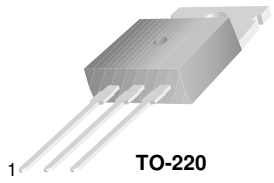
FAIRCHILD SEMICONDUCTOR®

December 2009

TIP42/TIP42A/TIP42B/TIP42C
PNP Epitaxial Silicon Transistor

Features

- Medium Power Linear Switching Applications
- Complement to TIP41/TIP41A/TIP41B/TIP41C



TO-220

1.Base 2.Collector 3.Emitter

Absolute Maximum Ratings T_A=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP42 : TIP42A : TIP42B : TIP42C	- 40 - 60 - 80 - 100	V V V V
V_{CEO}	Collector-Emitter Voltage : TIP42 : TIP42A : TIP42B : TIP42C	- 40 - 60 - 80 - 100	V V V V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 6	A
I_{CP}	Collector Current (Pulse)	-10	A
I_B	Base Current	-2	A
P_C	Collector Dissipation (T_C=25°C)	65	W
	Collector Dissipation (T_A=25°C)	2	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 to 150	°C

Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	* Collector-Emitter Sustaining Voltage : TIP42 : TIP42A : TIP42B : TIP42C	I_C = -30mA, I_B = 0	 -40 -60 -80 -100		 V V V V
I_{CEO}	Collector Cut-off Current : TIP42/42A : TIP42B/42C	 V_{CE} = -30V, I_B = 0 V_{CE} = -60V, I_B = 0		 -0.7 -0.7	 mA mA
I_{CES}	Collector Cut-off Current : TIP42 : TIP42A : TIP42B : TIP42C	 V_{CE} = -40V, V_{EB} = 0 V_{CE} = -60V, V_{EB} = 0 V_{CE} = -80V, V_{EB} = 0 V_{CE} = -100V, V_{EB} = 0		 -400 -400 -400 -400	 μA μA μA μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = -5V, I_C = 0		-1	mA
h_{FE}	* DC Current Gain	V_{CE} = -4V, I_C = -0.3A V_{CE} = -4V, I_C = -3A	30 15	 75	
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = -6A, I_B = -600mA		-1.5	V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	V_{CE} = -4V, I_C = -6A		-2.0	V
f_T	Current Gain Bandwidth Product	V_{CE} = -10V, I_C = -500mA, f = 1MHz	3.0		MHz

