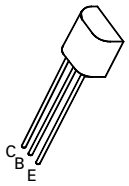
NPN SILICON PLANAR
HIGH SPEED SWITCHING TRANSISTOR

ZTX314

ISSUE 2 – MARCH 94

FEATURES

* 15 Volt V_{CEO}
* 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°C	P_{tot}	300	mW
Operating and Storage Temperature Range	T_j:T_{stg}	-55 to +175	°C

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

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

*Measured under pulsed conditions. Pulse width=300μs. Duty cycle ≤ 2%