

**PNP Epitaxial Planar Transistor**

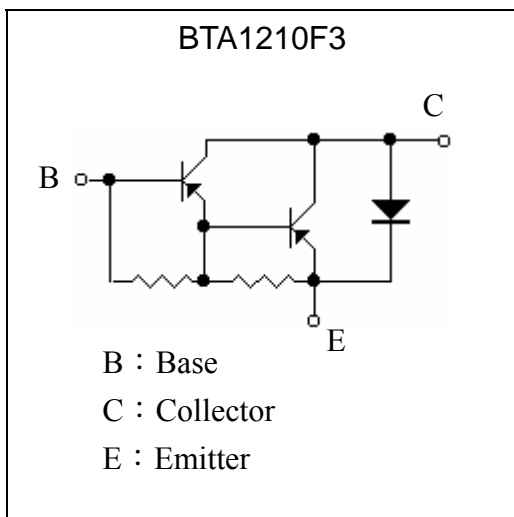
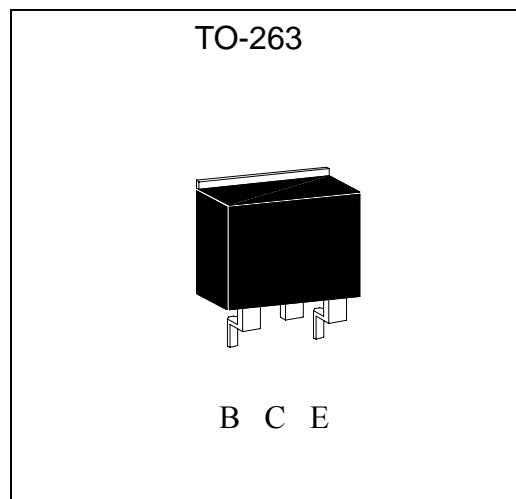
# BTA1210F3

**Description**

The BTA1210F3 is a PNP Darlington transistor, designed for use in general purpose amplifier and low speed switching application.

**Features**

- High  $BV_{CEO}$
- High DC current gain
- High current capability
- Monolithic construction with built-in base-emitter shunt resistors
- RoHS compliant package

**Equivalent Circuit****Outline**



**Absolute Maximum Ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V <sub>CB0</sub>	-120	V
Collector-Emitter Voltage	V <sub>CE0</sub>	-120	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current (DC)	I <sub>C</sub>	-10	A
Collector Current (Pulse)	I <sub>CP</sub>	-15 (Note )	A
Power Dissipation	Pd(T <sub>A</sub> =25°C)	2	W
	Pd(T <sub>C</sub> =25°C)	60	W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	62.5	°C/W
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	2.08	°C/W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C

Note : Single Pulse Pw ≤ 350μs, Duty ≤ 2%.

**Characteristics** (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CE0</sub>	-120	-	-	V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
BV <sub>CB0</sub>	-120	-	-	V	I <sub>C</sub> =-100μA, I <sub>E</sub> =0
I <sub>CB0</sub>	-	-	-200	μA	V <sub>CB</sub> =-120V, I <sub>E</sub> =0
I <sub>CE0</sub>	-	-	-200	μA	V <sub>CE</sub> =-120V, I <sub>B</sub> =0
I <sub>EBO</sub>	-	-	-2	mA	V <sub>EB</sub> =-5V, I <sub>C</sub> =0
*V <sub>CE(sat)</sub> 1	-	-	-1.25	V	I <sub>C</sub> =-4A, I <sub>B</sub> =-16mA
*V <sub>CE(sat)</sub> 2	-	-	-1.65	V	I <sub>C</sub> =-8A, I <sub>B</sub> =-80mA
*V <sub>BE(sat)</sub>	-	-	-2.5	V	I <sub>C</sub> =-8A, I <sub>B</sub> =-80mA
*V <sub>BE(on)</sub>	-	-	-2.8	V	V <sub>CE</sub> =-4V, I <sub>C</sub> =-4A
*h <sub>FE1</sub>	1	-	12	K	V <sub>CE</sub> =-4V, I <sub>C</sub> =-4A
*h <sub>FE2</sub>	100	-	-	-	V <sub>CE</sub> =-4V, I <sub>C</sub> =-8A
Cob	-	-	300	pF	V <sub>CB</sub> =-10V, I <sub>E</sub> =0A, f=1MHz

