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November 2015

# **BC63916 NPN Epitaxial Silicon Transistor**

### **Features**

· Switching and Amplifier Applications



### **Ordering Information**

Part Number	Top Mark	Package	Packing Method
BC63916_D74Z	BC639-16	TO-92 3L	Ammo
BC63916_D27Z	BC639-16	TO-92 3L	Tape and Reel

### **Absolute Maximum Ratings**(1)

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 <sub>CER</sub>	Collector-Emitter Voltage at $R_{BE}$ = 1 $k\Omega$	100	V
V <sub>CES</sub>	Collector-Emitter Voltage	100	V
V <sub>CEO</sub>	Collector-Emitter Voltage	80	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	1	Α
T <sub>J</sub> , T <sub>STG</sub>	Operating and Storage Junction Temperature Range	-55 to 150	°C

### Note:

1. Pulse test: pulse width  $\leq$  300  $\mu$ s, duty cycle  $\leq$  2.0%.

### Thermal Characteristics(2)

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

Symbol	Parameter	Value	Unit
В	Power Dissipation	830	mW
$P_{D}$	Derate Above T <sub>A</sub> = 25°C	6.6	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	150	°C/W

### Note:

2. 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>CBO</sub>	Collector-Base Breakdown Voltage	$I_C = 100 \mu A, I_E = 0$	100			V
BV <sub>CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	80			V
BV <sub>EBO</sub>	Emitter-Base Breakdown Voltage	$I_E = 10 \mu A, I_C = 0$	5.0			V
I <sub>CBO</sub>	Collector Cut-Off Current	$V_{CB} = 30 \text{ V}, I_{E} = 0$			100	nA
I <sub>EBO</sub>	Emitter Cut-Off Current	$V_{EB} = 5 \text{ V}, I_{C} = 0$			10	μΑ
h <sub>FE</sub> 1		$V_{CE} = 2 \text{ V}, I_{C} = 5 \text{ mA}$	25			
h <sub>FE</sub> 2	DC Current Gain	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 150 mA	100		250	
h <sub>FE</sub> 3		V <sub>CE</sub> = 2 V, I <sub>C</sub> = 500 mA	25			
V <sub>CE</sub> (sat)	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA			0.5	V
V <sub>BE</sub> (on)	Base-Emitter On Voltage	V <sub>CE</sub> = 2 V, I <sub>C</sub> = 500 mA			1	V
f <sub>T</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 50 MHz		100		MHz

### **Typical Performance Characteristics**

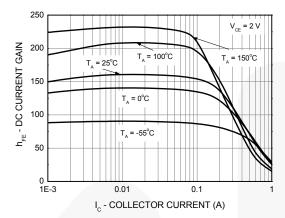


Figure 1. DC Current Gain

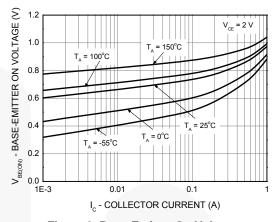


Figure 2. Base-Emitter On Voltage

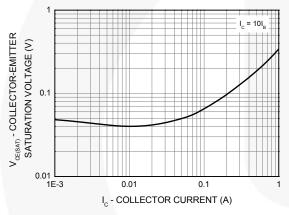


Figure 3. Collector-Emitter Saturation Voltage

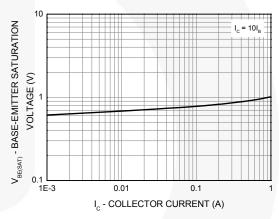
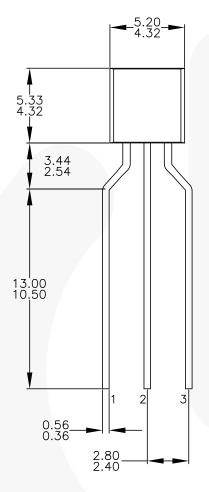
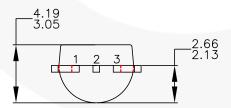


Figure 4. Base-Emitter Saturation Voltage

# **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-ZA03FREV3.
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Figure 5. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form





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Definition of Terms				
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