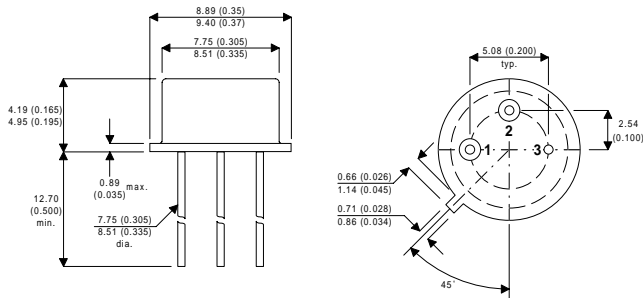


MECHANICAL DATA

Dimensions in mm (inches)

**HIGH SPEED
MEDIUM VOLTAGE
SWITCHES**



TO-39

Pin 1 – Emitter Pin 2 – Base Pin 3 – Collector

DESCRIPTION

The 2N4036 is a silicon epitaxial planar PNP transistors in jedec TO-39 metal case intended for use in switching applications.

ABSOLUTE MAXIMUM RATINGS

$T_{CASE} = 25^{\circ}C$ unless otherwise stated

| | | 2N4036 |
|-----------|---|-----------------------------|
| V_{CBO} | Collector – Base Voltage ($I_E = 0$) | -90V |
| V_{CEX} | Collector – Emitter Voltage ($V_{BE} = 1.5V$) | -85V |
| V_{EBO} | Emitter – Base Voltage ($I_C = 0$) | -6V |
| I_C | Continuous Collector Current | -1A |
| I_B | Base Current | 0.5 |
| P_{tot} | Total Dissipation at | $T_{amb} \leq 25^{\circ}C$ |
| | | $T_{case} \leq 25^{\circ}C$ |
| T_{stg} | Operating and Storage Temperature Range | -65 to +200°C |
| T_j | Junction temperature | 200°C |

THERMAL DATA

| | | | | |
|----------------|-------------------------------------|-----|-----|------|
| $R_{thj-case}$ | Thermal Resistance Junction-case | Max | 25 | °C/W |
| $R_{thj-amb}$ | Thermal Resistance Junction-ambient | Max | 175 | °C/W |

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

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------|---|----------------|------|-------|---------|
| I_{CBO} | Collector Cut Off Current $V_{CB} = -60V$ $I_E = 0$ | | | -20 | nA |
| I_{CEO} | Collector Cut Off Current $V_{CE} = -30V$ $I_B = 0$ | | | -0.5 | μA |
| I_{EBO} | Emitter Cut Off Current $V_{EB} = -5V$ $I_C = 0$ | | | -20 | nA |
| $V_{CE(sat)}$ | Collector Emitter Saturation Voltage $I_C = -150mA$ $I_B = -15mA$ | | | -0.65 | V |
| V_{BE} | Base Emitter Saturation Voltage $I_C = -150mA$ $V_{CE} = -10V$ | | | -1.1 | V |
| $V_{(BR)CBO}$ | Collector Base Breakdown Voltage $I_C = -100\mu A$ $I_E = 0$ | -90 | | | V |
| $V_{(BR)CEX}$ | Collector Emitter Breakdown Voltage $I_C = -10mA$ $V_{BE} = 1.5V$ | -85 | | | V |
| $V_{(BR)CER}$ | Collector Emitter Breakdown Voltage $I_C = -10mA$ $R_{BE} = 200\Omega$ | -85 | | | V |
| $V_{(BR)CEO}$ | Collector Emitter Breakdown Voltage $I_C = -10mA$ $I_B = 0$ | -65 | | | V |
| $V_{(BR)EBO}$ | Emitter Base Breakdown Voltage $I_C = 0$ $I_E = -100\mu A$ | -7 | | | |
| h_{FE} | DC Current Gain $I_C = -0.1mA$ $V_{CE} = -10V$ $I_C = -150mA$ $V_{CE} = -10V$ $I_C = -500mA$ $V_{CE} = -10V$ | 20 40 20 | | 140 | |
| f_T | Transistion Frequency $I_C = -50mA$ $V_{CE} = -10v$ $f = 20MHz$ | 60 | | | MHz |
| C_{EBO} | Emitter Base Capacitance $I_E = 0$ $V_{CB} = -0.5V$ $f = 1MHz$ | | | 90 | pF |
| C_{CBO} | Collector Base Capacitance $I_E = 0$ $V_{CB} = -10V$ $f = 1MHz$ | | | 30 | pF |
| t_{on} | Turn On Time $I_C = -150mA$ $V_{CC} = -30V$ $I_{B1} = -15mA$ | | | 110 | ns |
| t_{off} | Turn Off Time $I_C = -150mA$ $V_{CC} = -30V$ $I_{B1} = -I_{B2} = 15mA$ | | | 700 | ns |

* Pulse test $t_p = 300\mu s$, $\delta = 1\%$