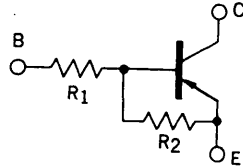


# NEC

## PNP SILICON TRANSISTOR BN1A4M

**DESCRIPTION** The BN1A4M is designed for use in medium speed switching circuit.

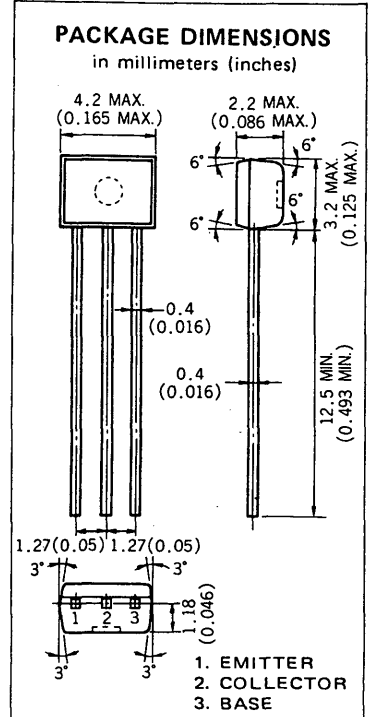
**FEATURE** • Bias resistors built-in type PNP transistor equivalent circuit.



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

### ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures	
Storage Temperature	-55 to +150 °C
Junction Temperature	150 °C Maximum
Maximum Power Dissipation ( $T_a = 25\text{ °C}$ )	
Total Power Dissipation	250 mW
Maximum Voltages and Currents ( $T_a = 25\text{ °C}$ )	
$V_{CBO}$ Collector to Base Voltage	-60 V
$V_{CEO}$ Collector to Emitter Voltage	-50 V
$V_{EBO}$ Emitter to Base Voltage	-10 V
$I_{C(DC)}$ Collector Current (DC)	-100 mA
$I_{C(pulse)}$ Collector Current (pulse)	-200 mA



### ELECTRICAL CHARACTERISTICS ( $T_a = 25\text{ °C}$ )

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
$R_1$	Input Resistance	7.0	10.0	13.0	k $\Omega$	
$R_1/R_2$	Resistors Ratio	0.9	1.0	1.1	-	
$V_{IL}$	Low Level Input Voltage		-1.13	-0.8	V	$V_{CE} = -5.0\text{ V}, I_C = -100\text{ }\mu\text{A}$
$V_{IH}$	Hi Level Input Voltage	-3.0	-1.6		V	$V_{CE} = -0.2\text{ V}, I_C = -5.0\text{ mA}$
$t_{on}$	Turn on Time		0.1	0.5	$\mu\text{s}$	$V_{CE} = -5.0\text{ V}, R_L = 1.0\text{ k}\Omega$ $V_{in} = -5.0\text{ V},$ $PW = 2\text{ }\mu\text{s}, \text{Duty Cycle} \leq 2\%$
$t_{stg}$	Storage Time		0.95	3.0	$\mu\text{s}$	
$t_{off}$	Turn off Time		1.1	5.0	$\mu\text{s}$	
$h_{FE1}$	DC Current Gain	35	50	100	-	$V_{CE} = -5.0\text{ V}, I_C = -5.0\text{ mA}$
$h_{FE2}$	DC Current Gain	80	140		-	$V_{CE} = -5.0\text{ V}, I_C = -50\text{ mA}$
$V_{CE(sat)}$	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	$\mu\text{A}$	$V_{CB} = -50\text{ V}, I_E = 0$

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

