.









Pin1:T1 Pin2:T2 Pin3:G

MARKING

WPM : LOGO
BT137=Device Code
800E: V_{DRM}/V_{RRM}=800V

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

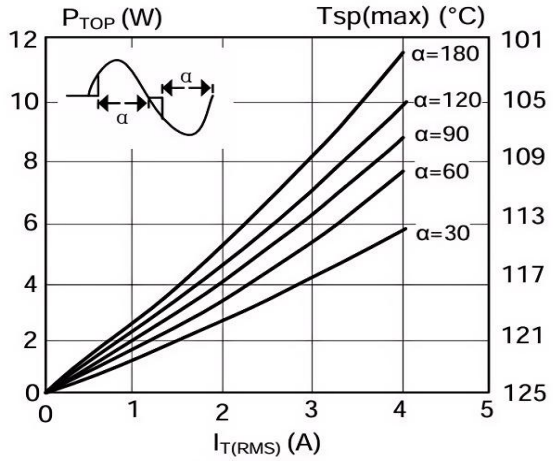
SYMBOL	PARAMETER		CONDITION	RATINGS	UNIT
VDRM	Repetitive Peak Off State Voltage	BT137-600E	Tj=25℃	600	V
		BT137-800E		800	
IT(RMS)	RMS On-State Current(full sine wave;Tmb<=102℃)			8	A
ITSM	Non Repetitive Peak. On-State Current (full sine wave, Tj =25℃prior to surge))		t=20ms,F=50Hz	80	A
I²t	I2t For Fusing		t=10ms	30	A²s
dIT /dt	Repetitive Rate of Rise of On-state Current after Triggering ITM=12A;IG=0.2A,dIG/dt=0.2A/μs		T2+ G+	50	A/μs
			T2+ G-	50	
			T2- :G-	50	
			T2- ::: G+	10	
IGM	Peak Gate Current			4	A
PG(AV)	Average Gate Power (Over any 20ms period)			1	W
PGM	Peak Gate Power			5	W
Tstg	Storage Temperature			-40 to +150	℃
Tj	Operating junction temperature			125	℃
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.					

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

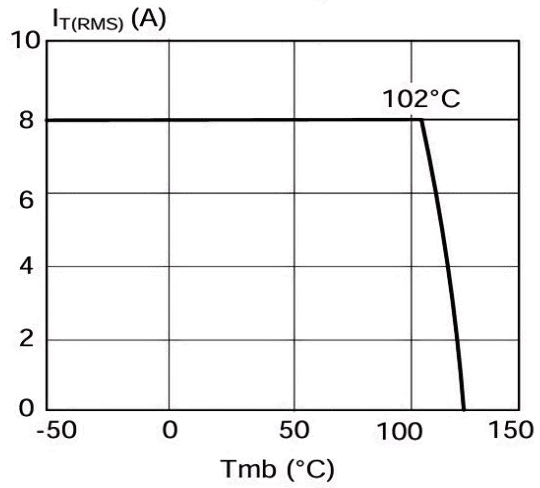
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS							
On-State Voltage	VT	IT=10A			1.3	1.4	V
Gate trigger current	IGT	T2+, G+	VD=12V, IT=0.1A		3	5	mA
		T2+, G -			3	5	mA
		T2-, G -			3	5	mA
		T2-, G +			8	15	mA
Latching Current	IL	T2+, G+	VD=12V, IT=0.1A		5	10	mA
		T2+, G -			6	12	mA
		T2-, G -			5	10	mA
		T2-, G +			5	10	mA
Gate Trigger Voltage	VGT	VD=12V, IT=0.1A			0.8	1.5	V
		VD=400V, IT=0.1A ; Tj=125°C		0.25	0.4		V
Holding Current	IH	VD=12V, IGT=0.1A			5	20	mA
Off-state Leakage Current	ID	VD=VDRM(max) , Tj=125°C			0.1	0.5	mA
DYNAMIC CHARACTERISTICS							
Critical Rate of Rise of off-state Voltage	dVD/dt	VDM=67%，VDRM(max), Tj=125°C Exponential waveform,Gate open circuit		100	250		V/μs
Critical Rate of Change of commutating Voltage	dVcom/dt	VDM=400V , Tj=95°C, IT(RMS)=8A dIcom/dt =3.6A/ms Gate open circuit			20		V/μs
Gate Controlled Turn-on Time	tgt	ITM=12A,VD=VDRM(max),IG=0.1A dIG/dt=5A/μs			2		μs