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

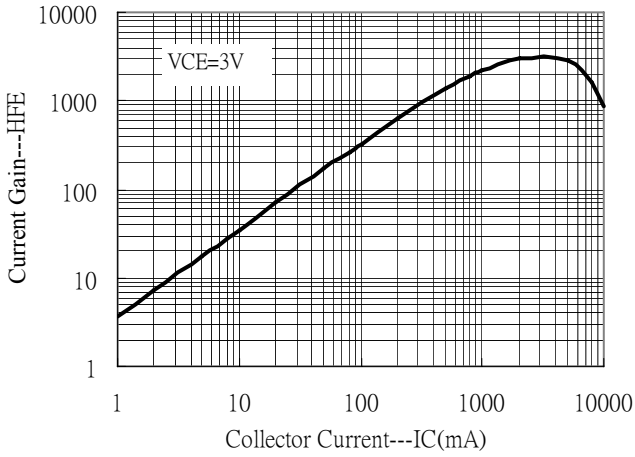
**Ordering Information**

Device	Package	Shipping	Marking
BTA1210F3	TO-263 (Pb-free)	800 pcs / Tape & Reel	A1210

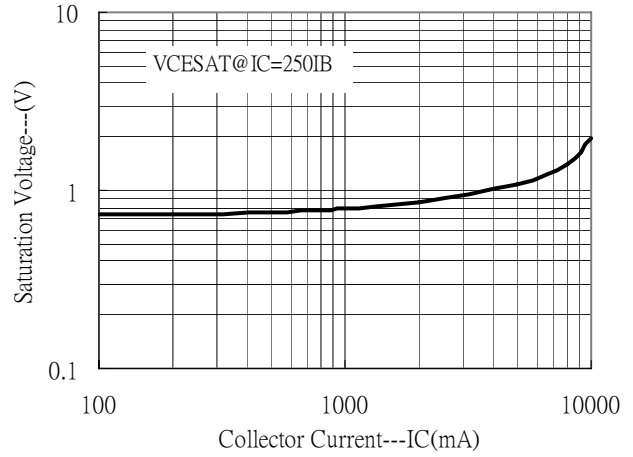


### Characteristic Curves

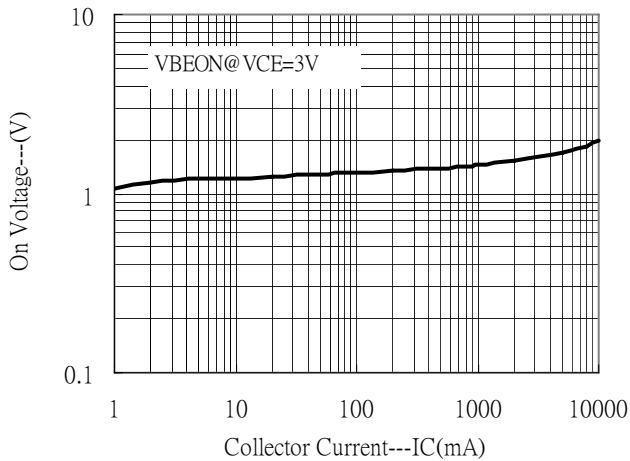
Current Gain vs Collector Current



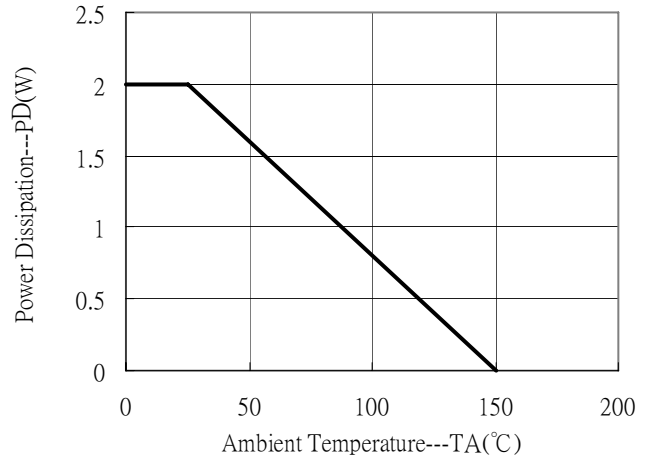
