

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

145 Adams Avenue, Hauppauge, NY 11788 USA  
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N3439

2N3440

Silicon NPN Transistor

JEDEC TO39 Case

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3439 and 2N3440 are Silicon NPN Transistors designed for consumer and industrial line-operated applications.

## MAXIMUM RATINGS ( $T_A = 25^\circ \text{C}$ )

|                           |           | <u>2N3439</u> | <u>2N3440</u> | <u>Unit</u>      |
|---------------------------|-----------|---------------|---------------|------------------|
| Collector-Base Voltage    | $V_{CBO}$ | 450           | 300           | V                |
| Collector-Emitter Voltage | $V_{CEO}$ | 350           | 250           | V                |
| Emitter-Base Voltage      | $V_{EBO}$ | 7.0           | 7.0           | V                |
| Collector Current         | $I_C$     | 1.0           | 1.0           | A                |
| Base Current              | $I_B$     | 0.5           | 0.5           | A                |
| Power Dissipation         | $P_T$     | 1.0           | 1.0           | W                |
| Operating Temperature     | $T_J$     | -65 to 200    |               | $^\circ\text{C}$ |
| Storage Temperature       | $T_{stg}$ | -65 to 200    |               | $^\circ\text{C}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ \text{C}$ )

| <u>Symbol</u> |                                                                 | <u>Test Conditions</u> | <u>Min.</u> | <u>Max</u> | <u>Unit</u>   |
|---------------|-----------------------------------------------------------------|------------------------|-------------|------------|---------------|
| $I_{CBO}$     | $V_{CB} = 360\text{V}$                                          | 2N3439                 |             | 20         | $\mu\text{A}$ |
| $I_{CBO}$     | $V_{CB} = 250\text{V}$                                          | 2N3440                 |             | 20         | $\mu\text{A}$ |
| $I_{CEO}$     | $V_{CE} = 300\text{V}$                                          | 2N3439                 |             | 20         | $\mu\text{A}$ |
| $I_{CEO}$     | $V_{CE} = 200\text{V}$                                          | 2N3440                 |             | 50         | $\mu\text{A}$ |
| $I_{EBO}$     | $V_{EBO} = 6$                                                   | Both                   |             | 20         | $\mu\text{A}$ |
| $V_{CEO}$     | $I_C = 50\text{mA}$                                             | 2N3439                 | 350         |            | V             |
| $V_{CEO}$     | $I_C = 50\text{mA}$                                             | 2N3440                 | 250         |            | V             |
| $V_{CE(s)}$   | $I_C = 50\text{mA}$ , $I_B = 4\text{mA}$                        | Both                   |             | 0.5        | V             |
| $V_{BE(s)}$   | $I_C = 50\text{mA}$ , $I_B = 4\text{mA}$                        | Both                   |             | 1.3        | V             |
| $h_{FE}$      | $V_{CE} = 10\text{V}$ , $2\text{mA}$                            | 2N3439                 | 30          |            | -             |
| $h_{FE}$      | $V_{CE} = 10\text{V}$ , $20\text{mA}$                           | Both                   | 40          | 160        | -             |
| $f_t$         | $V_{CE} = 10\text{V}$ , $I_C = 10\text{mA}$ , $f = 5\text{MHZ}$ | Both                   | 15          |            | MHZ           |
| $C_{ob}$      | $V_{CB} = 10\text{V}$ , $f = 1\text{MHZ}$                       | Both                   |             | 10         | pf            |
| $C_{ib}$      | $V_{EB} = 5\text{V}$ , $f = 1\text{MHZ}$                        | Both                   |             | 75         | pf            |

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Datasheets for electronics components.