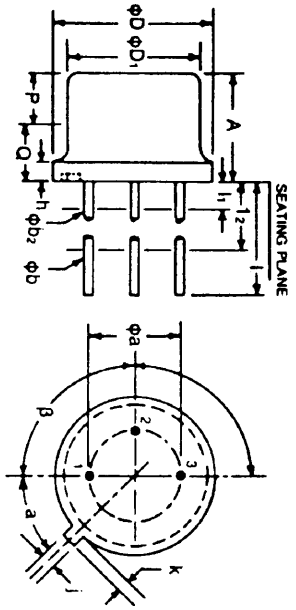
NPN SILICON HIGH FREQUENCY TRANSISTOR

PACKAGE STYLE TO-39



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
Φa	0.190	0.210	4.83	5.33
A	0.240	0.260	6.10	6.60
Φb	0.016	0.021	0.406	0.533
Φb2	0.016	0.019	0.406	0.483
ΦD	0.350	0.370	8.89	9.40
ΦD1	0.315	0.335	8.00	8.51
h	0.009	0.125	0.229	3.18
j	0.028	0.034	0.711	0.864
k	0.029	0.040	0.737	1.02
l	0.500		12.70	
l1		0.050		1.27
l2	0.250		6.35	
P	0.100		2.54	
Q				
a	45° NOMINAL			
β	90° NOMINAL			

1 = Emitter 2 = Base
3 = Collector

DESCRIPTION:

The **2N5109** is a High Frequency Transistor for General Purpose Amplifier Applications.

MAXIMUM RATINGS

I_C	400 mA
V_{CE}	20 V
P_{DISS}	1.0 W @ T_A = 25 °C 2.5 W @ T_C = 75 °C

CHARACTERISTICS T_A = 25 °C

SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
BV_{CEO}	I_C = 5.0 mA	20			V
BV_{CER}	I_C = 5.0 mA R_{BE} = 10Ω	40			V
BV_{CBO}	I_C = 100 µA	40			V
I_{CEX}	V_{CE} = 35 V V_{BE} = -1.50 V V_{CE} = 15 V V_{BE} = -1.50 V T_C = 150 °C			5.0	mA
I_{CEO}	V_{CE} = 15 V			20	µA
I_{EBO}	V_{EB} = 3.0 V			100	µA
h_{FE}	V_{CE} = 15 V I_C = 50 mA V_{CE} = 5.0 V I_C = 360 mA	40 5.0		220	---
$V_{CE(SAT)}$	I_C = 100mA I_B = 10 mA			0.5	V
f_t	V_{CE} = 15 V I_C = 50 mA f = 200 MHz	1200			MHz
C_{OB}	V_{CB} = 15 V f = 1.0 MHz			3.5	pF
N_F	V_{CE} = 15 V I_C = 10 mA R_G = 50 Ω f = 200 MHz		3.0		dB
G_{ve}	V_{CC} = 15 V I_C = 50 mA f = 50 to 216 MHz	1.1			dB
P_{in}	V_{CC} = 15 V I_C = 50 mA R_S = 50 Ω f = 200 MHz			0.1	W