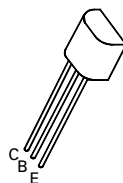


# NPN SILICON PLANAR SMALL SIGNAL TRANSISTOR

ISSUE 2 – MARCH 94

## ZTX300



**E-Line  
TO92 Compatible**

### ABSOLUTE MAXIMUM RATINGS.

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

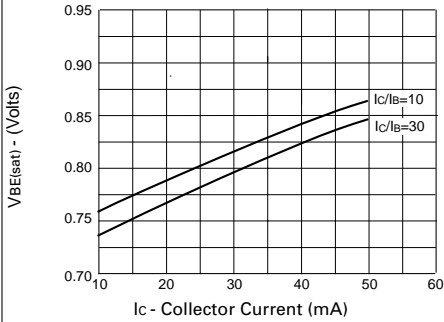
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	25			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	25			V	$I_C=5mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	$I_{CBO}$			0.2	$\mu A$	$V_{CB}=25V, I_E=0$
Emitter Cut-Off Current	$I_{EBO}$			0.2	$\mu A$	$V_{EB}=4V, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.35	V	$I_C=50mA, I_B=5mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	0.65		1.0	V	$I_C=10mA, I_B=1mA^*$
Static Forward Current Transfer Ratio	$h_{FE}$	50		300		$I_C=10mA, V_{CE}=6V^*$
Transition Frequency	$f_T$	150			MHz	$I_C=10mA, V_{CE}=6V$ $f=100MHz$
Output Capacitance	$C_{obo}$			6	pF	$V_{CB}=6V, I_E=0$ $f=1MHz$
Noise Figure	N		7		dB	$V_{CE}=6V, f=1KHz$ $R_S=1500\Omega, I_C=100\mu A$

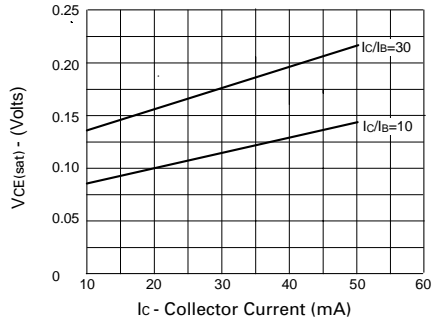
\*Measured under pulsed conditions. Pulse width=300 $\mu s$ . Duty cycle  $\leq 2\%$

# ZTX300

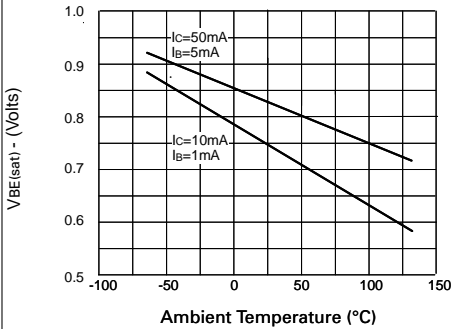
## TYPICAL CHARACTERISTICS



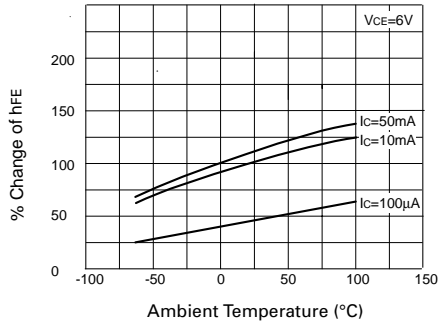
**$V_{BE(sat)}$  v  $I_C$**



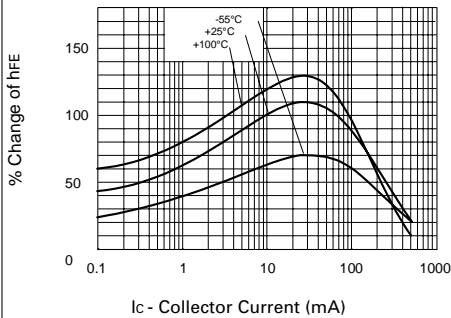
**$V_{CE(sat)}$  v  $I_C$**



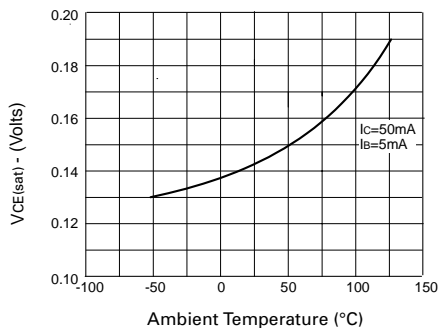
**$V_{BE(sat)}$  v Ambient Temperature**



**$h_{FE}$  v Ambient Temperature**



**$h_{FE}$  v  $I_C$**



**$V_{CE(sat)}$  v Ambient Temperature**