

ZTX696B

NPN SILICON PLANAR MEDIUM POWER
HIGH GAIN TRANSISTOR

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ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f _T	70			MHz	I _C =50mA, V _{CE} =5V f=50MHz
Input Capacitance	C _{ibo}		200		pF	V _{EB} =0.5V, f=1MHz
Output Capacitance	C _{obo}		6		pF	V _{CE} =10V, f=1MHz
Switching Times	t _{on} t _{off}		80 4400		ns	I _C =100mA, I _B =10mA I _{B2} =10mA, V _{CE} =50V

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

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient _{T₁} Junction to Ambient _{T₂} Junction to Case	R _{th(j-amb)1} R _{th(j-amb)2} † R _{th(j-case)}	175 116 70	°C/W °C/W °C/W

† Device mounted on P.C.B. with copper equal to 1 sq. Inch minimum.

FEATURES

- * 180 Volt V_{CEO}
 - * Gain of 500 at I_C=100mA
 - * Very low saturation voltage
- APPLICATIONS
- * Darlington replacement
 - * Battery powered circuits
 - * Motor drivers
 - * Relay / solenoid drivers

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V _{CBO}	180	V
Collector-Emitter Voltage	V _{CEO}	180	V
Emitter-Base Voltage	V _{EB0}	5	V
Peak Pulse Current	I _{CM}	1	A
Continuous Collector Current	I _C	0.5	A
Practical Power Dissipation *	P _{Totp}	1.5	W
Power Dissipation at T _{amb} =25°C derate above 25°C	P _{Tot}	1 5.7	W mW/°C
Operating and Storage Temperature Range	T _J ; T _{sg}	-55 to +200	°C

* The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 1 inch square minimum

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	V _{(BR)CBO}	180			V	I _C =100µA
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	180			V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100µA
Collector Cut-Off Current	I _{CBO}			0.1	µA	V _{CB} =145V
Emitter Cut-Off Current	I _{EBO}			0.1	µA	V _{EB} =4V
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.2 0.2 0.25	V V V	I _C =50mA, I _B =0.5mA* I _C =100mA, I _B =2mA* I _C =200mA, I _B =5mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}			0.9	V	I _C =200mA, I _B =5mA*
Base-Emitter Turn-On Voltage	V _{BE(on)}			0.9	V	I _C =200mA, V _{CE} =5V*
Static Forward Current Transfer Ratio	h _{FE}	500 150				I _C =100mA, V _{CE} =5V* I _C =200mA, V _{CE} =5V*

TYPICAL CHARACTERISTICS

