PNP Epitaxial Planar Power Transistor

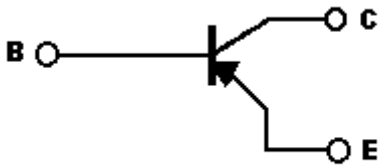
BTP949L3

Features

- Extremely low equivalent on-resistance, $R_{CE(sat)}$ = 75mΩ(max) @ I_C = -3A, I_B=-0.1A
- 6A continuous current(up to 20A peak)
- Excellent current gain linearity
- Pb-free package

Symbol

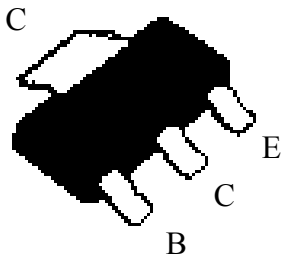
BTP949L3



B：Base
C：Collector
E：Emitter

Outline

SOT-223



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current (DC)	I_C	-5.5	A
Collector Current (Pulse)	I_{CP}	-20 (Note 1)	
Power Dissipation @ T_A=25℃	P_{tot}	3 (Note 2)	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : 1. Single Pulse , Pw≦380μs, Duty≦2%.
2. The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 4 square inch minimum.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
*BV_{CEO}	-30	-	-	V	I_C=-10mA, I_B=0
BV_{CBO}	-50	-	-	V	I_C=-100μA, I_E=0
BV_{CER}	-50	-	-	V	I_C=-1μA, R_{BE}≤1kΩ
BV_{EBO}	-6	-	-	V	I_E=-100μA, I_C=0
I_{CER}	-	-	-50	μA	V_{CE}=-40V, R_{BE}≤1kΩ
I_{CBO}	-	-	-50	nA	V_{CB}=-40V, I_B=0
I_{EBO}	-	-	-10	nA	V_{EB}=-6V, I_C=0
*$V_{CE(sat)}$ 1	-	-60	-75	mV	I_C=-500mA, I_B=-20mA
*$V_{CE(sat)}$ 2	-	-100	-140	mV	I_C=-1A, I_B=-20mA
*$V_{CE(sat)}$ 3	-	-190	-270	mV	I_C=-2A, I_B=-200mA
*$V_{CE(sat)}$ 4	-	-380	-440	mV	I_C=-5.5A, I_B=-500mA
*$V_{BE(sat)}$	-	-1.1	-1.25	V	I_C=-5.5A, I_B=-500mA
*$V_{BE(on)}$	-	-	-1.06	V	V_{CE}=-1V, I_C=-5.5A
*h_{FE} 1	100	200	-	-	V_{CE}=-1V, I_C=-10mA
*h_{FE} 2	100	200	300	-	V_{CE}=-1V, I_C=-1A
*h_{FE} 3	60	80	-	-	V_{CE}=-1V, I_C=-5A
*h_{FE} 4	-	10	-	-	V_{CE}=-2V, I_C=-20A
f_T	-	100	-	MHz	V_{CE}=-10V, I_C=-100mA, f=50MHz
Cob	-	122	-	pF	V_{CB}=-10V, f=1MHz
t_{on}	-	120	-	ns	V_{CC}=-10V, I_C=10I_B1=-10I_B2=4A, R_L=2.5Ω
t_{off}	-	130	-	ns	

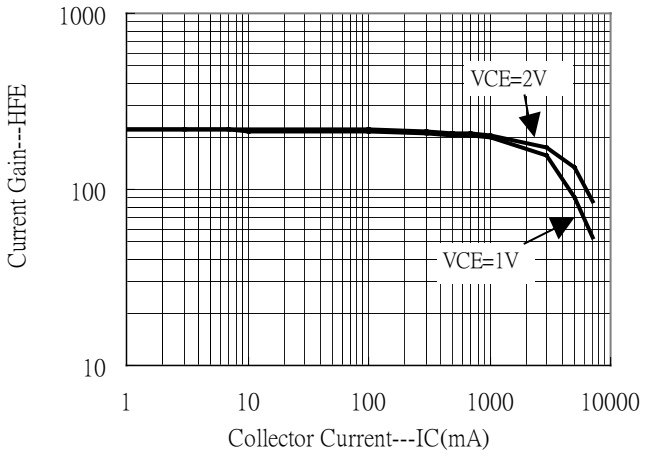
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Ordering Information