TYPICAL CHARACTERISTICS（1）

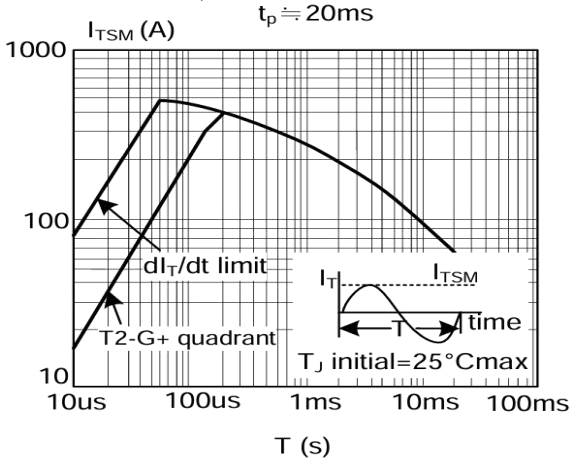
Maximum On -State Dissipation. P_{Tot} vs. RMS On-State Current, $I_{T(RMS)}$, Where α=conduction Angle



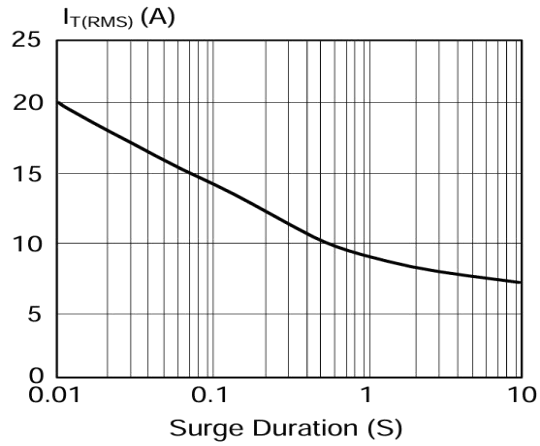
Maximum Permissible RMS Current $I_{T(RMS)}$ vs. Versus Heatsink Temperature Tmb



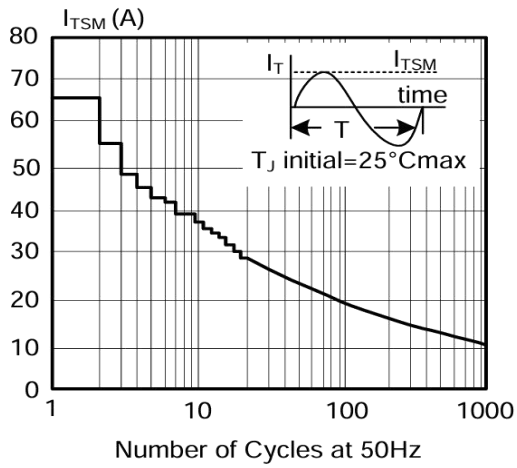
Maximum Permissible Non-Repetitive Peak On-State Current I_{TSM} vs. Pulse Width t_p, for Sinusoidal Currents, $t_p \fallingdotseq 20ms$



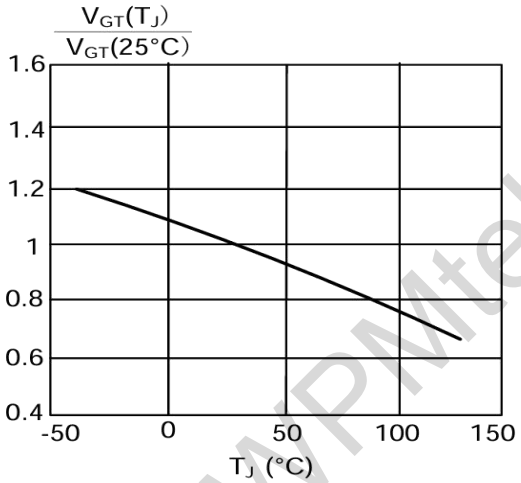
Maximum Permissible Repetitive RMS On-State Current $I_{T(RMS)}$ vs. Versus Surge Duration, for Sinusoidal Currents, f=50Hz, Tmb≤102°C



