

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

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Manufacturers of World Class Discrete Semiconductors

BSV15, -10, -16  
BSV16, -10, -16  
BSV17, -10,

PNP SILICON TRANSISTORS

JEDEC TO-39 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR BSV15 series types are PNP Silicon Epitaxial Transistors designed for general purpose amplifier and switching applications.

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

|                                          | SYMBOL                            | BSV15 | BSV16       | BSV17 | UNITS |
|------------------------------------------|-----------------------------------|-------|-------------|-------|-------|
| Collector-Base Voltage                   | V <sub>CBO</sub>                  | 40    | 60          | 90    | V     |
| Collector-Emitter Voltage                | V <sub>CEO</sub>                  | 40    | 60          | 80    | V     |
| Emitter-Base Voltage                     | V <sub>EBO</sub>                  |       | 5.0         |       | V     |
| Collector Current                        | I <sub>C</sub>                    |       | 1.0         |       | A     |
| Collector Current (Peak)                 | I <sub>CM</sub>                   |       | 2.0         |       | A     |
| Base Current (Peak)                      | I <sub>BM</sub>                   |       | 200         |       | mA    |
| Power Dissipation (T <sub>C</sub> =25°C) | P <sub>D</sub>                    |       | 5.0         |       | W     |
| Power Dissipation                        | P <sub>D</sub>                    |       | 0.8         |       | W     |
| Operating and Storage                    |                                   |       |             |       |       |
| Junction Temperature                     | T <sub>J</sub> , T <sub>stg</sub> |       | -65 to +200 |       | °C    |
| Thermal Resistance                       | Θ <sub>JC</sub>                   |       | 35          |       | °C/W  |
| Thermal Resistance                       | Θ <sub>JA</sub>                   |       | 219         |       | °C/W  |

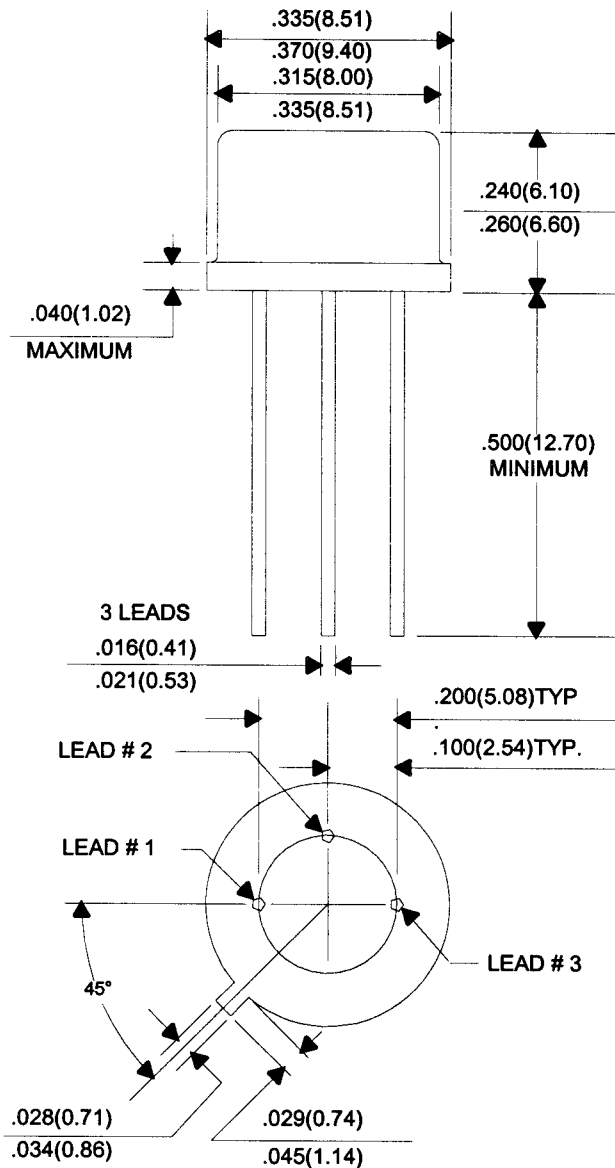
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

| SYMBOL               | TEST CONDITIONS                                                  | BSV15   |     | BSV16   |     | BSV17   |     | UNITS |
|----------------------|------------------------------------------------------------------|---------|-----|---------|-----|---------|-----|-------|
|                      |                                                                  | MIN     | MAX | MIN     | MAX | MIN     | MAX |       |
| I <sub>CBO</sub>     | V <sub>CB</sub> =Rated V <sub>CEO</sub>                          |         | 100 |         | 100 |         | 100 | nA    |
| I <sub>CBO</sub>     | V <sub>CB</sub> = Rated V <sub>CEO</sub> , T <sub>A</sub> =150°C |         | 50  |         | 50  |         | 50  | μA    |
| I <sub>EBO</sub>     | V <sub>EB</sub> =4.0V                                            |         | 50  |         | 50  |         | 50  | nA    |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =500mA, I <sub>B</sub> =25mA                      |         | 1.0 |         | 1.0 |         | 1.0 | V     |
| V <sub>BE(ON)</sub>  | V <sub>CE</sub> =1.0V, I <sub>C</sub> =100mA                     |         | 1.0 |         | 1.0 |         | 1.0 | V     |
| V <sub>BE(ON)</sub>  | V <sub>CE</sub> =1.0V, I <sub>C</sub> =500mA                     | 0.7     | 1.4 | 0.7     | 1.4 | 0.7     | 1.4 | V     |
| f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =50mA, f=100MHz             | 50      |     | 50      |     | 50      |     | MHz   |
| C <sub>c</sub>       | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1.0MHz                |         | 30  |         | 30  |         | 25  | pF    |
| C <sub>e</sub>       | V <sub>EB</sub> =0.5V, I <sub>C</sub> =0, f=1.0MHz               | 180 TYP |     | 180 TYP |     | 180 TYP |     | pF    |
| t <sub>on</sub>      | I <sub>C</sub> =100mA, I <sub>B1</sub> =I <sub>B2</sub> =5.0mA   |         | 500 |         | 500 |         | 500 | ns    |
| t <sub>off</sub>     | I <sub>C</sub> =100mA, I <sub>B1</sub> =I <sub>B2</sub> =5.0mA   |         | 650 |         | 650 |         | 650 | ns    |

| SYMBOL          | TEST CONDITIONS                              | BSV15-10<br>BSV16-10<br>BSV17-10 |     | BSV15-16<br>BSV16-16 |     | UNITS |
|-----------------|----------------------------------------------|----------------------------------|-----|----------------------|-----|-------|
|                 |                                              | MIN                              | MAX | MIN                  | MAX |       |
| h <sub>FE</sub> | V <sub>CE</sub> =1.0V, I <sub>C</sub> =100μA | 20                               |     | 30                   |     |       |
| h <sub>FE</sub> | V <sub>CE</sub> =1.0V, I <sub>C</sub> =100mA | 63                               | 160 | 100                  | 250 |       |
| h <sub>FE</sub> | V <sub>CE</sub> =1.0V, I <sub>C</sub> =500mA | 25                               |     | 35                   |     |       |

(See Reverse Side)

## JEDEC TO-39 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

Lead Code:

1. Emitter
2. Base
3. Collector

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