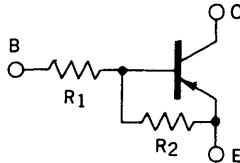


DESCRIPTION The BN1A4P is designed for use in medium speed switching circuit.

FEATURE • Bias resistors built-in type PNP transistor equivalent circuit.



$R_1 = 10\text{ k}\Omega$

$R_2 = 47\text{ k}\Omega$

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

Storage Temperature -55 to $+150\text{ }^\circ\text{C}$

Junction Temperature $150\text{ }^\circ\text{C}$ Maximum

Maximum Power Dissipation ($T_a = 25\text{ }^\circ\text{C}$)

Total Power Dissipation 250 mW

Maximum Voltages and Currents ($T_a = 25\text{ }^\circ\text{C}$)

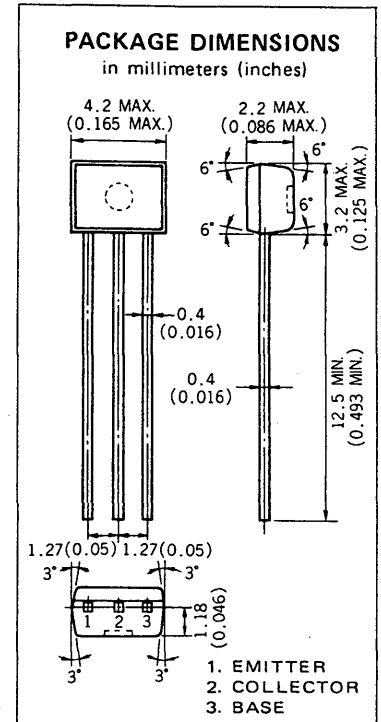
V_{CBO} Collector to Base Voltage -60 V

V_{CEO} Collector to Emitter Voltage -50 V

V_{EBO} Emitter to Base Voltage -5.0 V

$I_{C(DC)}$ Collector Current (DC) -100 mA

$I_{C(pulse)}$ Collector Current (pulse) -200 mA



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

| SYMBOL | CHARACTERISTIC | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|---------------|------------------------------|------|-------|------|------------------|---|
| R_1 | Input Resistance | 7.0 | 10.0 | 13.0 | $\text{k}\Omega$ | |
| R_2 | Input Resistance | 32.9 | 47.0 | 61.1 | $\text{k}\Omega$ | |
| V_{IL} | Low Level Input Voltage | | -0.68 | -0.5 | V | $V_{CE} = -5.0\text{ V}, I_C = -100\text{ }\mu\text{A}$ |
| V_{IH} | Hi Level Input Voltage | -3.0 | -1.0 | | V | $V_{CE} = -0.2\text{ V}, I_C = -5.0\text{ mA}$ |
| t_{on} | Turn On Time | | 0.08 | 0.2 | μs | $V_{CC} = -5.0\text{ V}, R_L = 1.0\text{ k}\Omega,$ $V_{in} = -5.0\text{ V},$ $PW = 2\text{ }\mu\text{s}, \text{Duty Cycle} \leq 2\%$ |
| t_{stg} | Storage Time | | 1.5 | 5.0 | μs | |
| t_{off} | Turn Off Time | | 1.8 | 6.0 | μs | |
| h_{FE1} | DC Current Gain | 85 | 140 | 340 | - | $V_{CE} = -5.0\text{ V}, I_C = -5.0\text{ mA}$ |
| h_{FE2} | DC Current Gain | 95 | 190 | | - | $V_{CE} = -5.0\text{ V}, I_C = -50\text{ mA}$ |
| $V_{CE(sat)}$ | Collector Saturation Voltage | | -0.04 | -0.2 | V | $I_C = -5.0\text{ mA}, I_B = -0.25\text{ mA}$ |
| I_{CBO} | Collector Cutoff Current | | | -0.1 | μA | $V_{CB} = -50\text{ V}, I_E = 0$ |

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