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

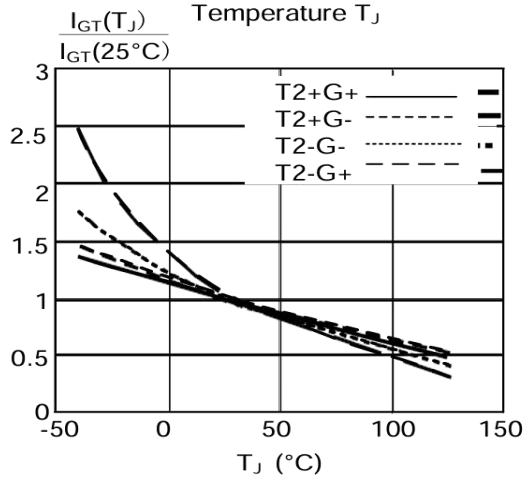


Normalised Gate Trigger Voltage $V_{GT}(T_J)/V_{GT}(25°C)$ vs. Junction Temperature T_J

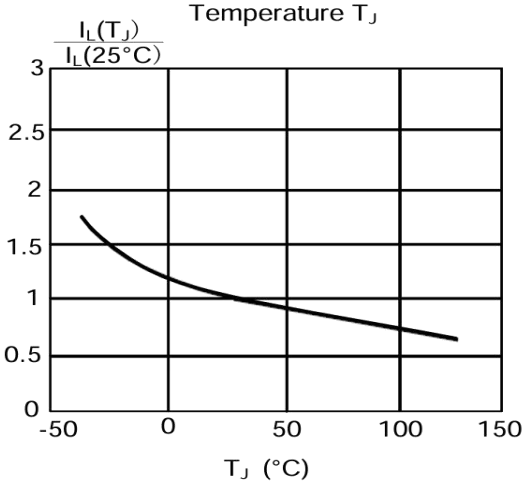


TYPICAL CHARACTERISTICS（2）

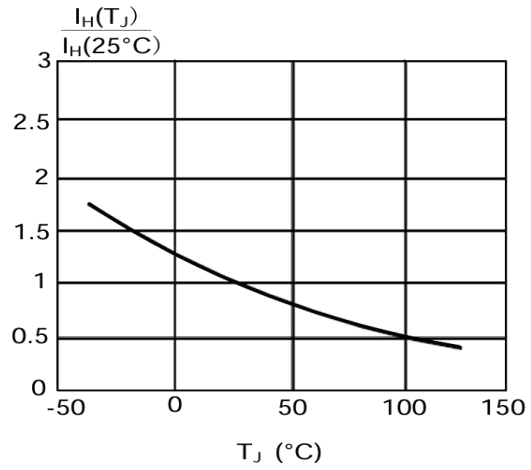
Normalised Gate Trigger Current $I_{GT}(T_J)/I_{GT}(25°C)$ vs. Junction Temperature T_J



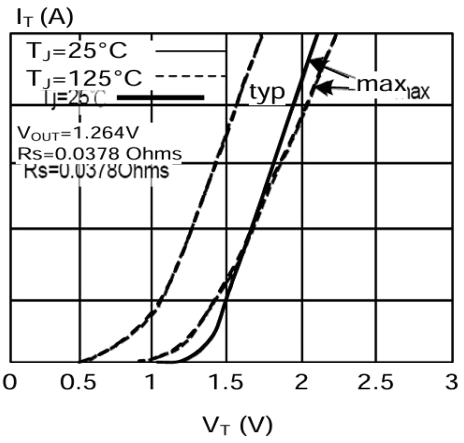
Normalised Latching Current $I_L(T_J)/I_L(25°C)$ vs. Junction Temperature T_J