* Pulse Test: PW≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

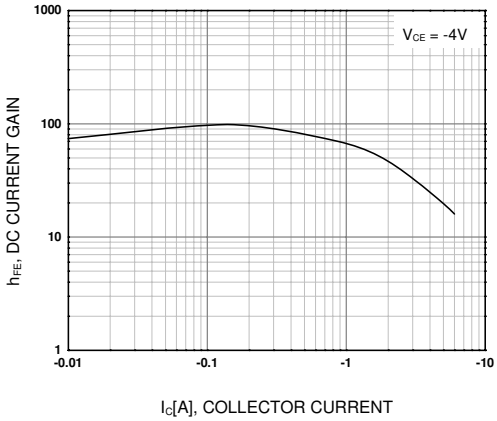


Figure 1. DC current Gain

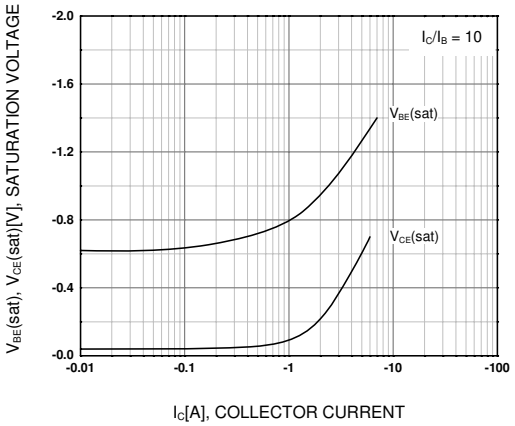


Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

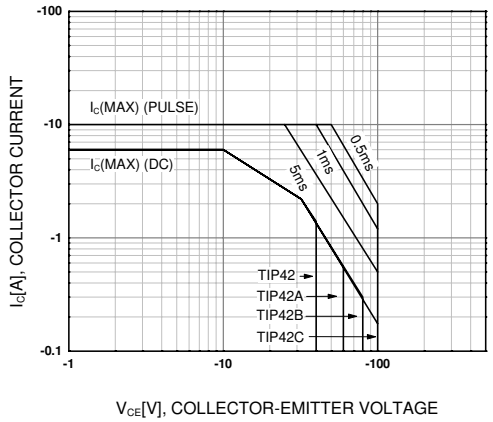


Figure 3. Safe Operating Area

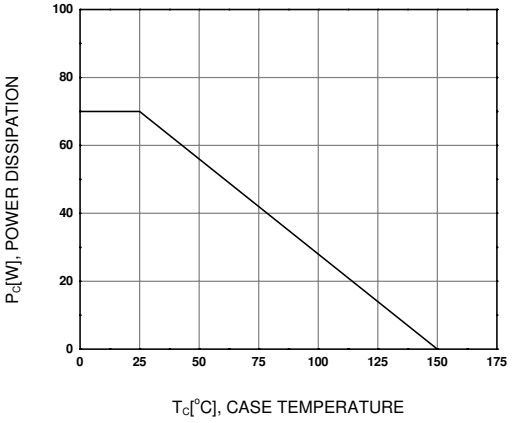
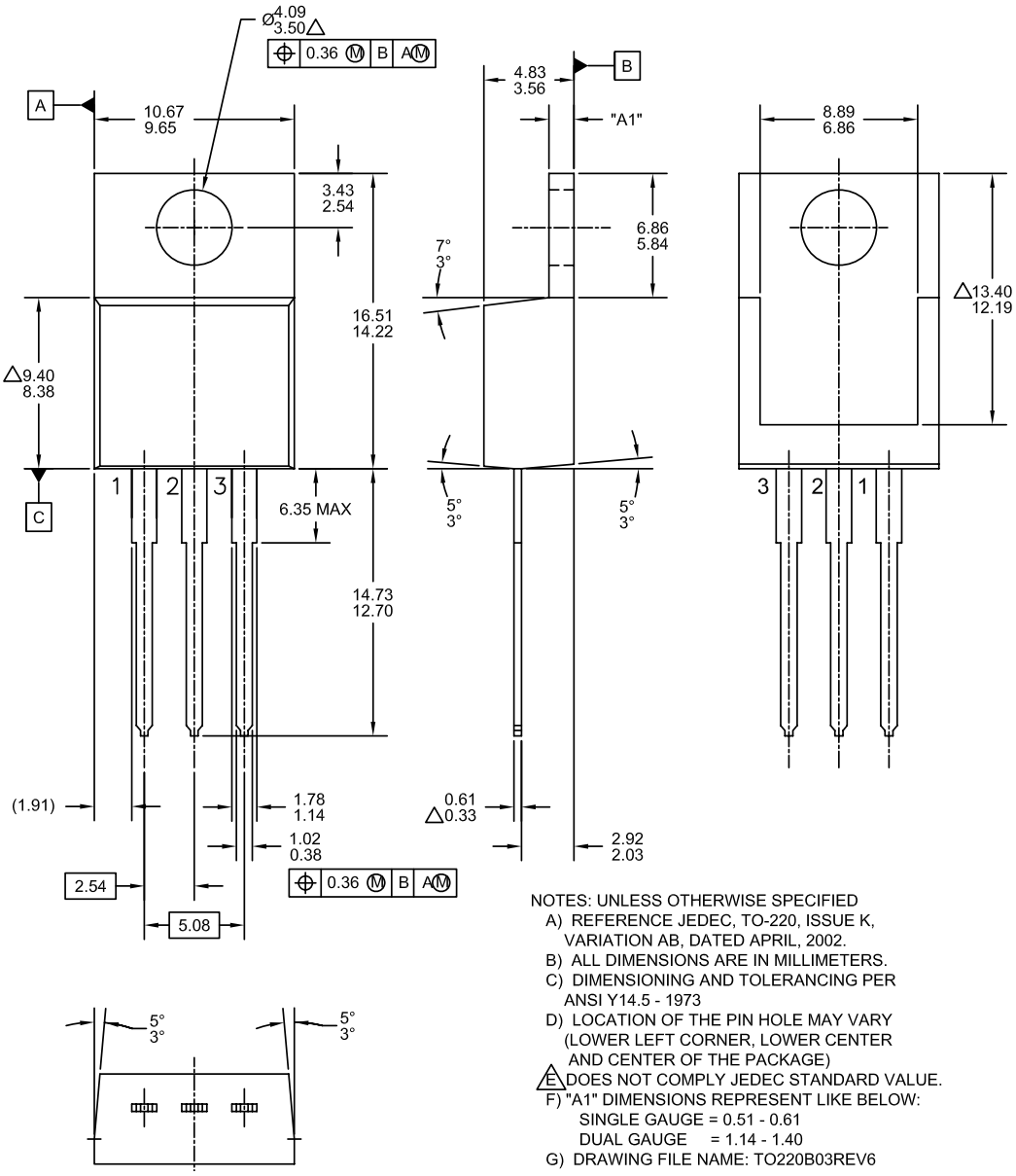


Figure 4. Power derating

Mechanical Dimensions

TO-220



NOTES: UNLESS OTHERWISE SPECIFIED

A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.

B) ALL DIMENSIONS ARE IN MILLIMETERS.

C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973

D) LOCATION OF THE PIN HOLE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)

△E DOES NOT COMPLY JEDEC STANDARD VALUE.

F) "A1" DIMENSIONS REPRESENT LIKE BELOW:
SINGLE GAUGE = 0.51 - 0.61
DUAL GAUGE = 1.14 - 1.40

G) DRAWING FILE NAME: TO220B03REV6

Dimensions in Millimeters

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