

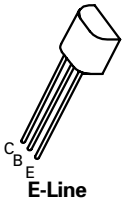
NPN SILICON PLANAR RF TRANSISTOR

ISSUE 2 – MARCH 94

FEATURES

- * High f_T , 1.3GHz
- * Low noise < 5dB at 500MHz
- * Power output at 500MHz >175mW

ZTX325



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Mean Collector Current (Averaged over 100 μ s)	I_{AV}	25	mA
Collector Current	I_{CM}	50	mA
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	350	mW
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +200	$^{\circ}C$

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	15			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	I_{CBO}			10	nA	$V_{CB}=15V, I_E=0$
Emitter Cut-Off Current	I_{CES}			10	μA	$V_{CE}=15V, V_{BE}=0$
Static Forward Current Transfer Ratio	h_{FE}	25 20		150 125		$I_C=2mA, V_{CE}=1V^*$ $I_C=25mA, V_{CE}=1V^*$
Transition Frequency	f_T	1.0 1.3			GHz GHz	$I_C=2mA, V_{CE}=5V, f=400MHz$ $I_C=25mA, V_{CE}=5V, f=400MHz$
Capacitance, Collector Depletion Layer	C_{TC}			1.5	pF	$V_{CB}=10V, I_E=I_E=0, f=1MHz$
Capacitance, Emitter Depletion Layer	C_{TE}			2.0	pF	$VEB=0.5V, I_C=I_C=0, f=1MHz$
Feedback Capacitance	$-C_{re}$		0.85		pF	$V_{CE}=5V, I_C=2mA, f=1MHz$
Feedback Time Constant	$r_{bb}'C_{bc}'$	2.0		12	ps	$V_{CB}=5V, -I_E=2mA, f=10.7MHz$

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ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Noise Figure	N			5.0	dB	$f=500\text{MHz}$, $V_{CE}=5\text{V}$, $I_C=2\text{mA}$, $R_S=50\Omega$
Intermodulation Distortion	d_{im}		-53		dB	$I_C=14\text{mA}$, $V_{CE}=6\text{V}$, $f=217\text{MHz}$ $V_0=100\text{mV}$, $R_L=37.5\Omega$, $f_1=183\text{MHz}$, $f_2=200\text{MHz}$
Output Power (at $T_{case}=25^\circ\text{C}$)*	P_O	175			mW	$V_{CE}=13.5\text{V}$, $I_C=22.5\text{mA}$ $P_{in}=25\text{mW}$, $f=500\text{MHz}$

*It is essential that care be taken to reduce steady state current when no h.f. signal is applied.

TYPICAL CHARACTERISTICS