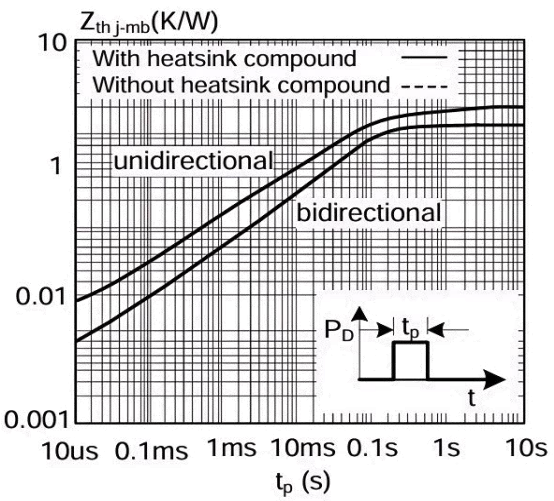
Normalised Holding Current $I_H(T_J)/I_H(25°C)$, vs. Junction Temperature T_J



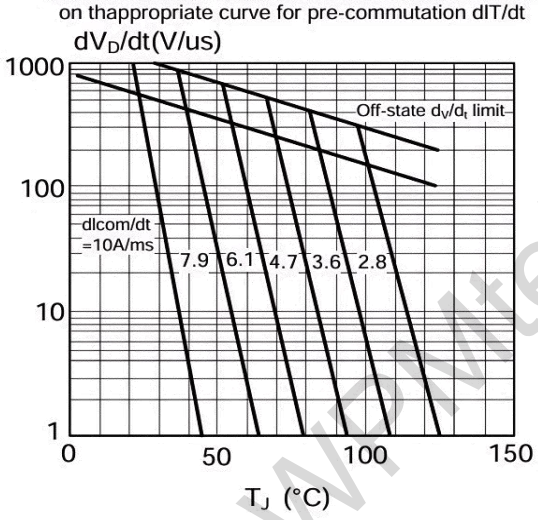
Typical and Maximum On-state Characteristic



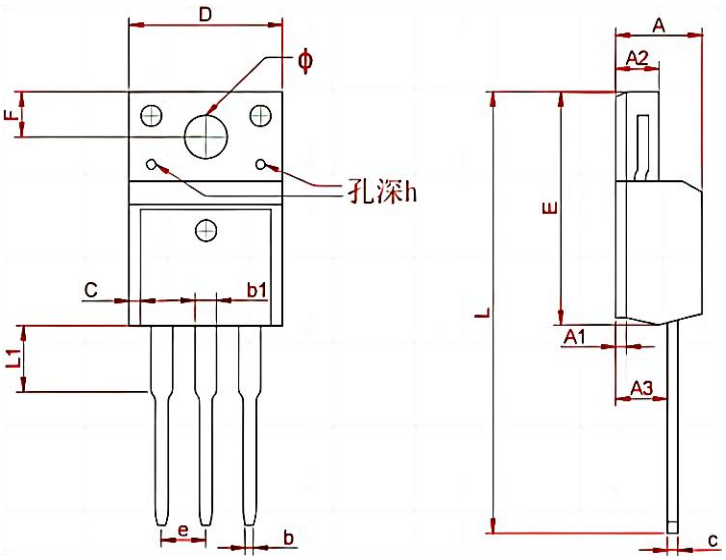
Transient Thermal Impedance $Z_{th\ j\text{-}mb}$ vs. Pulse Width t_p



Typical commutation Dv/dt vs. junction temperature,parameter commutation dIT/dt.The triac should commutate when the dV/dt is below the value on thappropriate curve for pre-commutation dIT/dt



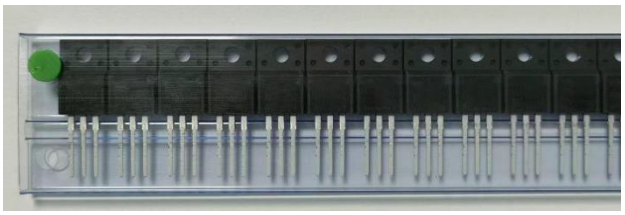
TO - 220F Package Outline Dimensions



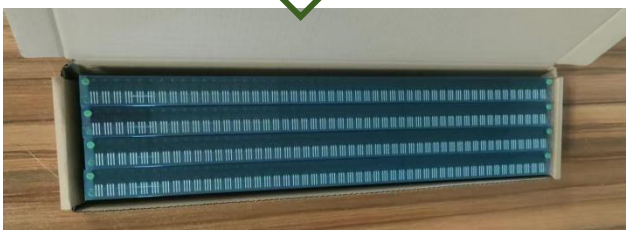
Symbol	Dimensions In Millimeters	
	Min	Max
A	4.300	4.750
A1	0.7 REF	
A2	2.300	2.850
A3	2.500	2.900
b	0.380	0.420
b1	1.220	1.280
C	1.08	1.200
c	0.480	0.520
D	10.15	10.450
E	15.700	15.950
e	2.574 TYP	
F	3.470 REF	
y	3.200 REF	
h	0.000	0.800
L	28.780	28.900
L1	2.990	3.100

