

# NPN SILICON HIGH FREQUENCY TRANSISTOR

**DESCRIPTION:**

The **2N3866A** is a High Frequency Transistor Designed for Amplifier and Oscillator Applications.

**MAXIMUM RATINGS**

$I_C$	400 mA
$V_{CE}$	30 V
$P_{DISS}$	5.0 W @ $T_C = 25^\circ C$
$T_J$	$-65^\circ C$ to $+200^\circ C$
$T_{STG}$	$-65^\circ C$ to $+200^\circ C$
$\theta_{JC}$	$35^\circ C/W$

**PACKAGE STYLE TO-39**

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
$\phi a$	0.190	0.210	4.83	5.33
A	0.240	0.260	6.10	6.60
$\phi b$	0.016	0.021	0.406	0.533
$\phi b_2$	0.016	0.019	0.406	0.483
$\phi D$	0.350	0.370	8.89	9.40
$\phi D_1$	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	
$l_1$		0.050		1.27
$l_2$	0.250		6.35	
P	0.100		2.54	
Q				
a	45° NOMINAL			
$\beta$	90° NOMINAL			

1 = Emitter      2 = Base  
3 = Collector

**CHARACTERISTICS**  $T_C = 25^\circ C$ 

SYMBOL	TEST CONDITIONS			MINIMUM	TYPICAL	MAXIMUM	UNITS
$BV_{CEO}$	$I_C = 5.0$ mA			30			V
$BV_{CER}$	$I_C = 5.0$ mA	$R_{BE} = 10 \Omega$		55			V
$BV_{EBO}$	$I_C = 100 \mu A$			3.5			V
$I_{CEX}$	$V_{CE} = 55$ V	$V_{BE} = -1.5$ V	$T_C = 200^\circ C$			100	$\mu A$
	$V_{CE} = 30$ V	$V_{BE} = -1.5$ V		500			
$I_{CEO}$	$V_{CE} = 28$ V					20	$\mu A$
$I_{EBO}$	$V_{EB} = 3.5$ V					100	$\mu A$
$h_{FE}$	$V_{CE} = 5.0$ V	$I_C = 50$ mA		25		200	---
		$I_C = 360$ mA		5.0			
$V_{CE(SAT)}$	$I_C = 100$ mA	$I_B = 20$ mA				1.0	V
$f_t$	$V_{CE} = 15$ V	$I_C = 50$ mA	$f = 200$ MHz	800			MHz
$C_{OB}$	$V_{CB} = 28$ V					3.0	pF
$G_{PE}$ $\eta_c$	$V_{CC} = 28$ V	$P_{out} = 1.0$ W	$f = 400$ MHz	10			dB
				45			%