



NPN HIGH FREQUENCY
SILICON PLANAR EPITAXIAL TRANSISTOR



GENERAL DESCRIPTION :

The BF314 is a NPN silicon planar epitaxial transistor designed for use as RF amplifier and VHF & UHF input stage in common base configuration.

MECHANICAL OUTLINE

TO-92F



CEB

THERMAL CHARACTERISTICS :

Thermal Resistance from Junction to Ambient, $\theta(j-amb)$	0.35°C/mW
Maximum Collector Junction Temperature, T_j	150°C
Storage Temperature Range, T_{stg}	-55°C to +150°C
Soldering Temperature (10 sec. time limit)	260°C

ABSOLUTE MAXIMUM RATINGS :

Continuous Power Dissipation, @ $T_A \leq 45^\circ\text{C}$, P_{tot}	300mW
Continuous Collector Current, I_C max	25mA
Continuous Base Current, I_B max	3mA
Collector-Base Voltage, V_{CBO}	30V
Collector-Emitter Voltage, V_{CEO}	30V
Emitter-Base Voltage, V_{EBO}	4V

ELECTRICAL CHARACTERISTICS @ $T_A=25^\circ\text{C}$ (unless otherwise stated) :

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Collector-Base Breakdown Voltage	V_{CBO}	30			V	$I_C=10\mu\text{A}$ $I_E=0$
Collector-Emitter Breakdown Voltage	V_{CEO}	30			V	$I_C=2\text{mA}$ $I_B=0$
Emitter-Base Breakdown Voltage	V_{EBO}	4			V	$I_E=10\mu\text{A}$ $I_C=0$
Collector-Base Cutoff Current	I_{CBO}			60	nA	$V_{CB}=20\text{V}$ $I_E=0$
Collector-Base Cutoff Current	I_{CBO}			10	μA	$V_{CB}=20\text{V}$ $T_A=100^\circ\text{C}$
D.C. Current Gain	h_{FE}	29				$V_{CE}=10\text{V}$ $I_C=4\text{mA}$
Transition Frequency	f_T		600		MHz	$V_{CE}=10\text{V}$ $I_C=1\text{mA}$ $f=100\text{MHz}$
Feedback Capacitance (common base)	C_{fb}		0.4		pF	$V_{CE}=10\text{V}$ $I_C=2\text{mA}$ $f=100\text{MHz}$
Noise Figure	N.F.		2		dB	$V_{CE}=10\text{V}$ $I_C=2\text{mA}$ $f=200\text{MHz}$ $R_s=120\text{ohm}$
Input Conductance	g_{ib}		120		mS	$V_{CB}=10\text{V}$ $I_E=-5\text{mA}$ $f=100\text{MHz}$
Input Capacitance	C_{ib}		70		pF	$V_{CB}=10\text{V}$ $I_E=-5\text{mA}$ $f=100\text{MHz}$
Feedback Admittance	$ Y_{fb} $		0.6		mS	$V_{CB}=10\text{V}$ $I_E=-5\text{mA}$ $f=100\text{MHz}$
Phase Angle of Feedback Admittance	$\angle Y_{fb}$		90°			
Transfer Admittance	$ Y_{fb} $		130		mS	$V_{CB}=10\text{V}$ $I_E=-5\text{mA}$ $f=100\text{MHz}$
Phase Angle of Transfer Admittance	$\angle Y_{fb}$		28°			
Output Conductance	g_{ob}		0.1		mS	$V_{CB}=10\text{V}$ $I_E=-5\text{mA}$ $f=100\text{MHz}$
Output Capacitance	C_{ob}		1.6		pF	$V_{CB}=10\text{V}$ $I_E=-5\text{mA}$ $f=100\text{MHz}$

MICRO ELECTRONICS LTD.

38 HUNG TO ROAD, KWUN TONG, HONG KONG. TELEX 43510
KWUN TONG P. O. BOX69477 CABLE ADDRESS "MICROTRON"
TELEPHONE:- 3-430181-6 3-893363, 3-892423

FAX: 3-410321