TO - 220F Packing Information

50PCS



20 Tube



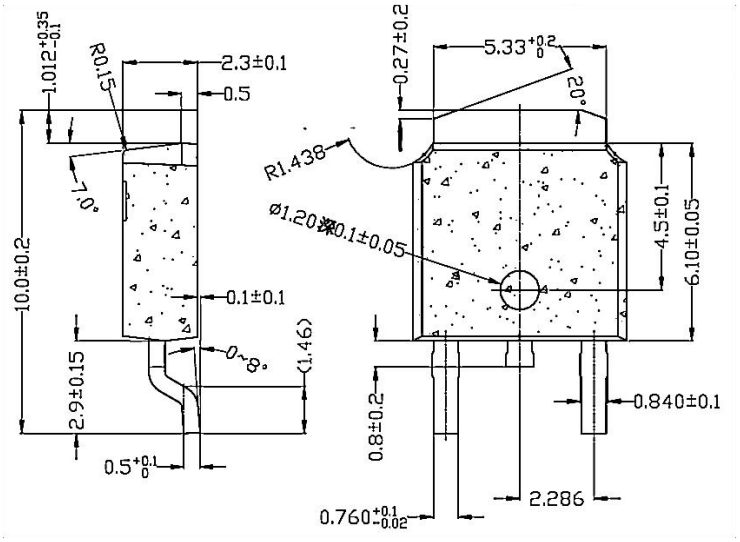
5 Inner Box

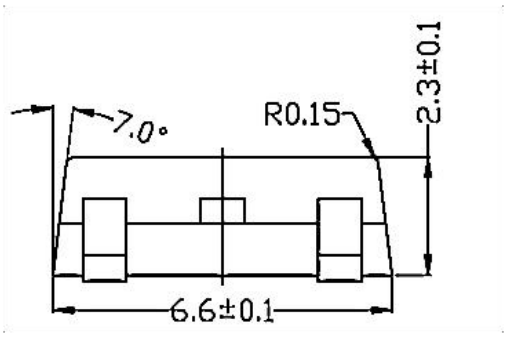
Outer Box

Inner Box

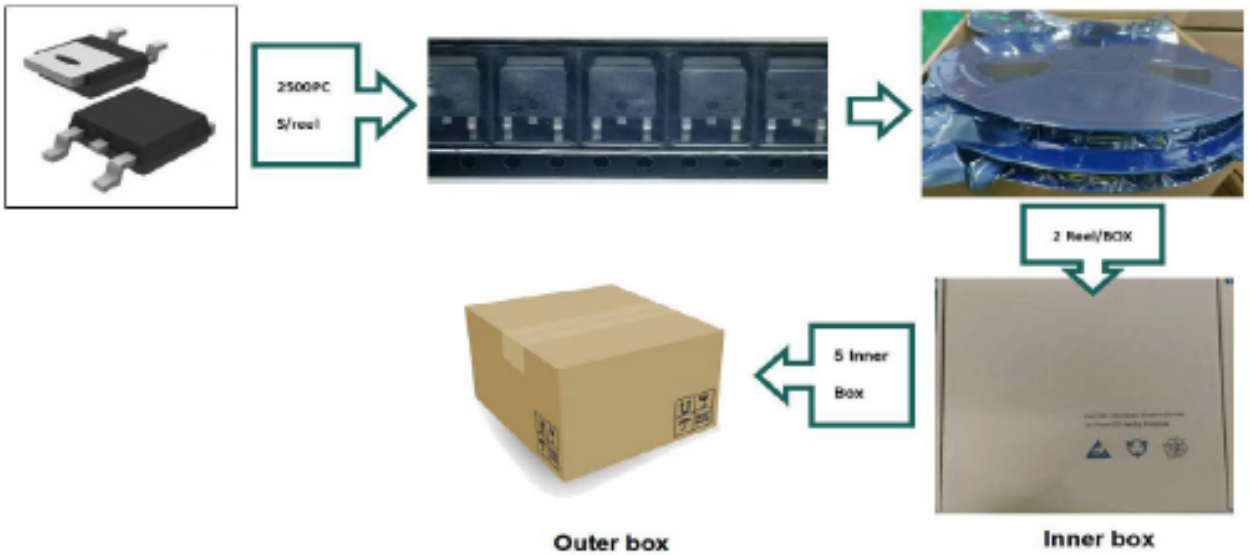
Package version	Tube dimensions LxW×H (mm)	Per Tube (pcs)	Tube per box	Inner box dimensions LxW×H (mm)	PCS/ Inner box	Outer box dimensions L×W×H(mm)	PCS/ Outer box
TO-220F	530*32*7	50	20	580*155*50	1000	602*277*188	5000

