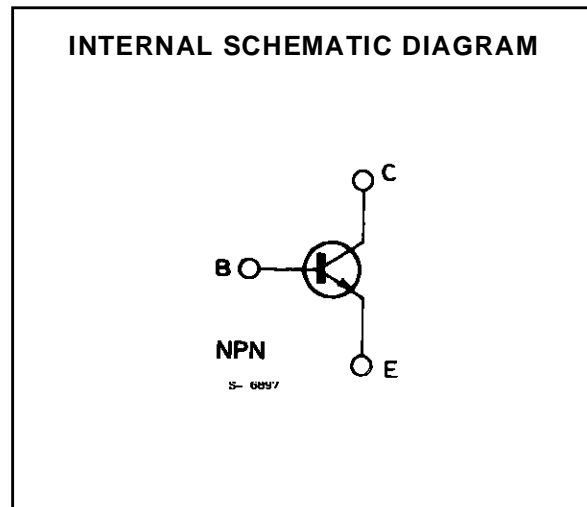
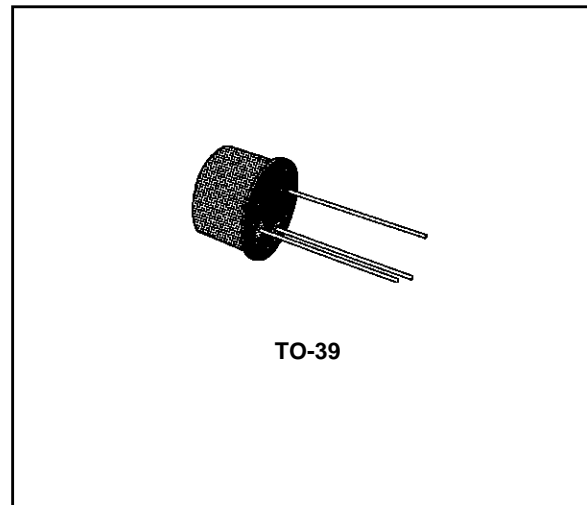


HIGH VOLTAGE AMPLIFIER

DESCRIPTION

The 2N3114 is a silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. It is primarily intended for high voltage, medium power applications.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|----------------|---|-----------|------------------|
| V_{CBO} | Collector-base Voltage ($I_E = 0$) | 150 | V |
| V_{CEO} | Collector-emitter Voltage ($I_B = 0$) | 150 | V |
| V_{EBO} | Emitter-base Voltage ($I_C = 0$) | 5 | V |
| I_C | Collector Current | 150 | mA |
| P_{tot} | Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_{case} \leq 25\text{ }^\circ\text{C}$ | 0.8 | W |
| | | 5 | W |
| T_{stg}, T_j | Storage and Junction Temperature | 65 to 200 | $^\circ\text{C}$ |

THERMAL DATA

| | | | | |
|------------------|-------------------------------------|-----|-----|---------------|
| $R_{th\ j-case}$ | Thermal Resistance Junction-case | Max | 35 | $^{\circ}C/W$ |
| $R_{th\ j-amb}$ | Thermal Resistance Junction-ambient | Max | 219 | $^{\circ}C/W$ |

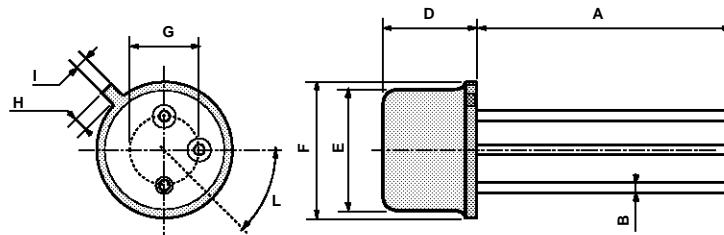
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|---|---|----------------|----------------|----------|---------------|
| I_{CBO} | Collector Cutoff Current ($I_E = 0$) | $V_{CB} = 100\ V$ $V_{CB} = 100\ V$ $T_{amb} = 150^{\circ}C$ | | | 10 10 | nA μA |
| I_{EBO} | Emitter Cutoff Current ($I_C = 0$) | $V_{EB} = 4\ V$ | | | 100 | nA |
| $V_{(BR)CBO}$ | Collector-base Breakdown Voltage ($I_E = 0$) | $I_C = 100\ \mu A$ | 150 | | | V |
| $V_{(BR)CEO}^*$ | Collector-emitter Breakdown Voltage ($I_B = 0$) | $I_C = 10\ mA$ | 150 | | | V |
| $V_{(BR)EBO}$ | Emitter-base Breakdown Voltage ($I_C = 0$) | $I_E = 100\ \mu A$ | 5 | | | V |
| $V_{CE(sat)}^*$ | Collector-emitter Saturation Voltage | $I_C = 50\ mA$ $I_B = 5\ mA$ | | | 1 | V |
| $V_{BE(sat)}^*$ | Base-emitter Saturation Voltage | $I_C = 50\ mA$ $I_B = 5\ mA$ | | | 0.9 | V |
| h_{FE}^* | DC Current Gain | $I_C = 100\ \mu A$ $V_{CE} = 10\ V$ $I_C = 30\ mA$ $V_{CE} = 10\ V$ $T_{amb} = -55^{\circ}C$ $I_C = 30\ mA$ $V_{CE} = 10\ V$ | 15 30 12 | 35 60 24 | 120 | |
| h_{fe} | High Frequency Current Gain | $I_C = 30\ mA$ $V_{CE} = 10\ V$ $f = 20\ MHz$ | 2 | | | |
| C_{EBO} | Emitter-base Capacitance | $V_{EB} = 0.5\ V$ $f = 1\ MHz$ | | | 80 | pF |
| C_{CBO} | Collector-base Capacitance | $V_{CB} = 20\ V$ $f = 1\ MHz$ | | | 9 | pF |

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

TO39 MECHANICAL DATA

| 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.) | | | | | |



P008B

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