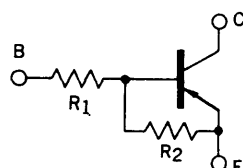


DESCRIPTION The BN1L4M is designed for use in medium speed switching circuit.

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



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

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures

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

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

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

Total Power Dissipation 250 mW

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

V_{CBO} Collector to Base Voltage -60 V

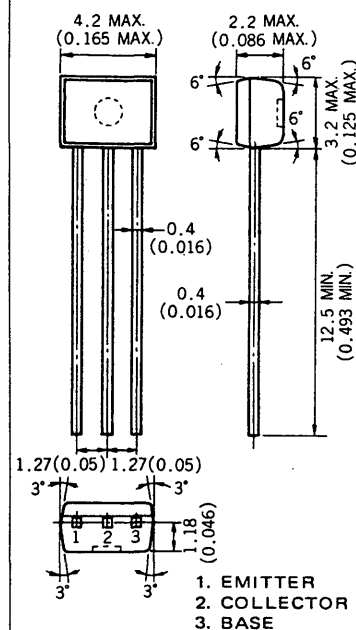
V_{CEO} Collector to Emitter Voltage -50 V

V_{EBO} Emitter to Base Voltage -10 V

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

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

PACKAGE DIMENSIONS in millimeters (inches)



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

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
R_1	Input Resistance	32.9	47.0	61.1	$\text{k}\Omega$	
R_1/R_2	Resistors Ratio	0.9	1.0	1.1	—	
V_{IL}	Low Level Input Voltage		-1.17	-0.8	V	$V_{\text{CE}} = -5.0 \text{ V}$, $I_{\text{C}} = -100 \mu\text{A}$
V_{IH}	Hi Level Input Voltage	-5.0	-2.4		V	$V_{\text{CE}} = -0.2 \text{ V}$, $I_{\text{C}} = -5.0 \text{ mA}$
t_{on}	Turn on Time		0.5	1.0	μs	$V_{\text{CC}} = -5.0 \text{ V}$, $R_{\text{L}} = 1.0 \text{ k}\Omega$ $V_{\text{in}} = -5.0 \text{ V}$, $\text{PW} = 2 \mu\text{s}$, Duty Cycle $\leq 2\%$
t_{stg}	Storage Time		0.8	3.0	μs	
t_{off}	Turn off Time		1.4	4.0	μs	
h_{FE1}	DC Current Gain	85	135	340	—	$V_{\text{CE}} = -5.0 \text{ V}$, $I_{\text{C}} = -5.0 \text{ mA}$
h_{FE2}	DC Current Gain	95	180		—	$V_{\text{CE}} = -5.0 \text{ V}$, $I_{\text{C}} = -50 \text{ mA}$
$V_{\text{CE(sat)}}$	Collector Saturation Voltage		-0.05	-0.2	V	$I_{\text{C}} = -5.0 \text{ mA}$, $I_{\text{B}} = -0.25 \text{ mA}$
I_{CBO}	Collector Cutoff Current			-0.1	μA	$V_{\text{CB}} = -50 \text{ V}$, $I_{\text{E}} = 0$

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