

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

BC140 SERIES  
BC141 SERIES

NPN SILICON TRANSISTOR

JEDEC TO-39 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR BC140 and BC141 series types are NPN Silicon Transistors designed for general purpose switching and amplifier applications.

## MAXIMUM RATINGS (T<sub>A</sub>=25°C)

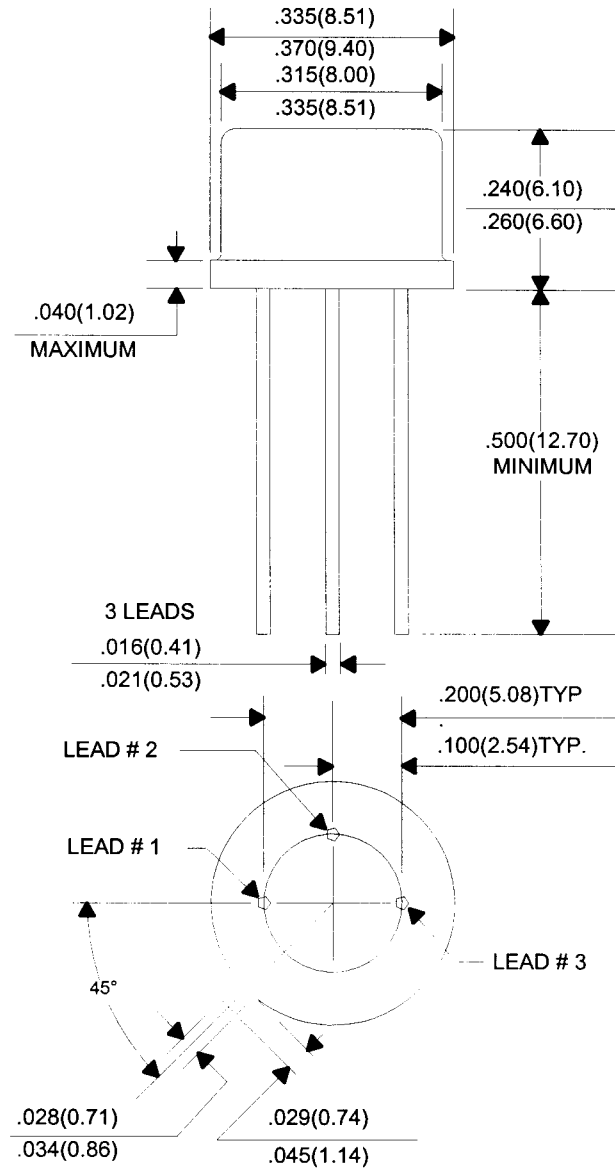
	SYMBOL	BC140	BC141	UNITS
Collector-Base Voltage	V <sub>CB0</sub>	80	100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	60	V
Emitter-Base Voltage	V <sub>EBO</sub>		7.0	V
Collector Current	I <sub>C</sub>		1.0	A
Collector Current (Peak)	I <sub>CM</sub>		1.5	A
Base Current (Peak)	I <sub>BM</sub>		200	mA
Power Dissipation	P <sub>D</sub>		0.8	W
Power Dissipation (T <sub>C</sub> =45°C)	P <sub>D</sub>		3.7	W
Operating and Storage				
Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200		°C
Thermal Resistance	θ <sub>JA</sub>	219		°C/W
Thermal Resistance	θ <sub>JC</sub>	42		°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>CBO</sub>	V <sub>CB</sub> =60V			100	nA
I <sub>CBO</sub>	V <sub>CB</sub> =60V, T <sub>A</sub> =150°C			100	μA
I <sub>EBO</sub>	V <sub>EB</sub> =5.0V			100	nA
V <sub>CE(SAT)</sub>	I <sub>C</sub> =1.0A, I <sub>B</sub> =100mA			1.0	V
V <sub>BE(ON)</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =1.0A			1.8	V
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =100μA (BC140-10, BC141-10)	50	100		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =100μA (BC140-16, BC141-16)	100	205		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =100mA (BC140-10, BC141-10)	63	110	160	
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =100mA (BC140-16, BC141-16)	100	195	250	
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =1.0A (BC140-10, BC141-10)	10	30		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =1.0A (BC140-16, BC141-16)	15	35		
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA, f=100MHz	50			MHz
C <sub>c</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1.0MHz			25	pF
C <sub>e</sub>	V <sub>EB</sub> =0.5V, I <sub>C</sub> =0, f=1.0MHz			80	pF
t <sub>on</sub>	I <sub>C</sub> =100mA, I <sub>B1</sub> =I <sub>B2</sub> =5.0mA			250	ns
t <sub>off</sub>	I <sub>C</sub> =100mA, I <sub>B1</sub> =I <sub>B2</sub> =5.0mA			850	ns

(See Reverse Side)

# JEDEC TO-39 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

Lead Code:

1. Emitter
2. Base
3. Collector

**Central**<sup>™</sup>  
**Semiconductor Corp.**

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

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