

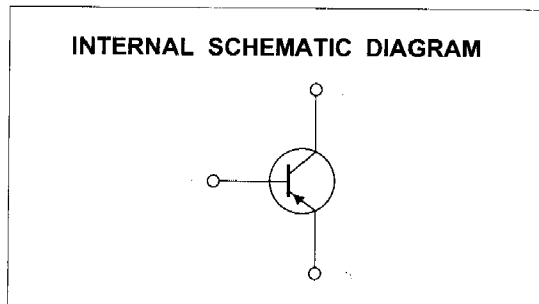
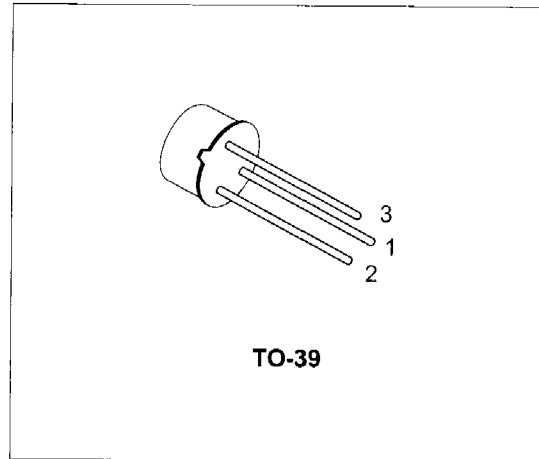
2N5415
2N5416

SILICON PNP TRANSISTORS

DESCRIPTION

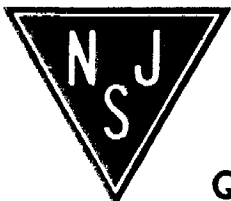
The 2N5415, 2N5416 are high voltage silicon epitaxial planar PNP transistors in Jedec TO-39 metal case designed for use in consumer and industrial line-operated applications.

These devices are particularly suited as drivers in high-voltage low current inverters, switching and series regulators.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | | Unit |
|------------------|--|------------|--------|------|
| | | 2N5415 | 2N5416 | |
| V _{CB0} | Collector-Base Voltage (I _E = 0) | -200 | -350 | V |
| V _{CE0} | Collector-Emitter Voltage (I _B = 0) | -200 | -300 | V |
| V _{EB0} | Emitter-Base Voltage (I _C = 0) | -4 | -6 | V |
| I _C | Collector Current | -1 | | A |
| I _B | Base Current | -0.5 | | A |
| P _{tot} | Total Dissipation at T _c ≤ 25 °C | 10 | | W |
| P _{tot} | Total Dissipation at T _{amb} ≤ 50 °C | 1 | | W |
| T _{stg} | Storage Temperature | -65 to 200 | | °C |
| T _j | Max. Operating Junction Temperature | 200 | | °C |



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

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THERMAL DATA

| | | | | |
|----------------|-------------------------------------|-----|------|---------------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 17.5 | $^{\circ}C/W$ |
| $R_{thj-amb}$ | Thermal Resistance Junction-ambient | Max | 175 | $^{\circ}C/W$ |

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------|---|--|--------------|------|------------|--------------------|
| I_{CBO} | Collector Cut-off Current ($I_E = 0$) | for 2N5415 $V_{CB} = -175 V$ for 2N5416 $V_{CB} = -280 V$ | | | -50 -50 | μA μA |
| I_{CEO} | Collector Cut-off Current ($I_B = 0$) | $V_{CE} = -150 V$ | | | -50 | μA |
| I_{EBO} | Emitter Cut-off Current ($I_C = 0$) | for 2N5415 $V_{EB} = -4 V$ for 2N5416 $V_{EB} = -6 V$ | | | -20 -20 | μA μA |
| V_{CER}^* | Collector-Emitter Sustaining Voltage | $I_C = -50 mA$ $R_{BE} = 50\Omega$ for 2N5416 | -350 | | | V |
| $V_{CEO(sus)}^*$ | Collector-Emitter Sustaining Voltage | $I_C = -10 mA$ for 2N5415 for 2N5416 | -200 -300 | | | V V |
| $V_{CE(sat)}^*$ | Collector-Emitter Saturation Voltage | $I_C = -50 mA$ $I_B = -5 mA$ | | | -2.5 | V |
| V_{BE}^* | Base-Emitter Voltage | $I_C = -50 mA$ $V_{CE} = -10 V$ | | | -1.5 | V |
| h_{FE}^* | DC Current Gain | $I_C = -50 mA$ $V_{CE} = -10 V$ for 2N5415 for 2N5416 | 30 30 | | 150 120 | |
| h_{fe} | Small Signal Current Gain | $I_C = -5 mA$ $V_{CE} = -10 V$ $f = 1KHz$ | 25 | | | |
| f_T | Transition frequency | $I_C = -10 mA$ $V_{CE} = -10 V$ $f = 5MHz$ | 15 | | | MHz |
| C_{CBO} | Collector Base Capacitance | $I_E = 0$ $V_{CB} = -10 V$ $f = 1MHz$ | | | 25 | pF |

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %

| DIM. | mm | | | inch | | |
|------|------------|------|------|-------|------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 12.7 | | | 0.500 | | |
| B | | | 0.49 | | | 0.019 |
| D | | | 6.6 | | | 0.260 |
| E | | | 8.5 | | | 0.334 |
| F | | | 9.4 | | | 0.370 |
| G | 5.08 | | | 0.200 | | |
| H | | | 1.2 | | | 0.047 |
| I | | | 0.9 | | | 0.035 |
| L | 45° (typ.) | | | | | |