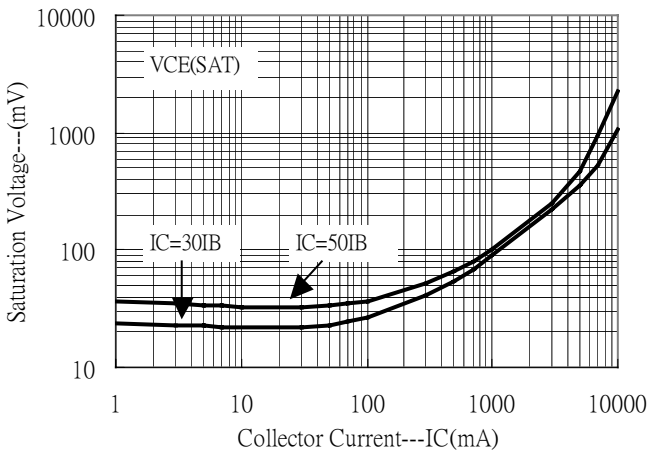
Device	Package	Shipping	Marking
BTN949L3	SOT-223 (Pb-free)	1000 pcs / Tape & Reel	P949

Characteristic Curves

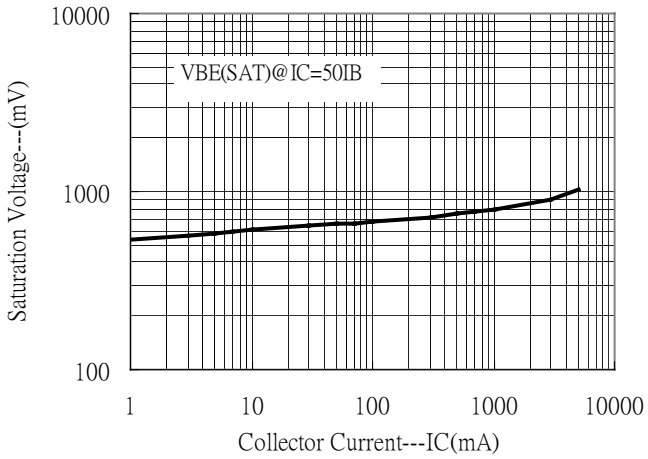
Current Gain vs Collector Current



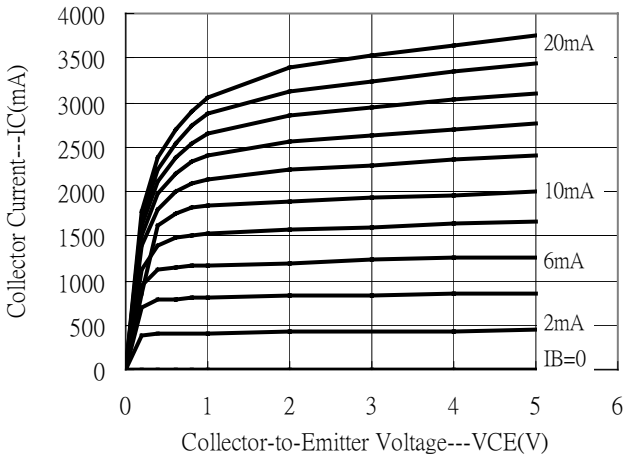
Saturation Voltage vs Collector Current



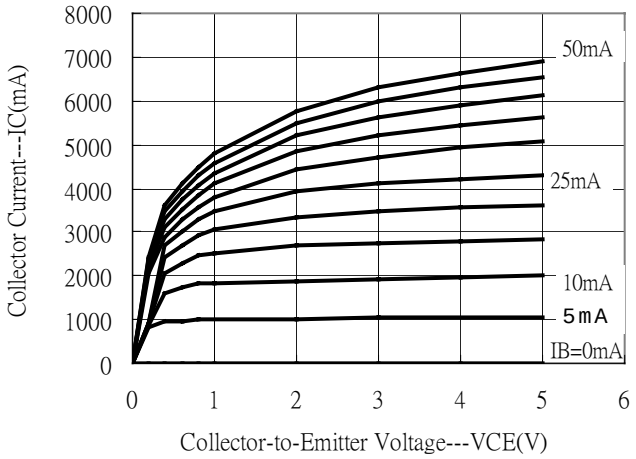
Saturation Voltage vs Collector Current



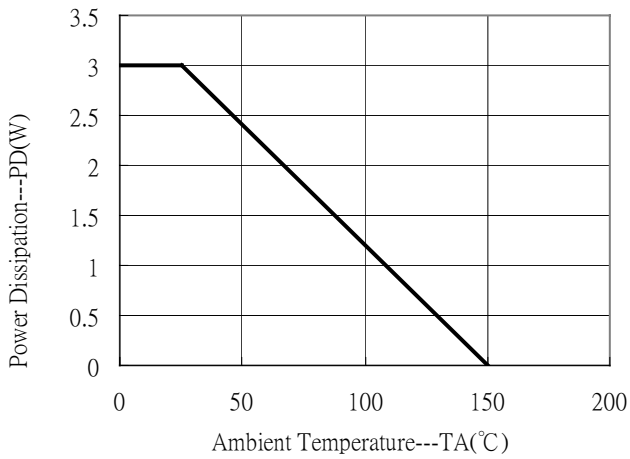
Grounded Emitter Output Characteristics



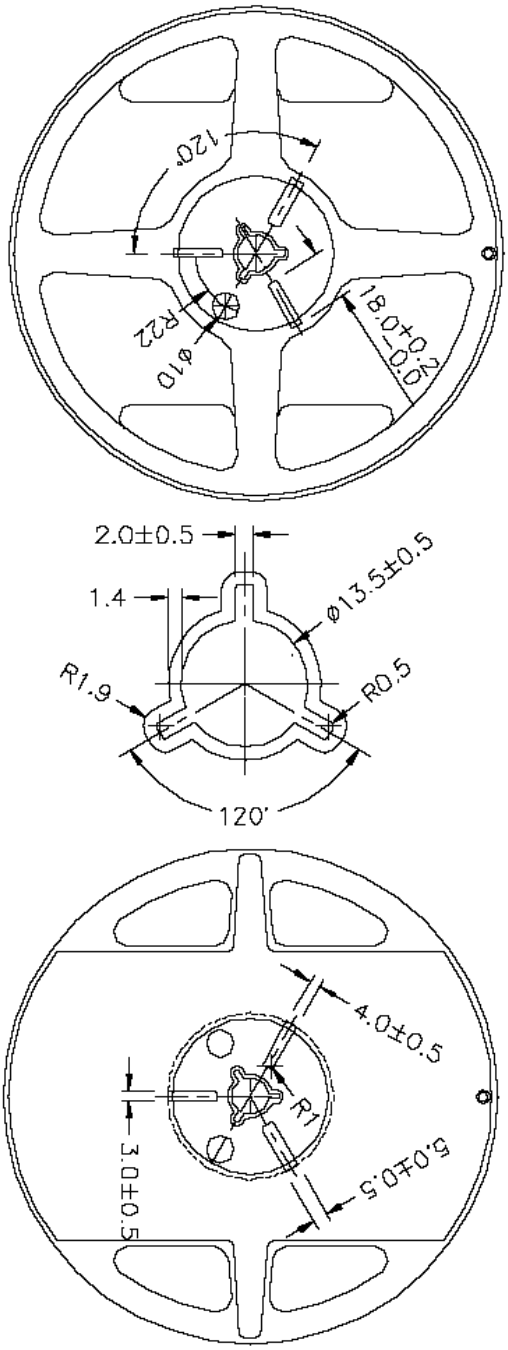
Grounded Emitter Output Characteristics

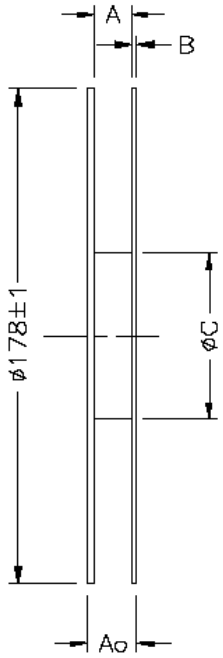


