

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

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2N3866

NPN SILICON
HIGH FREQUENCY TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3866 is a Silicon NPN RF Transistor, mounted in a hermetically sealed package, designed for high frequency amplifier and oscillator applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	V _{CBO}	55	V
Collector-Emitter Voltage	V _{CEO}	30	V
Emitter-Base Voltage	V _{EBO}	3.5	V
Collector Current	I _C	0.4	A
Base Current	I _B	2.0	A
Power Dissipation (T _C =25°C)	P _D	5.0	W
Operating and Storage Junction Temperature	T _J , T _{stg}	-65 to +200	°C
Thermal Resistance	θ _{JC}	35	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
I _{CEO}	V _{CE} =28V		0.02	mA
I _{CEV}	V _{CE} =55V, V _{BE(OFF)} =1.5V		0.1	mA
I _{CEV}	V _{CE} =30, V _{BE(OFF)} =1.5V, T _C =200°C		5.0	mA
I _{EBO}	V _{EB} =3.5V		0.1	mA
BV _{CER}	I _C =5.0mA, R _{BE} =10Ω	55		V
BV _{CEO}	I _C =5.0mA	30		V
BV _{EBO}	I _C =100μA	3.5		V
V _{CE(SAT)}	I _C =100mA, I _B =20mA		1.0	V
h _{FE}	V _{CE} =5.0V, I _C =50mA	10	200	
h _{FE}	V _{CE} =5.0V, I _C =360mA	5.0		
f _T	V _{CE} =15V, I _C =50mA, f=200MHz	500		MHz
C _{ob}	V _{CB} =28V, I _E =0, f=1.0MHz		3.0	pF
G _{PE}	V _{CC} =28V, P _{out} =1.0W, f=400MHz (Figure 1.)	10		dB
η	V _{CC} =28V, P _{out} =1.0W, f=400MHz (Figure 1.)	45		%

(SEE REVERSE SIDE)

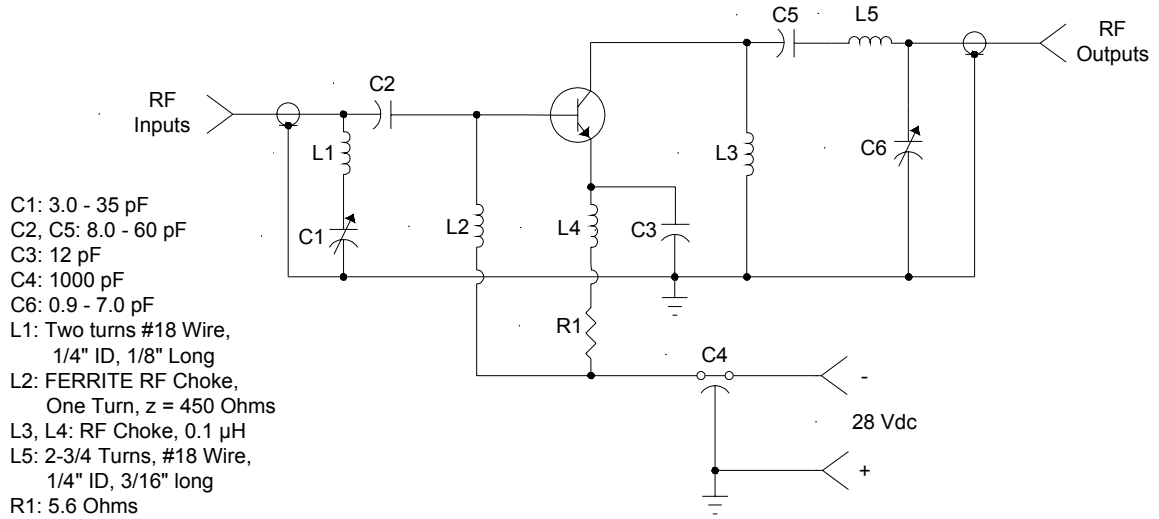
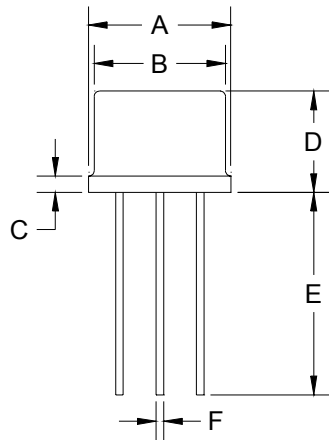


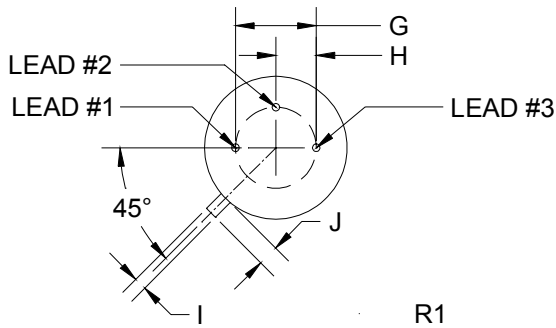
Figure 1. 400 MHz Test Circuit

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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