

PNP Epitaxial Planar Transistor

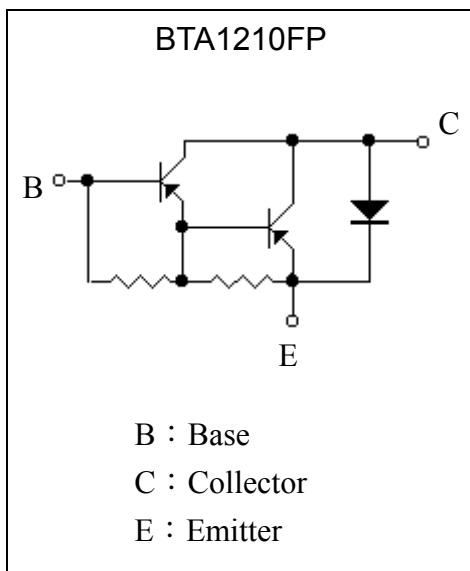
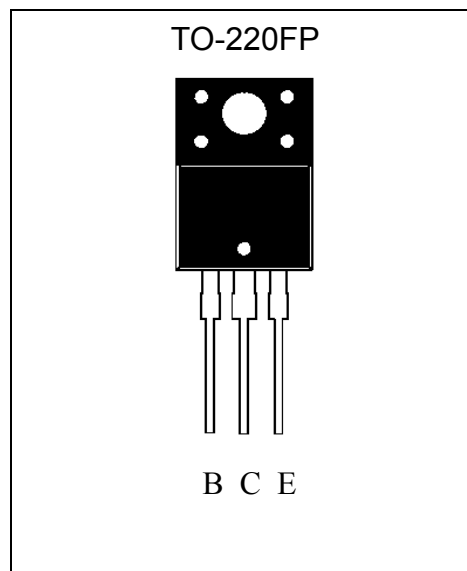
BTA1210FP

Description

The BTA1210FP 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
- Pb-free package

Equivalent Circuit**Outline**



Absolute Maximum Ratings (Ta=25°C)

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

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

Characteristics (Ta=25°C)

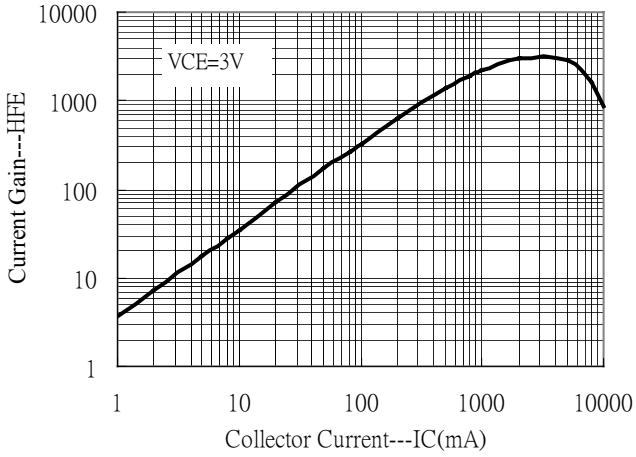
| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-------------------------|------|------|------|------|---|
| BV _{CE0} | -120 | - | - | V | I _C =-1mA, I _B =0 |
| BV _{CB0} | -120 | - | - | V | I _C =-100μA, I _E =0 |
| BV _{EBO} | -5 | - | - | V | I _E =-1mA, I _C =0 |
| I _{CB0} | - | - | -200 | μA | V _{CB} =-120V, I _E =0 |
| I _{CE0} | - | - | -200 | μA | V _{CE} =-120V, I _B =0 |
| I _{EBO} | - | - | -2 | mA | V _{EB} =-5V, I _C =0 |
| *V _{CE(sat) 1} | - | - | -2 | V | I _C =-4A, I _B =-16mA |
| *V _{CE(sat) 2} | - | - | -4 | V | I _C =-8A, I _B =-80mA |
| *V _{BE(sat)} | - | - | -4.5 | V | I _C =-8A, I _B =-80mA |
| *V _{BE(on)} | | | -2.8 | V | V _{CE} =-4V, I _C =-4A |
| *h _{FE1} | 1 | - | 12 | K | V _{CE} =-4V, I _C =-4A |
| *h _{FE2} | 100 | - | - | - | V _{CE} =-4V, I _C =-8A |
| Cob | - | | 300 | pF | V _{CB} =-10V, I _E =0A, f=1MHz |

