## 2N3866 2N3866A

#### NPN SILICON HIGH FREQUENCY TRANSISTOR



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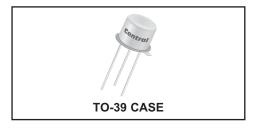
°C

°C/W

## **DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N3866 and 2N3866A are Silicon NPN RF Transistors, mounted in a hermetically sealed package, designed for high frequency amplifier and oscillator applications.

**MARKING: FULL PART NUMBER** 



MAXIMUM RATINGS: (T<sub>A</sub>=25°C unless otherwise noted) SYMBOL UNITS Collector-Base Voltage 55  $V_{CBO}$ V Collector-Emitter Voltage 30 V **VCEO** Emitter-Base Voltage  $V_{EBO}$ 3.5 ٧ Continuous Collector Current  $I_{C}$ 0.4 Α Continuous Base Current 2.0 Α  $I_{\mathsf{B}}$ Power Dissipation (T<sub>C</sub>=25°C) W  $P_{D}$ 5.0

Operating and Storage Junction Temperature  $T_J$ ,  $T_{stg}$  -65 to +200 Thermal Resistance  $\Theta_{JC}$  35

EL ECTRICAL	CHARACTERISTICS: (T <sub>A</sub> =25°C unless otherw	vise noted)		
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
ICEO	V <sub>CE</sub> =28V		20	μΑ
<sup>I</sup> CEV	$V_{CE}$ =55V, $V_{BE(OFF)}$ =1.5V		0.1	mA
ICEV	V <sub>CE</sub> =30V, V <sub>BE(OFF)</sub> =1.5V, T <sub>C</sub> =200°C		5.0	mA
I <sub>EBO</sub>	V <sub>EB</sub> =3.5V		0.1	mA
BV <sub>CER</sub>	$I_C$ =5.0mA, $R_{BE}$ =10 $\Omega$	55		V
$BV_{CBO}$	I <sub>C</sub> =500μA	55		V
$BV_{CEO}$	I <sub>C</sub> =5.0mA	30		V
$BV_{EBO}$	I <sub>E</sub> =100μA	3.5		V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =100mA, I <sub>B</sub> =20mA		1.0	V
hFE	V <sub>CE</sub> =5.0V, I <sub>C</sub> =50mA (2N3866)	10	200	
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =50mA (2N3866A)	25	200	
hFE	V <sub>CE</sub> =5.0V, I <sub>C</sub> =360mA	5.0		
$f_{T}$	V <sub>CE</sub> =15V, I <sub>C</sub> =50mA, f=200MHz (2N3866)	500		MHz
$f_{T}$	V <sub>CE</sub> =15V, I <sub>C</sub> =50mA, f=200MHz (2N3866A)	800		MHz
C <sub>ob</sub>	V <sub>CB</sub> =28V, I <sub>E</sub> =0, f=1.0MHz		3.0	pF
G <sub>PE</sub>	V <sub>CC</sub> =28V, P <sub>out</sub> =1.0W, f=400MHz (Figure 1)		10	dB
η	V <sub>CC</sub> =28V, P <sub>out</sub> =1.0W, f=400MHz (Figure 1)		45	%

R2 (15-September 2010)

## 2N3866 2N3866A





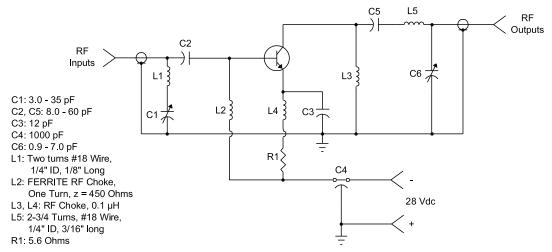
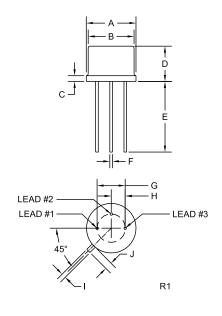


Figure 1. 400MHz Test Circuit

## **TO-39 CASE - MECHANICAL OUTLINE**



DIMENSIONS							
	INCHES		MILLIMETERS				
SYMBOL	MIN	MAX	MIN	MAX			
A (DIA)	0.335	0.370	8.51	9.40			
B (DIA)	0.315	0.335	8.00	8.51			
С	-	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				
Н	0.100		2.54				
	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

MARKING: FULL PART NUMBER

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