

BF506

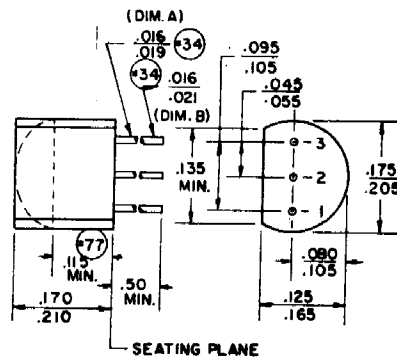
SILICON PLANAR PNP

VHF OSCILLATOR MIXER

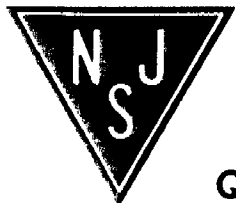
The BF 506 is a silicon planar epitaxial PNP transistor in Jedec TO-92 plastic package. It is intended for use as mixer and oscillator in the VHF range. However, it may also be used as not controlled preamplifier at low noise.

ABSOLUTE MAXIMUM RATINGS

V_{CBO}	Collector-base voltage ($I_E = 0$)	-40	V
V_{CEO}	Collector-emitter voltage ($I_B = 0$)	-35	V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	-4	V
I_C	Collector current	-30	mA
I_B	Base current	-5	mA
P_{tot}	Total power dissipation at $T_{amb} \leq 45^\circ\text{C}$	250	mW
T_{stg}	Storage temperature	-55 to 150	$^\circ\text{C}$
T_J	Junction temperature	150	$^\circ\text{C}$



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THERMAL DATA

$R_{th \text{ j-amb}}$	Thermal resistance junction-ambient	max	420 °C/W
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ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CBO} Collector cutoff current ($I_E = 0$)	$V_{CB} = -20\text{V}$			-200	nA
$V_{(BR)CEO}$ Collector-emitter breakdown voltage ($I_B = 0$)	$I_C = -5\text{ mA}$	-35			V
$V_{(BR)EBO}$ Emitter-base breakdown voltage ($I_C = 0$)	$I_E = -10\ \mu\text{A}$	-4			V
h_{FE} DC current gain	$I_C = -3\text{ mA}$ $V_{CE} = -10\text{V}$		40		—
f_T Transition frequency	$I_C = -1\text{ mA}$ $V_{CE} = -10\text{V}$ $f = 100\text{ MHz}$		400		MHz
C_{CBO} Collector-base capacitance	$I_E = 0$ $V_{CB} = -10\text{V}$ $f = 1\text{ MHz}$		0.8		pF
C_{rb} Reverse capacitance	$I_C = 0$ $V_{CB} = -10\text{V}$ $f = 1\text{ MHz}$		0.13		pF
NF*/** Noise figure	$I_C = -1\text{ mA}$ $V_{CC} = -6\text{V}$ $R_g = 50\ \Omega$ $f = 200\text{ MHz}$		2.5	4	dB
G_{pb}^* Power gain	$I_C = -3\text{ mA}$ $V_{CC} = -10.8\text{V}$ $R_L = 1\text{ k}\Omega$ $f = 200\text{ MHz}$	14	17		dB

* See TEST CIRCUIT

** Input adapting for optimum source admittance