

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

Parameters	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	30	V
Collector-Base Voltage	$V_{CB}$	55	V
Emitter-Base Voltage	$V_{EB}$	3.5	V
Collector Current - Continuous	$I_C$	0.400	A
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	$P_D$	5.0 28.6	W mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise specified)

Parameters	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage $I_C = 5.0\text{mA}, R_{BE} = 10\Omega$	$BV_{CEB}$	55	-	-	V
Collector-Emitter Sustaining Voltage $I_C = 5.0\text{mA}, I_B = 0$	$BV_{CEO}$	30	-	-	V
Collector-Base Breakdown Voltage $I_E = 0, I_C = 0.1\text{mA}$	$BV_{CBO}$	55	-	-	V
Emitter-Base Breakdown Voltage $I_E = 0.1\text{mA}, I_C = 0$	$BV_{EBO}$	3.5	-	-	V
Collector Cutoff Current $V_{CE} = 28\text{V}, I_B = 0$	$I_{CEO}$	-	-	20	$\mu\text{A}$
Collector Cutoff Current $V_{CE} = 55\text{V}, V_{BE} = 1.5\text{V}$	$I_{CEX}$	-	-	100	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>					
DC Current Gain					
$I_C = 360\text{mA}, V_{CE} = 5\text{V}$	2N3866 2N3866A	5.0	-	-	-
$I_C = 0.05\text{A}, V_{CE} = 5\text{V}$	2N3866	10	-	200	-
$I_C = 50\text{mA}, V_{CE} = 5\text{V}$	2N3866A	25	-	200	-
Collector-Emitter Saturation Voltage $I_C = 100\text{mA}, I_B = 20\text{mA}$	$V_{CE(sat)}$	-	-	1.0	V
<b>DYNAMIC CHARACTERISTICS</b>					
Current Gain – Bandwidth Product $I_C = 50\text{mA}, V_{CE} = 15\text{V}, f = 200\text{MHz}$	2N3866 2N3866A	500 800	800 -	- -	MHz
Output Capacitance $V_{CB} = 30\text{V}, I_E = 0, f = 1.0\text{MHz}$	$C_{ob}$	-	2.0	3.0	pF

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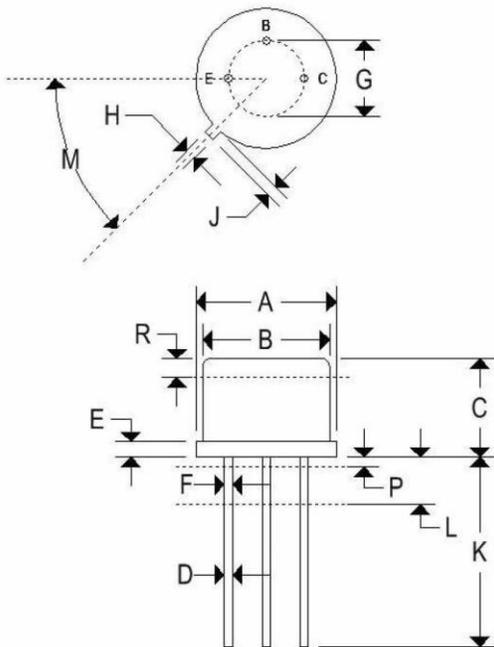
## NPN SILICON LOW POWER TRANSISTORS

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)

Parameters		Symbol	Min	Max	Unit
<b>FUNCTIONAL TEST</b>					
Power Gain	Test circuit – Figure 1 Pin = 0.1W, V <sub>CE</sub> = 28V, f = 400MHz, T <sub>C</sub> = 25°C	G <sub>PE</sub>	10	-	dB
Power Output		P <sub>OUT</sub>	1.0	-	W
Collector Efficiency		η	45	-	%

### MECHANICAL CHARACTERISTICS

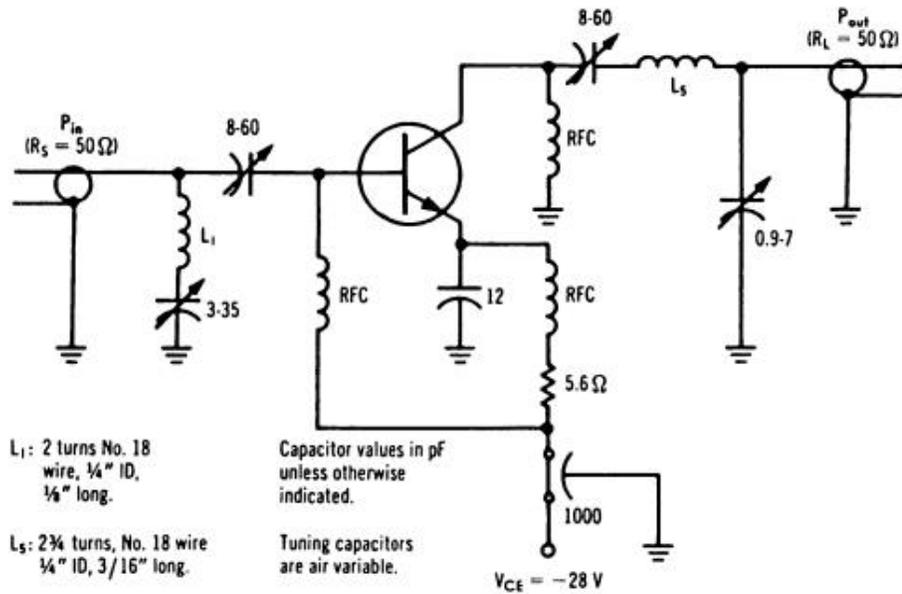
Case	TO-39
Marking	Alpha-numeric
Polarity	See below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.370	8.890	9.400
B	0.315	0.335	8.000	8.510
C	0.240	0.260	6.10	6.60
D	0.016	0.021	0.406	0.533
E	0.009	0.125	0.2269	3.180
F	0.016	0.019	0.406	0.533
G	0.190	0.210	4.830	5.33
H	0.028	0.034	0.711	0.864
J	0.029	0.040	0.737	1.020
K	0.500	-	12.700	-
L	0.250	-	6.350	-
M	45° NOM		45° NOM	
P	-	0.050	-	1.270
Q	90° NOM		90° NOM	
R	0.100	-	2.540	-

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NPN SILICON LOW POWER TRANSISTORS



400 MHz RF AMPLIFIER CIRCUIT FOR POWER-OUTPUT TEST