Power Derating Curve



Reel Dimension



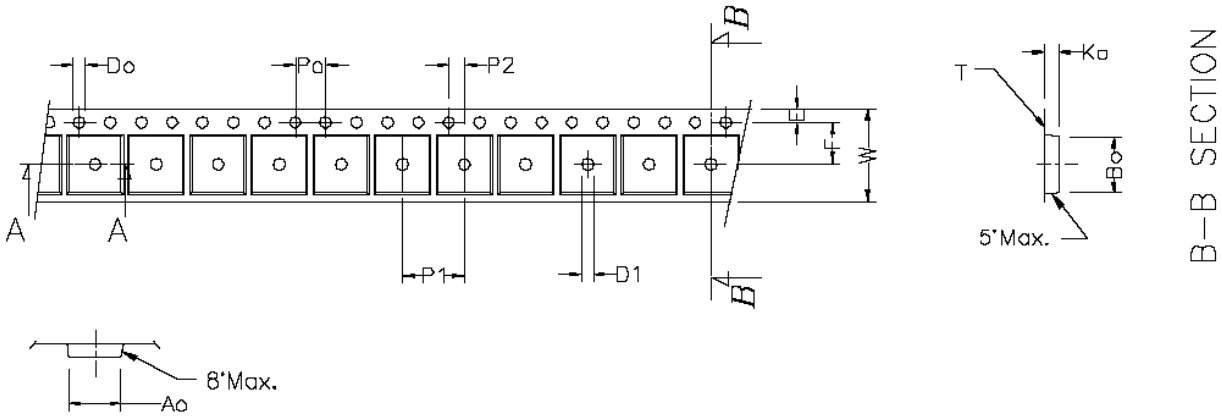


Width of carrier tape	8	12	16
A±0.05	9.0	13.0	17.0
Ao±0.05	12.0	16.0	20.0
B	1.5	1.5	1.5
øC $^{+1}_{0}$	60	60	60

NOTE :
1. Material : Anti-static polystyrene.
2. Surface resistivity 10 ^{9} ohm/square

UNIT : millimeter

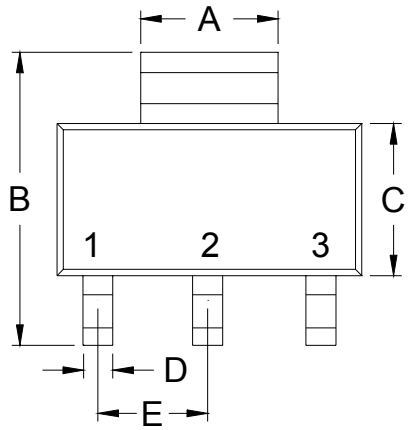
Carrier Tape Dimension

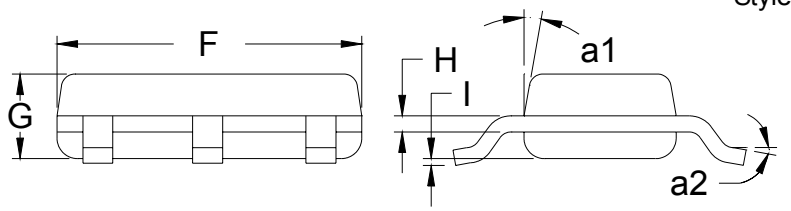


A–A SECTION

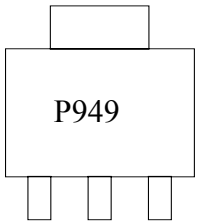
symbol	Ao	Bo	Ko	Po	P1	P2	T
Spec	6.83±0.1	7.42±0.1	1.88±0.1	4.0±0.1	8.0±0.10	2.0±0.05	0.292±0.02
symbol	E	F	Do	D1	W	10Po	
Spec	1.75±0.1	5.5±0.05	1.60±0.1	1.5±0.25	$12.0^{+0.3}_{-0.1}$	40.0±0.2	

SOT-223 Dimension





Marking:



Style: Pin 1.Base 2.Collector 3.Emitter

3-Lead SOT-223 Plastic
Surface Mounted Package
CYStek Package Code: L3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1142	0.1220	2.90	3.10	G	0.0551	0.0709	1.40	1.80
B	0.2638	0.2874	6.70	7.30	H	0.0098	0.0138	0.25	0.35
C	0.1299	0.1457	3.30	3.70	I	0.0008	0.0039	0.02	0.10
D	0.0236	0.0315	0.60	0.80	a1	*13°	-	*13°	-
E	*0.0906	-	*2.30	-	a2	0°	10°	0°	10°
F	0.2480	0.2638	6.30	6.70					

Notes: 1.Controlling dimension: millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0