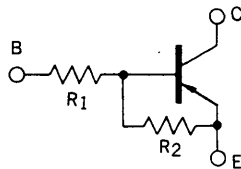


DESCRIPTION The BN1F4M is designed for use in medium speed switching circuit.

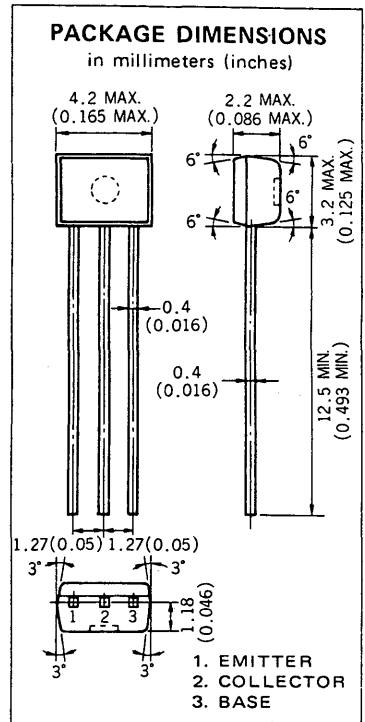
FEATURE • Bias resistors built-in type PNP transistor equivalent circuit.



$R_1 = 22 \text{ k}\Omega$
 $R_2 = 22 \text{ k}\Omega$

ABSOLUTE MAXIMUM RATINGS

| | |
|---|----------------|
| Maximum Temperatures | |
| Storage Temperature | -55 to +150 °C |
| Junction Temperature | 150 °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 | -10 V |
| $I_C(\text{DC})$ Collector Current (DC) | -100 mA |
| $I_C(\text{pulse})$ 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 | 15.4 | 22.0 | 28.6 | $\text{k}\Omega$ | |
| R_1/R_2 | Resistors Ratio | 0.9 | 1.0 | 1.1 | - | |
| V_{IL} | Low Level Input Voltage | | -1.17 | -0.8 | V | $V_{CE} = -5.0 \text{ V}, I_C = -100 \text{ }\mu\text{A}$ |
| V_{IH} | Hi Level Input Voltage | -4.0 | -2.0 | | V | $V_{CE} = -0.2 \text{ V}, I_C = -5.0 \text{ mA}$ |
| t_{on} | Turn on Time | | 0.23 | 0.5 | 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 | | 0.8 | 3.0 | μs | |
| t_{off} | Turn off Time | | 1.1 | 3.5 | μs | |
| h_{FE1} | DC Current Gain | 60 | 85 | 195 | - | $V_{CE} = -5.0 \text{ V}, I_C = -5.0 \text{ mA}$ |
| h_{FE2} | DC Current Gain | 90 | 145 | | - | $V_{CE} = -5.0 \text{ V}, I_C = -50 \text{ mA}$ |
| $V_{CE(\text{sat})}$ | Collector Saturation Voltage | | -0.05 | -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 ($T_a = 25^\circ\text{C}$)

