

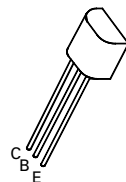
# NPN SILICON PLANAR HIGH SPEED SWITCHING TRANSISTOR

## ZTX314

ISSUE 2 – MARCH 94

### FEATURES

- \* 15 Volt  $V_{CE0}$
- \*  $f_T=500$  MHz



**E-Line**  
**TO92 Compatible**

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	15	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Base Current	$I_B$	100	mA
Continuous Collector Current	$I_C$	500	mA
Power Dissipation at $T_{amb}=25^\circ\text{C}$	$P_{tot}$	300	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +175	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40		V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	15		V	$I_C=10\text{mA}, I_B=0^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5		V	$I_E=10\mu\text{A}, I_C=0$
Collector Cut-Off Current	$I_{CBO}$		200 30	nA $\mu\text{A}$	$V_{CB}=20\text{V}, I_E=0$ $V_{CB}=20\text{V}, I_E=0, T_{amb}=100^\circ\text{C}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		0.2 0.5	V V	$I_C=10\text{mA}, I_B=1\text{mA}^*$ $I_C=100\text{mA}, I_B=10\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	0.7	0.85 1.6	V	$I_C=10\text{mA}, I_B=1\text{mA}^*$ $I_C=100\text{mA}, I_B=10\text{mA}^*$
Static Forward Current Transfer Ratio	$h_{FE}$	40 40 30 20	120 120		$I_C=10\text{mA}, V_{CE}=1\text{V}^*$ $I_C=10\text{mA}, V_{CE}=0.35\text{V}^*$ $I_C=30\text{mA}, V_{CE}=1\text{V}^*$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$
Transition Frequency	$f_T$	500		MHz	$I_C=10\text{mA}, V_{CE}=10\text{V}$ $f=100\text{MHz}$
Output Capacitance	$C_{obo}$		4	pF	$V_{CB}=5\text{V}, f=1\text{MHz}$
Storage Time	$t_{stg}$		13	ns	$I_C=I_{B1}=I_{B2}=10\text{mA}$
Turn-on Time	$t_{on}$		12	ns	$I_C=10\text{mA}, I_{B1}=3\text{mA}$
Turn-off Time	$t_{off}$		18	ns	$I_C=10\text{mA}, I_{B1}=3\text{mA}, I_{B2}=1.5\text{mA}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.