

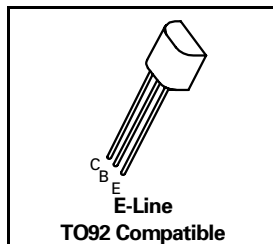
# NPN SILICON PLANAR RF TRANSISTOR

## ZTX325

ISSUE 2 – MARCH 94

### FEATURES

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



### 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 $\mu$ 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	$\mu A$	$V_{CE}=15V, V_{BE}=0$
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	$V_{EB}=0.5V, I_C=I_C=0, f=1MHz$
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