Saturation Voltage vs Collector Current



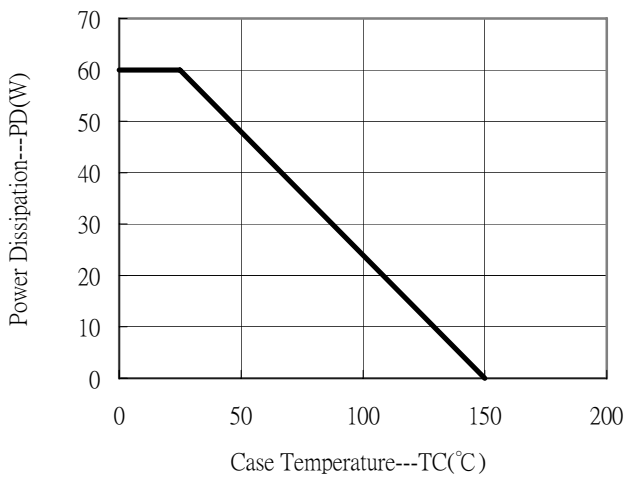
On voltage vs Collector Current



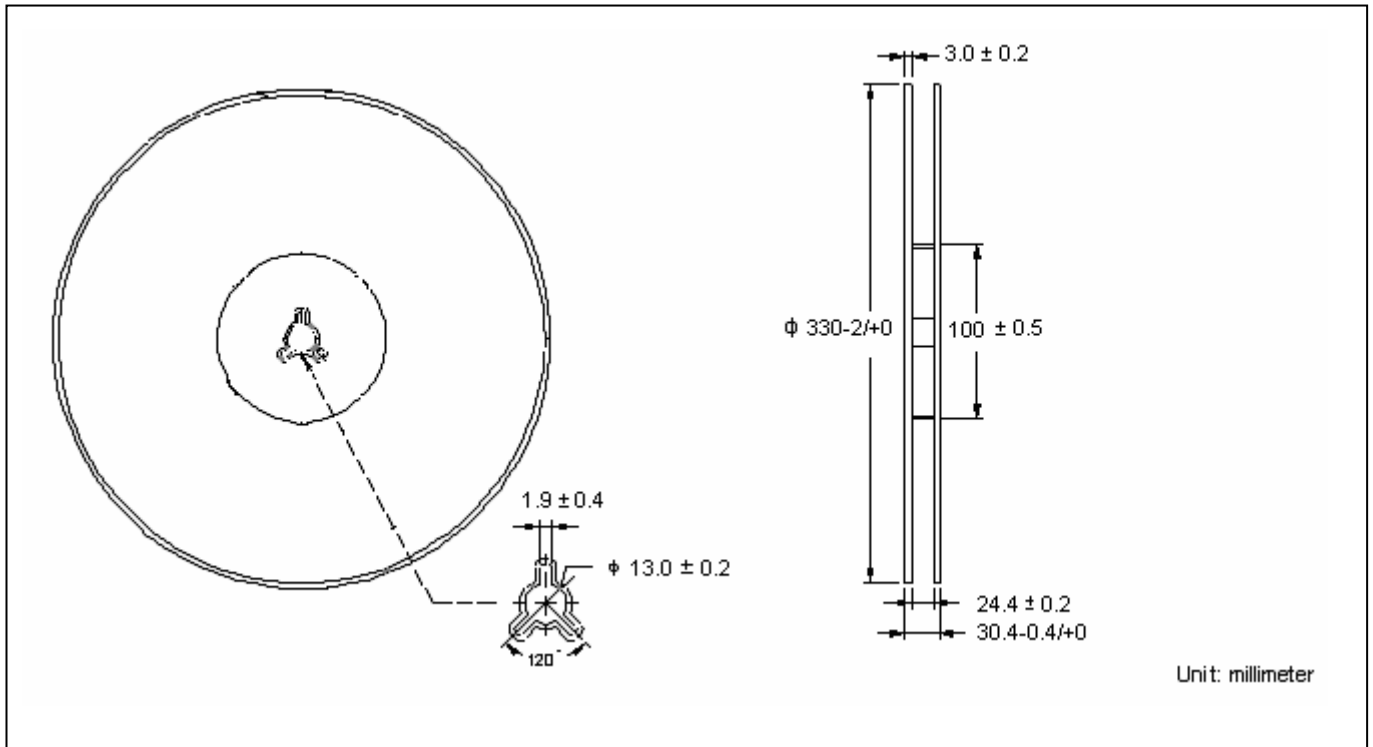
Power Derating Curve



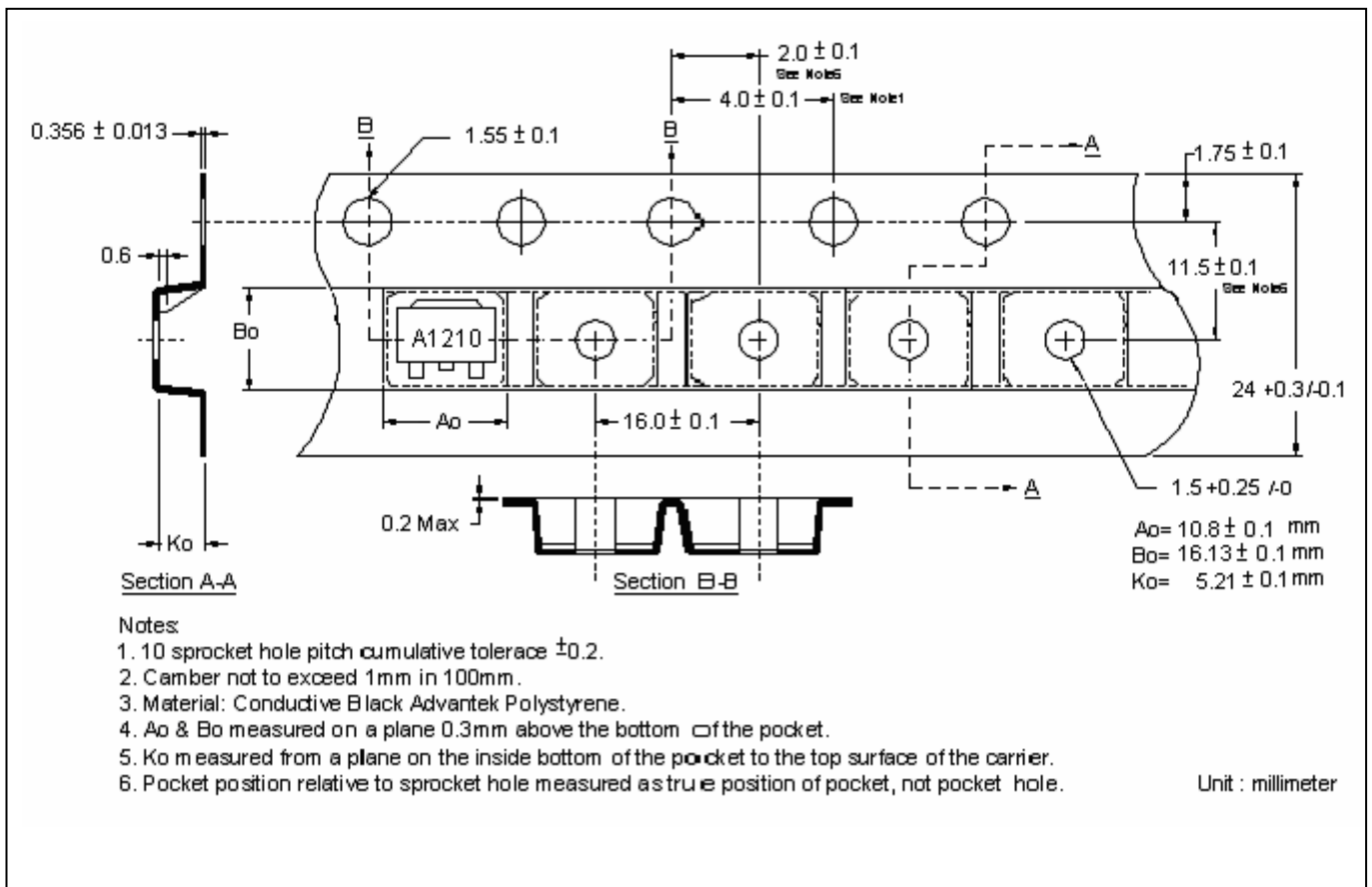
Power Derating Curve



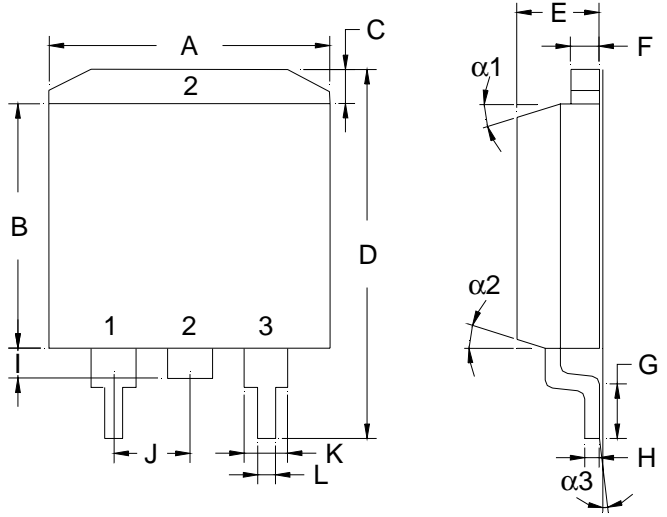
## Reel Dimension



## Carrier Tape Dimension



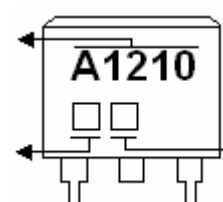
**TO-263 Dimension**



**Marking :**

Device Name

Year Code:  
5→2005, 6→2006, 7→2007, ..., etc



Month Code:  
1→Jan, 2→Feb, ..., 9→Sep, A→Oct, B→Nov, C→Dec

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

3-Lead Plastic Surface Mounted Package  
CYStek Package Code : F3

\*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.3800	0.4050	9.65	10.29	I	0.0500	0.0700	1.27	1.78
B	0.3300	0.3700	8.38	9.40	J	-	*0.1000	-	*2.54
C	-	0.0550	-	1.40	K	0.0450	0.0550	1.14	1.40
D	0.5750	0.6250	14.61	15.88	L	0.0200	0.0390	0.51	0.99
E	0.1600	0.1900	4.06	4.83	$\alpha 1$	-	-	6°	8°
F	0.0450	0.0550	1.14	1.40	$\alpha 2$	-	-	6°	8°
G	0.0900	0.1100	2.29	2.79	$\alpha 3$	-	-	0°	5°
H	0.0180	0.0290	0.46	0.74					

**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

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