

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com

2N5109

NPN SILICON RF TRANSISTOR

JEDEC TO-39 CASE

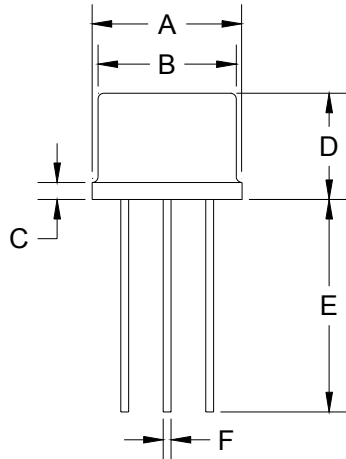
DESCRIPTION: The CENTRAL SEMICONDUCTOR 2N5109 is a Silicon NPN Epitaxial Planar RF Transistor mounted in a hermetically sealed package designed for high frequency amplifier applications.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	400	mA
Base Current	I_B	400	mA
Power Dissipation	P_D	1.0	W
Power Dissipation ($T_C=75^\circ\text{C}$)	P_D	2.5	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

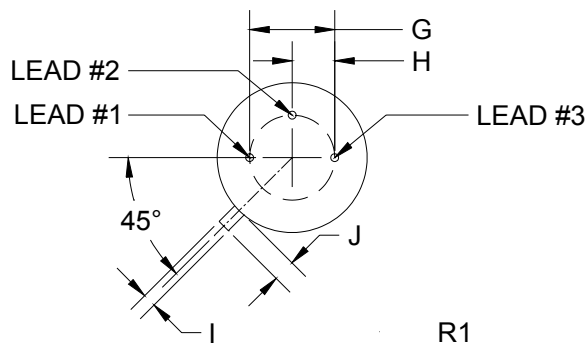
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNITS</u>
I_{CEV}	$V_{CE}=35\text{V}, V_{BE}=1.5\text{V}$			5.0	mA
I_{CEV}	$V_{CE}=15\text{V}, V_{BE}=1.5\text{V}, T_C=150^\circ\text{C}$			5.0	mA
I_{CEO}	$V_{CE}=15\text{V}$			20	μA
I_{EBO}	$V_{EB}=3.0\text{V}$			100	μA
BV_{CBO}	$I_C=0.1\text{mA}$	40			V
BV_{CER}	$I_C=5.0\text{mA}, R_{BE}=10\Omega$	40			V
BV_{CEO}	$I_C=5.0\text{mA}$	20			V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			0.5	V
h_{FE}	$V_{CE}=15\text{V}, I_C=50\text{mA}$	70		210	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=360\text{mA}$	5.0			
f_T	$V_{CE}=15\text{V}, I_C=50\text{mA}, f=200\text{MHz}$	1200			MHz
C_{ob}	$V_{CB}=15\text{V}, I_E=0, f=1.0\text{MHz}$			3.5	pF
NF	$V_{CE}=15\text{V}, I_C=10\text{mA}, f=200\text{MHz}$		3.0		dB
G_{PE}	$V_{CE}=15\text{V}, I_C=50\text{mA}, f=200\text{MHz}$	11			dB

TO-39 PACKAGE - MECHANICAL OUTLINE

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

Lead Code

- 1) Emitter
- 2) Base
- 3) Collector

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