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

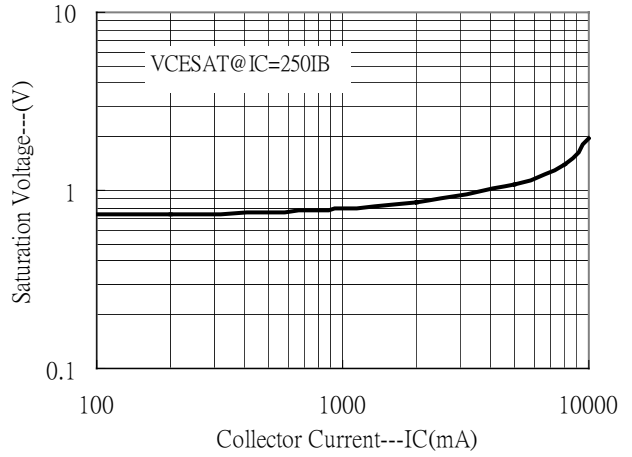


Characteristic Curves

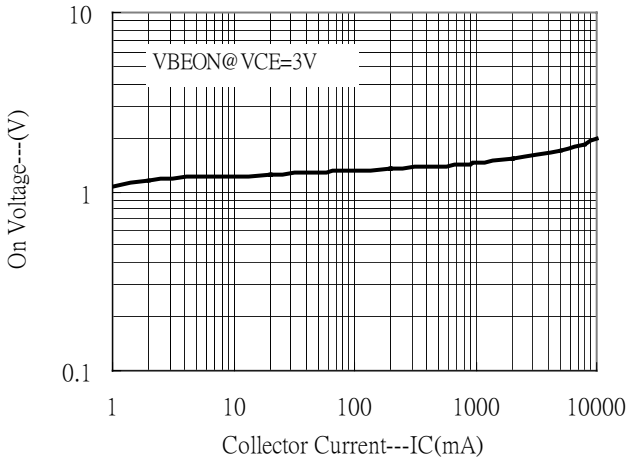
Current Gain vs Collector Current



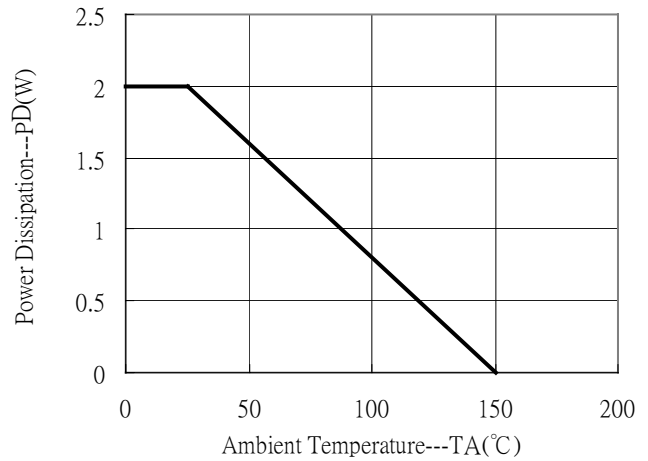
Saturation Voltage vs Collector Current



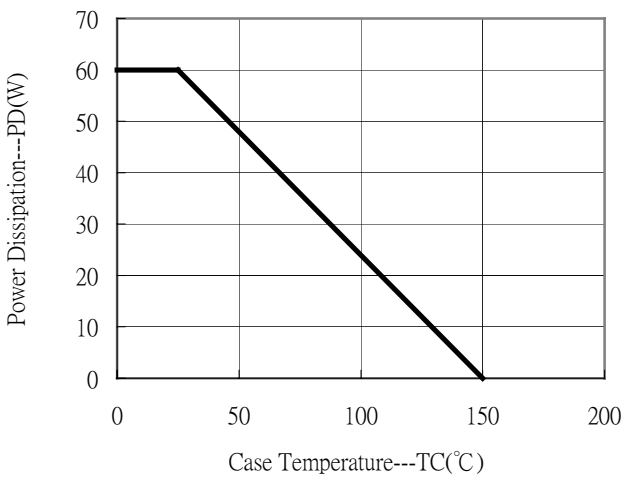
On voltage vs Collector Current



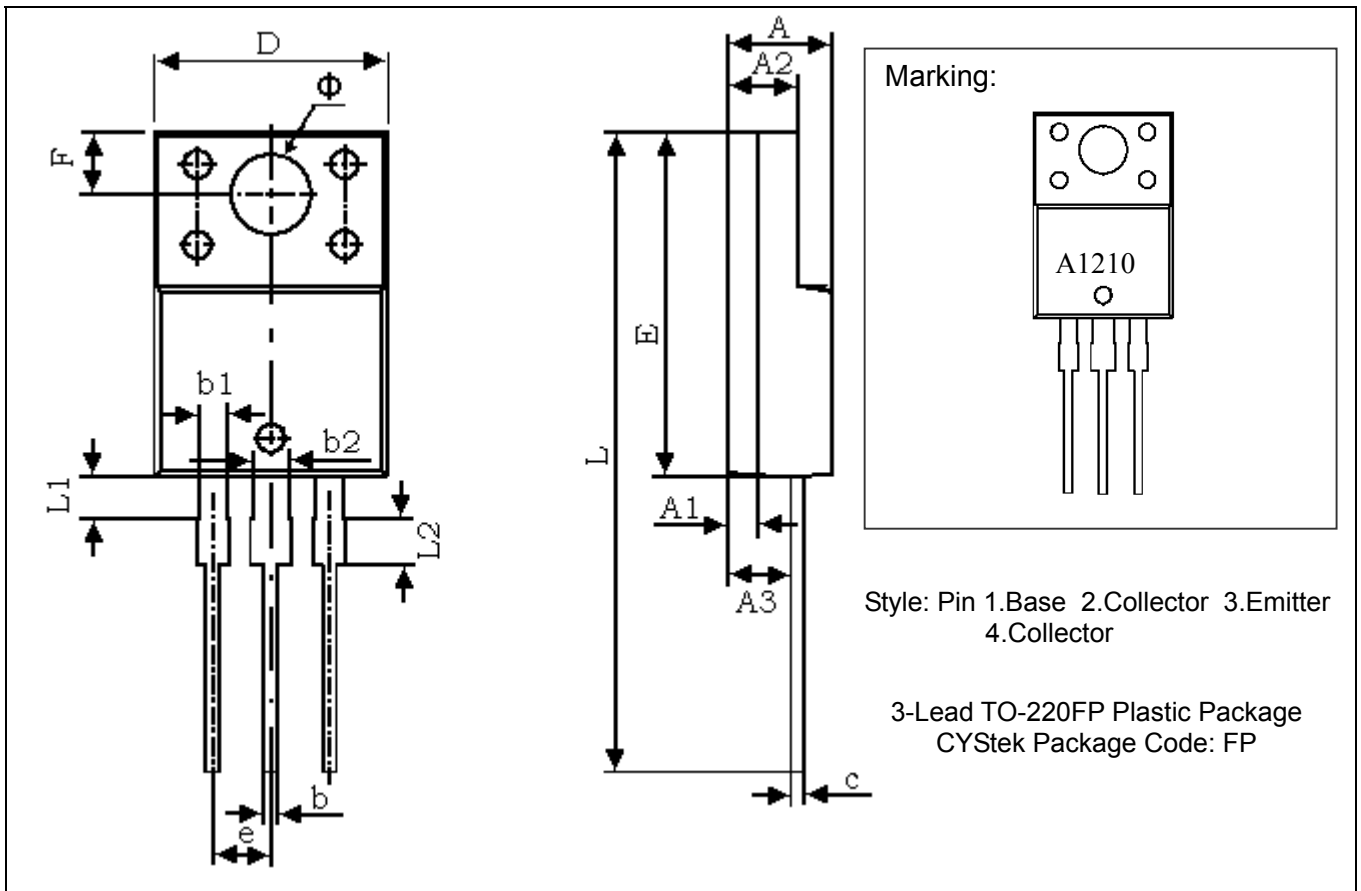
Power Derating Curve



Power Derating Curve



TO-220FP Dimension



*: Typical

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|-----------|-------|-------------|-------|-----|-----------|-------|-------------|--------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.169 | 0.185 | 4.300 | 4.700 | D | 0.392 | 0.408 | 9.960 | 10.360 |
| A1 | 0.051 REF | | 1.300 REF | | E | 0.583 | 0.598 | 14.800 | 15.200 |
| A2 | 0.110 | 0.126 | 2.800 | 3.200 | e | 0.100 TYP | | 2.540 TYP | |
| A3 | 0.098 | 0.114 | 2.500 | 2.900 | F | 0.106 REF | | 2.700 REF | |
| b | 0.020 | 0.030 | 0.500 | 0.750 | Φ | 0.138 REF | | 3.500 REF | |
| b1 | 0.043 | 0.053 | 1.100 | 1.350 | L | 1.102 | 1.118 | 28.000 | 28.400 |
| b2 | 0.059 | 0.069 | 1.500 | 1.750 | L1 | 0.067 | 0.075 | 1.700 | 1.900 |
| c | 0.020 | 0.030 | 0.500 | 0.750 | L2 | 0.075 | 0.083 | 1.900 | 2.100 |

- 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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