

NPN SILICON PLANAR LOW NOISE TRANSISTOR

ZTX384C

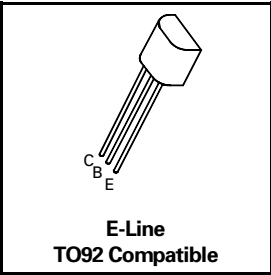
ISSUE 2 – MARCH 94

FEATURES

- * 30 Volt V_{CEO}
- * High Gain
- * Low Noise

APPLICATIONS

- * Audio circuits



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	6	V
Continuous Collector Current	I_C	200	mA
Power Dissipation	P_{tot}	350	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +175	°C

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	45			V	$I_C=10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			V	$I_C=2mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	$I_E=10\mu A, I_C=0$
Collector Cut-Off Current	I_{CBO}			15	nA	$V_{CB}=30V, I_E=0$
Emitter Cut-Off Current	I_{EBO}			15	nA	$V_{EB}=4V, I_C=0$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.25 0.6	V V	$I_C=10mA, I_B=0.5mA^*$ $I_C=100mA, I_B=5mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2	V	$I_C=100mA, I_B=5mA^*$
Base-Emitter Turn On Voltage	$V_{BE(on)}$	0.55		0.7	V	$I_C=2mA, V_{CE}=5V$
Static Forward Current Transfer Ratio	h_{FE}	100 250 130	400			$I_C=10\mu A, V_{CE}=5V$ $I_C=2mA, V_{CE}=5V$ $I_C=100mA, V_{CE}=5V^*$

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Output Capacitance	C_{obo}		2.5	5	pF	$V_{CB}=10\text{V}$, $f=1\text{MHz}$
Input Capacitance	C_{ibo}		11		pF	$V_{EB}=0.5\text{V}$, $f=1\text{MHz}$
Noise Figure (Wide Band)	N			4	dB	$I_C=200\mu\text{A}$, $V_{CE}=5\text{V}$ $f=30\text{Hz}$ to 15KHz at -3dB points, $R_S=2\text{K}\Omega$
Flicker Noise	N_f			0.135	μV	$I_C=200\mu\text{A}$, $V_{CE}=5\text{V}$ $f=10\text{Hz}$ to 50Hz at -3dB points, $R_S=2\text{K}\Omega$
Small Signal Static Forward Current Transfer Ratio	h_{fe}	450		900		$I_C=2\text{mA}$, $V_{CE}=5\text{V}$, $f=1\text{kHz}$

*Measured under pulsed conditions. Pulse width=300 μs .Duty cyle $\leq 2\%$