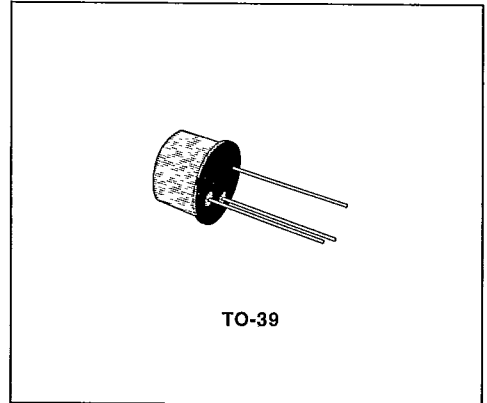


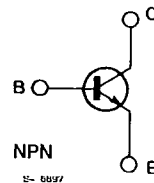
VHF-UHF POWER AMPLIFIER

DESCRIPTION

The 2N3866 and BFR97 are silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. They are designed for VHF-UHF class A, B, or C amplifier circuits and oscillator applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CES}	Collector-emitter Voltage ($V_{BE} = 0$)	55	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	30	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	3.5	V
I_C	Collector Current	0.5	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$	5	W
T_{stg}, T_J	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

THERMAL DATA

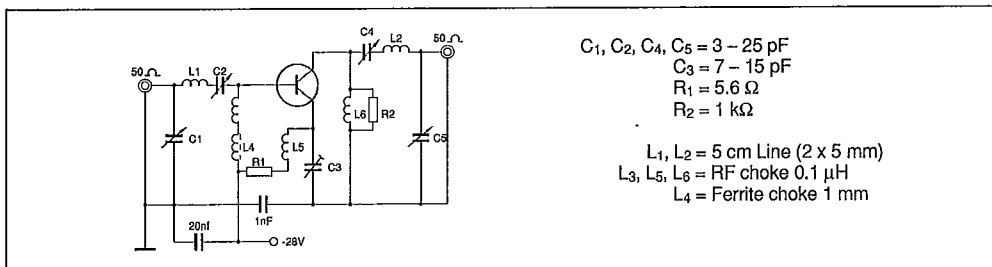
$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	35	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ °C}$ unless otherwise specified)

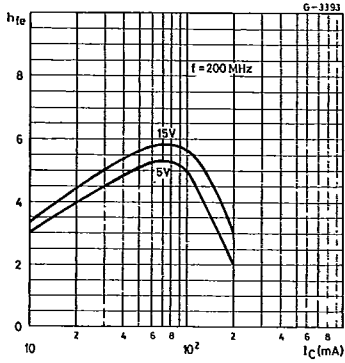
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = 28\text{ V}$			20	μA
$V_{(BR)CES}$	Collector-emitter Breakdown Voltage ($V_{BE} = 0$)	$I_C = 0.1\text{ mA}$	55			V
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 5\text{ mA}$	30			V
$V_{(BR)EBO}$	Emitter-base Breakdown Voltage ($I_C = 0$)	$I_E = 100\ \mu\text{A}$	3.5			V
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	$I_C = 100\text{ mA}$ $I_B = 20\text{ mA}$			1	V
h_{FE}^*	DC Current Gain	$I_C = 50\text{ mA}$ $V_{CE} = 5\text{ V}$ $I_C = 360\text{ mA}$ $V_{CE} = 5\text{ V}$	10 5		200	
f_T	Transition Frequency	$I_C = 50\text{ mA}$ $V_{CE} = 15\text{ V}$ $f = 200\text{ MHz}$	500			MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $V_{CB} = -28\text{ V}$ $f = 1\text{ MHz}$			3	pF
P_o^{**}	Output Power	$V_{CC} = -28\text{ V}$ $P_i = 100\text{ mW}$ $f = 400\text{ MHz}$	1			W
η^{**}	Collector Efficiency	$V_{CC} = -28\text{ V}$ $P_o = 1\text{ W}$ $f = 400\text{ MHz}$	45			%

* Pulsed : pulse duration = 300 ms, duty cycle = 1 %.

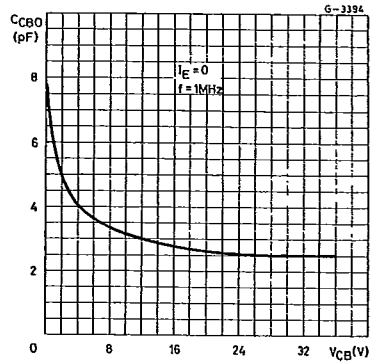
** See test circuit.

Test Circuit for Power Output Measurement ($f = 400\text{ MHz}$).

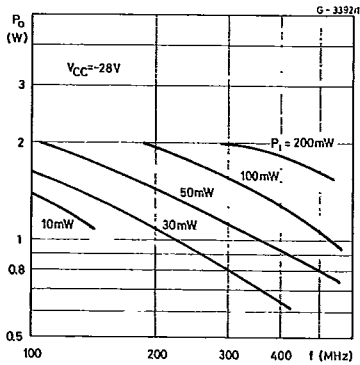
High Frequency Current Drain.



Collector-base Capacitance.



RF Output Power.



Power Rating Chart.

