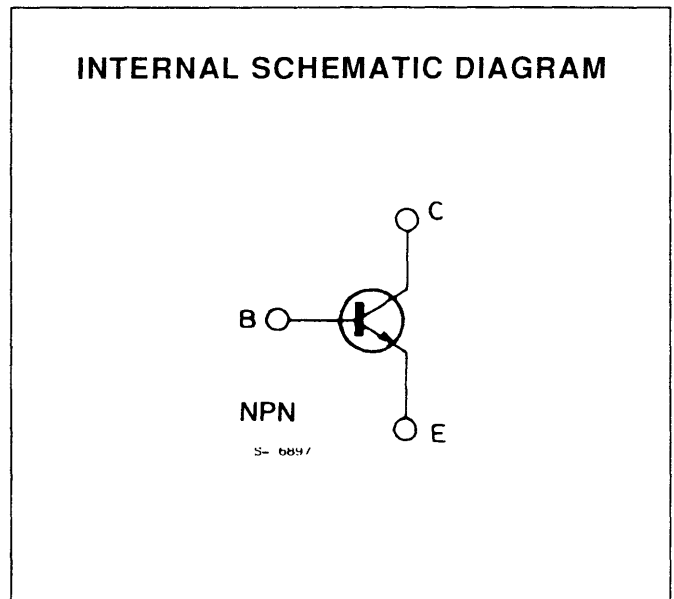
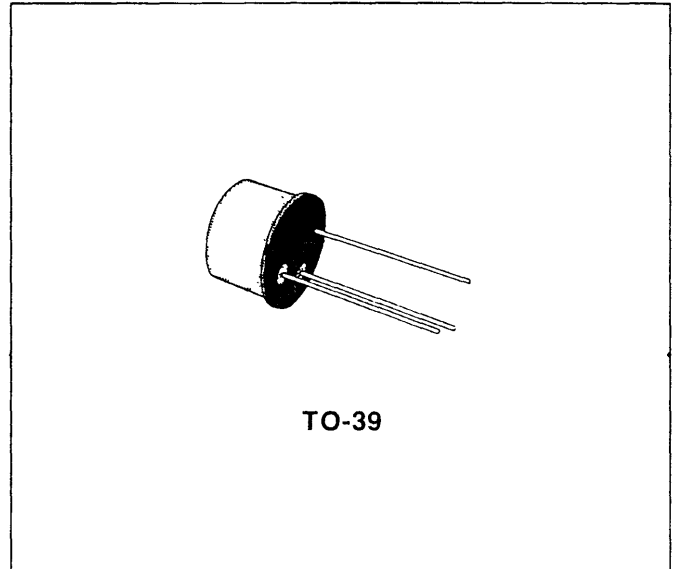


VHF OSCILLATOR POWER AMPLIFIER

**DESCRIPTION**

The 2N4427 and BFR98 are silicon planar epitaxial NPN transistor in Jedec TO-39 metal case. They are designed for VHF class A, B, or C amplifier and oscillator applications.



**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	40	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	20	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 $T_{case} \leq 25\text{ }^\circ\text{C}$	3.5	W
$T_{stg}, T_J$	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

**THERMAL DATA**

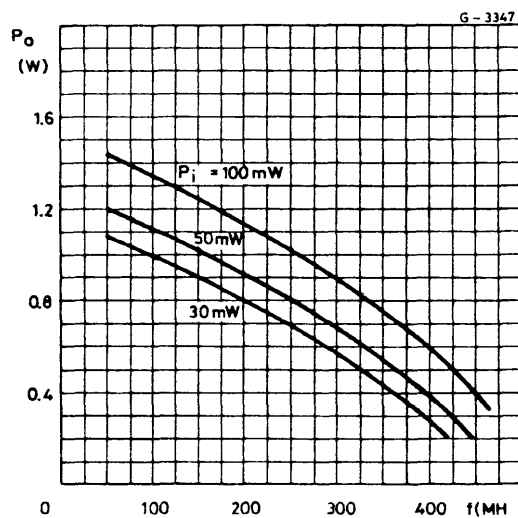
$R_{th J-case}$	Thermal Resistance Junction-case	Max	50	°C/W
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**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ °C}$  unless otherwise specified)

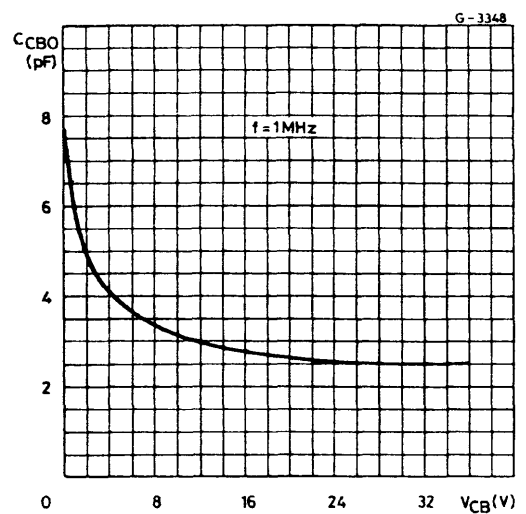
Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$I_{CEO}$	Collector Cutoff Current ( $I_B = 0$ )	$V_{CE} = 12\text{ V}$				20	$\mu\text{A}$
$V_{(BR)CBO}$	Collector-base Breakdown Voltage ( $I_E = 0$ )	$I_C = 100\ \mu\text{A}$		40			V
$V_{CEO(sus)}^*$	Collector-emitter Sustaining Voltage ( $I_B = 0$ )	$I_C = 5\text{ mA}$		20			V
$V_{CER(sus)}^*$	Collector-Emmitter Sustaining Voltage ( $R_{BE} = 10\ \Omega$ )	$I_C = 5\text{ mA}$		40			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_C = 0$ )	$I_E = 100\ \mu\text{A}$		3.5			V
$V_{CE(sat)}^*$	Collector-Emmitter Saturation Voltage	$I_C = 100\text{ mA}$	$I_B = 20\text{ mA}$			0.5	V
$h_{FE}^*$	DC Current Gain	$I_C = 100\text{ mA}$ $I_C = 360\text{ mA}$	$V_{CE} = 5\text{ V}$ $V_{CE} = 5\text{ V}$	10 5		200	
$f_T$	Transition Frequency	$I_C = 50\text{ mA}$ $f = 200\text{ MHz}$	$V_{CE} = 15\text{ V}$	500			MHz
$C_{CBO}$	Collector-base Capacitance	$I_E = 0$ $f = 1\text{ MHz}$	$V_{CB} = 12\text{ V}$			4	pF
$P_o^{**}$	Output Power	$V_{CC} = 12\text{ V}$ $f = 175\text{ MHz}$	$P_I = 100\text{ mW}$	1			W
$\eta^{**}$	Collector Efficiency	$V_{CC} = 12\text{ V}$ $f = 175\text{ MHz}$	$P_o = 1\text{ W}$	50			%

\* Pulsed : pulse duration = 300  $\mu\text{s}$ , duty cycle = 1 %.  
 \*\* See test circuit.

RF Output Power.



Collector-base Capacitance.



## TEST CIRCUIT

Test Circuit for Power Output Measurement ( $f = 175 \text{ MHz}$ ).