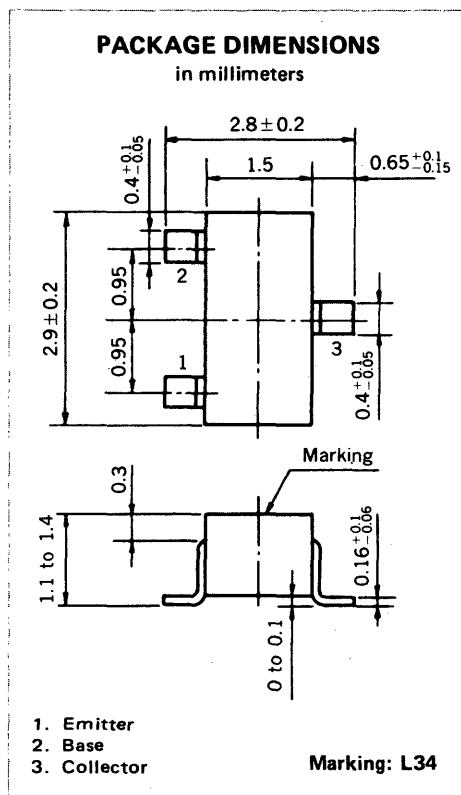
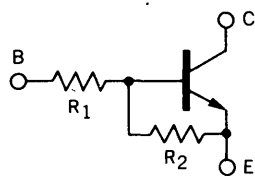


**MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE NPN TRANSISTOR
MINI MOLD**



FEATURES

- Resistors Built-in TYPE



$R_1 = 10 \text{ k}\Omega$
 $R_2 = 47 \text{ k}\Omega$

- Complementary to FN1A4P

ABSOLUTE MAXIMUM RATINGS

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

| | | | |
|------------------------------|-----------|-----|----|
| Collector to Base Voltage | V_{CBO} | 60 | V |
| Collector to Emitter Voltage | V_{CEO} | 50 | V |
| Emitter to Base Voltage | V_{EBO} | 5 | V |
| Collector Current (DC) | I_C | 100 | mA |
| Collector Current (Pulse) | I_C | 200 | mA |

Maximum Power Dissipation

| | | | |
|--|-------|-----|----|
| Total Power Dissipation at 25°C Ambient Temperature | P_T | 200 | mW |
|--|-------|-----|----|

Maximum Temperatures

| | | | |
|---------------------------|-----------|-------------|------------------|
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|------------------------------|-----------------|------|------|------|------------------|---|
| Collector Cutoff Current | I_{CBO} | | | 100 | nA | $V_{CB} = 50 \text{ V}, I_E = 0$ |
| DC Current Gain | h_{FE1}^* | 85 | 210 | 340 | | $V_{CE} = 5.0 \text{ V}, I_C = 5.0 \text{ mA}$ |
| DC Current Gain | h_{FE2}^* | 95 | 370 | | | $V_{CE} = 5.0 \text{ V}, I_C = 50 \text{ mA}$ |
| Collector Saturation Voltage | $V_{CE(sat)}^*$ | | 0.04 | 0.2 | V | $I_C = 5.0 \text{ mA}, I_B = 0.25 \text{ mA}$ |
| Low-Level Input Voltage | V_{IL}^* | | 0.65 | 0.5 | V | $V_{CE} = 5.0 \text{ V}, I_C = 100 \mu\text{A}$ |
| High-Level Input Voltage | V_{IH}^* | 3.0 | 0.89 | | V | $V_{CE} = 0.2 \text{ V}, I_C = 5.0 \text{ mA}$ |
| Input Resistor | R_1 | 7.0 | 10.0 | 13.0 | $\text{k}\Omega$ | |
| E-B Resistor | R_2 | 32.9 | 47.0 | 61.1 | $\text{k}\Omega$ | |
| Turn-on Time | t_{on} | | 0.1 | 0.2 | μs | $V_{CC} = 5 \text{ V}, V_{in} = 5 \text{ V}$ $R_L = 1 \text{ k}\Omega$ $PW = 2 \mu\text{s}, \text{Duty Cycle} \leq 2\%$ |
| Storage Time | t_{stg} | | 3.0 | 5.0 | μs | |
| Turn-off Time | t_{off} | | 3.2 | 6.0 | μs | |

* Pulsed: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

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

