NPN SILICON PLANAR LOW NOISE TRANSISTOR

ZTX384C

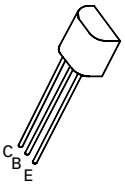
ISSUE 2 – MARCH 94

FEATURES

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

APPLICATIONS

* Audio circuits



E-Line
TO92 Compatible

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°C unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	45			V	I_C=10μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	30			V	IC=2mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	6			V	I_E=10μA, 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	IC=2mA, V_{CE}=5V
Static Forward Current Transfer Ratio	h_{FE}	100 250 130	400			I_C=10μA, V_{CE}=5V I_C=2mA, V_{CE}=5V I_C=100mA, V_{CE}=5V*

ZTX384C

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

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

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