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BF506

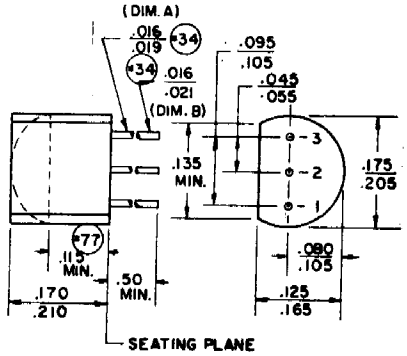
SILICON PLANAR PNP

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 $T_{amb} \leq 45°C$	250	mW
T_{stg}	Storage temperature	-55 to 150	°C
T_j	Junction temperature	150	°C



BF506

THERMAL DATA

$R_{th\ j\text{-}amb}$	Thermal resistance junction-ambient	max	420	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

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

* See TEST CIRCUIT
** Input adapting for optimum source admittance