TO - 252 Package Outline Dimensions



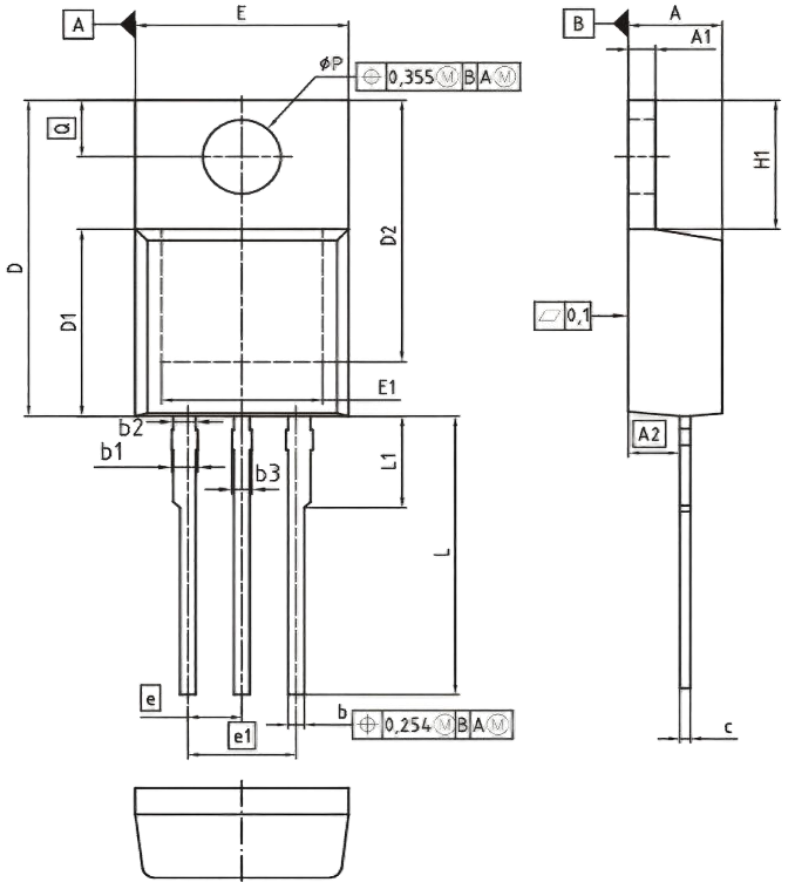


TO - 252 Packing Information



Package version	Reel dimensions Φ×H (mm)	Per Reel (pcs)	Reels per box	Inner box dimensions L×W×H(mm)	Outer box (pcs)	Outer box dimensions L×W×H (mm)
TO-252	Φ330*20	2500	2	360*340*50	25000	375*375*280

TO - 220 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min	Max
A	4.30	4.57
A1	1.17	1.40
A2	2.15	2.72
b	0.65	0.86
b1	0.95	1.40
b2	0.95	1.15
b3	0.65	1.15
c	0.33	0.60
D	14.81	15.95
D1	8.51	9.45
D2	12.19	13.10
E	9.70	10.45
E1	6.50	8.60
e	2.54	
e1	5.08	
N	3.00	
H1	5.90	6.90
L	13.00	14.00
L1	-	4.80
⌀P	3.60	3.89
Q	2.60	3.00