

New Jersey Semi-Conductor Products, Inc.

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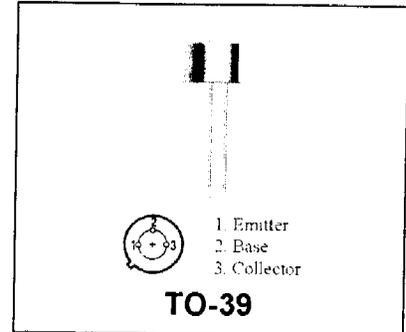
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2N5109

RF & MICROWAVE DISCRETE LOW POWER TRANSISTORS

Features

- Silicon NPN, To-39 packaged VHF/UHF Transistor
- 1.2 GHz Current-Gain Bandwidth Product @ 50mA
- Maximum Unilateral Gain = 12dB (typ) @ 200 MHz



DESCRIPTION:

The 2N5109 is a silicon NPN transistor, designed for VHF and UHF equipment. Applications include amplifier; pre-driver, driver, and output stages. It is also suitable for oscillator and frequency-multiplier functions.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CEO}	Collector-Emitter Voltage	20	Vdc
V _{CBO}	Collector-Base Voltage	40	Vdc
V _{EBO}	Emitter-Base Voltage	3.0	Vdc
I _C	Collector Current	400	mA

Thermal Data

P _D	Total Device Dissipation @ T _C = 75°C (1) Derate above 25°C	2.5 20	Watts mW/°C
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Note 1. Total Device dissipation at T_A = 25°C is 1 Watt.



NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

ELECTRICAL SPECIFICATIONS (Tcase = 25°C)

STATIC (off)

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BVCEO(sus)	Collector-Emitter Sustaining Voltage (IC=5.0 mA _{dc} , IB=0)	20	-	-	V _{dc}
BVCER(sus)	Collector-Emitter Sustaining Voltage (IC = 5.0 mA _{dc} , RBE = 10 ohms)	40	-	-	V _{dc}
ICEO	Collector Cutoff Current (VCE = 15 V _{dc} , IB = 0)	-	-	20	μA
IEBO	Emitter Cutoff Current (VEB = 3.0 V _{dc} , IC = 0)	-	-	100	μA

(on)

HFE	DC Current Gain (IC = 360 mA _{dc} , VCE = 5.0 V _{dc}) (IC = 50 mA _{dc} , VCE = 15.0 V _{dc})	5	-	-	-
		40	-	120	-

DYNAMIC

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
f _T	Current-Gain - Bandwidth Product (IC = 50 mA _{dc} , VCE = 15 V _{dc} , f = 200 MHz)	-	1200	-	MHz

FUNCTIONAL

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
G _{U max}	Maximum Unilateral Gain (1)	IC = 50 mA _{dc} , VCE = 15V _{dc} , f = 200 MHz	-	12	-	dB
MAG	Maximum Available Gain	IC = 50 mA _{dc} , VCE = 15V _{dc} , f = 200 MHz	-	11.2	-	dB
S ₂₁ ²	Insertion Gain	IC = 50 mA _{dc} , VCE = 15V _{dc} , f = 200 MHz	9.5	10.5	-	dB