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October 2015

# **BC636 PNP Epitaxial Silicon Transistor**

### **Features**

- Switching and Amplifier Applications
- Complement to BC635



### **Ordering Information**

Part Number	Top Mark	Top Mark Package	
BC636TA	BC636	TO-92 3L	Ammo

### **Absolute Maximum Ratings**

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^{\circ}\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit V	
V <sub>CER</sub>	Collector-Emitter Voltage at $R_{BE} = 1 \text{ K}\Omega$	-45		
V <sub>CES</sub>	Collector-Emitter Voltage	-45	V	
V <sub>CEO</sub>	Collector-Emitter Voltage	-45	V	
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V	
I <sub>C</sub>	Collector Current	-1	Α	
I <sub>CP</sub>	Peak Collector Current	-1.5	Α	
I <sub>B</sub> Base Current		-100	mA	
T <sub>J</sub>	Junction Temperature	150	°C	
T <sub>STG</sub>	Storage Temperature	-65 to 150	°C	

### Thermal Characteristics(1)

Values are at  $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Value	Unit
В	Power Dissipation	1	W
P <sub>D</sub>	Derate Above 25°C	8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	125	°C/W

### Note:

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

### **Electrical Characteristics**

Values are at  $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	$I_C = -10 \text{ mA}, I_B = 0$	-45			V
I <sub>CBO</sub>	Collector Cut-Off Current	$V_{CB} = -30 \text{ V}, I_{E} = 0$			-0.1	μΑ
I <sub>EBO</sub>	Emitter Cut-Off Current	$V_{EB} = -5 \text{ V}, I_{C} = 0$			-10	μΑ
h <sub>FE1</sub>		$V_{CE} = -2 \text{ V}, I_{C} = -5 \text{ mA}$	25			
h <sub>FE2</sub>	DC Current Gain	$V_{CE} = -2 \text{ V}, I_{C} = -150 \text{ mA}$	40	\	250	
h <sub>FE3</sub>		$V_{CE} = -2 \text{ V}, I_{C} = -500 \text{ mA}$	25			
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	$I_C = -500 \text{ mA}, I_B = -50 \text{ mA}$			-0.5	V
V <sub>BE</sub> (on)	Base-Emitter On Voltage	$V_{CE} = -2 \text{ V}, I_{C} = -500 \text{ mA}$			-1	V
f <sub>T</sub>	Current Gain Bandwidth Product	$V_{CE} = -5 \text{ V, } I_{C} = -10 \text{ mA,}$ f = 50 MHz		100		MHz

### **Typical Performance Characteristics**

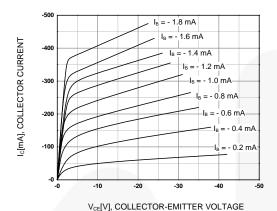


Figure 1. Static Characteristic

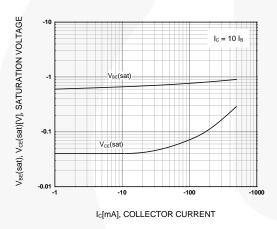


Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

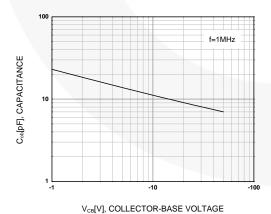


Figure 5. Collector Output Capacitance

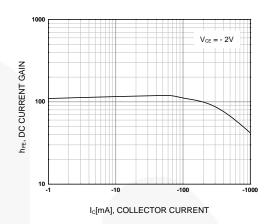


Figure 2. DC Current Gain

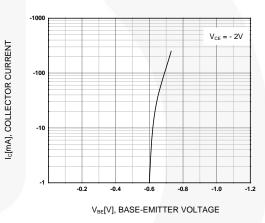
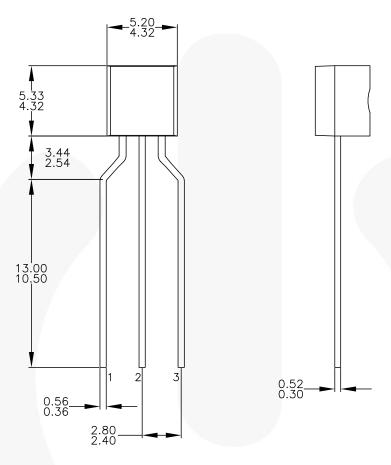
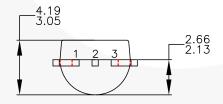


Figure 4. Base-Emitter On Voltage

### **Physical Dimensions**





NOTES: UNLESS OTHERWISE SPECIFIED

- DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC. ALL DIMENSIONS ARE IN MILLIMETERS. DRAWING CONFORMS TO ASME Y14.5M-2009. DRAWING FILENAME: MKT-ZAO3FREV3. FAIRCHILD SEMICONDUCTOR.

Figure 6. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo Type





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Definition of Terms				
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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.		
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