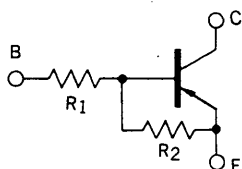


DESCRIPTION The BN1F4M is designed for use in medium speed switching circuit.

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 $+150^\circ\text{C}$

Junction Temperature 150°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

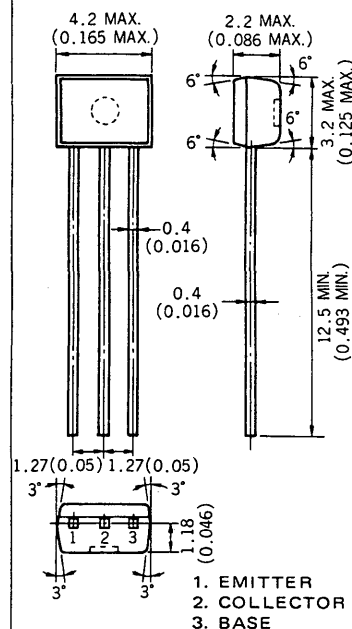
V_{CEO} Collector to Emitter Voltage -50 V

V_{EBO} Emitter to Base Voltage -10 V

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

$I_C(\text{pulse})$ 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	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	$V_{CE} = -5.0 \text{ V}, I_C = -100 \mu\text{A}$
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	$V_{CC} = -5.0 \text{ V}, R_L = 1.0 \text{ k}\Omega$ $V_{in} = -5.0 \text{ V}$ $PW = 2 \mu\text{s}, \text{Duty Cycle} \leq 2\%$
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 ($T_a = 25^\circ\text{C}$)