

ZTX704
ZTX705

PNP SILICON PLANAR MEDIUM POWER
DARLINGTON TRANSISTORS

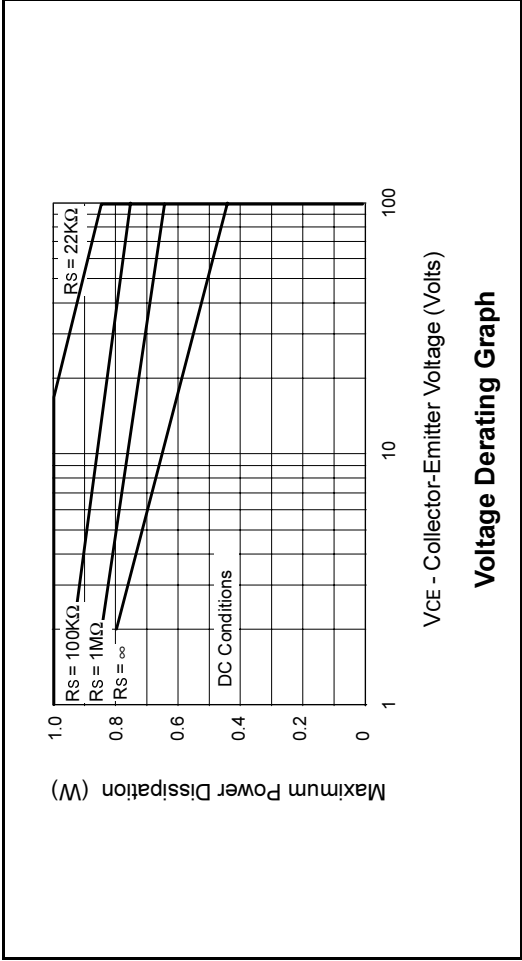
ISSUE 3 – MAY 94

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

PARAMETER	SYMBOL	ZTX704		ZTX705		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Static Forward Current Transfer Ratio	h _{FE}	3K		3K			I _C =-10mA, V _{CE} =-5V*
		3K		3K			I _C =-100mA, V _{CE} =-5V*
		3K	30K	3K	30K		I _C =-1A, V _{CE} =-5V*
		2K		2K			I _C =-2A, V _{CE} =-5V*
Transition Frequency	f _T	160 Typical		160 Typical		MHz	I _C =-100mA, V _{CE} =-10V f=20MHz
Input Capacitance	C _{ibo}	90 Typical		90 Typical		pF	V _{EB} =-0.5V, f=1MHz
Output Capacitance	C _{obo}	15 Typical		15 Typical		pF	V _{CE} =-10V, f=1MHz
Switching Times	t _{on}	0.6 Typical		0.6 Typical		μs	I _C =-0.5A, V _{CE} =-10V I _{B1} =I _{B2} =-0.5mA
	t _{off}	0.8 Typical		0.8 Typical		μs	

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



The maximum permissible operational temperature can be obtained from this graph using the following equation

$$T_{amb(max)} = \frac{Power(max) - Power(act)}{0.0057} + 25^{\circ}C$$

T_{amb(max)} = Maximum operating ambient temperature

Power(max) = Maximum power dissipation figure, obtained from the above graph for a given V_{CE} and source resistance (R_S)

Power(actual)= Actual power dissipation in users circuit

FEATURES

- * 120 Volt V_{CEO}
 - * 1 Amp continuous current
 - * Gain of 3K at I_C=1 Amp
 - * P_{tot}=1 Watt
- APPLICATIONS
- * Lamp, solenoid and relay drivers

ABSOLUTE MAXIMUM RATINGS.

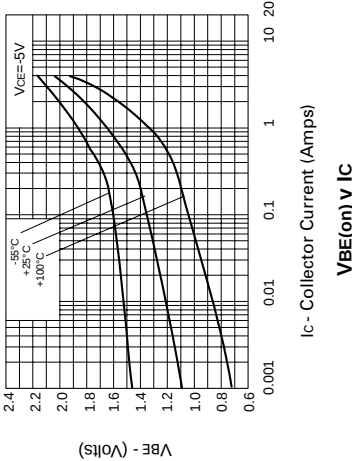
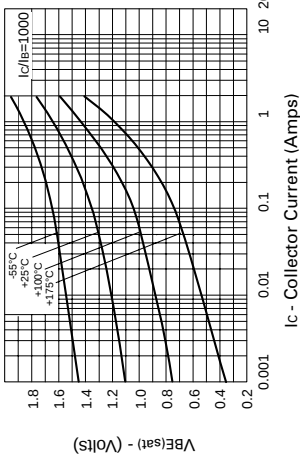
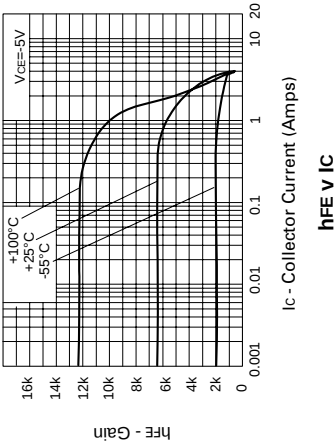
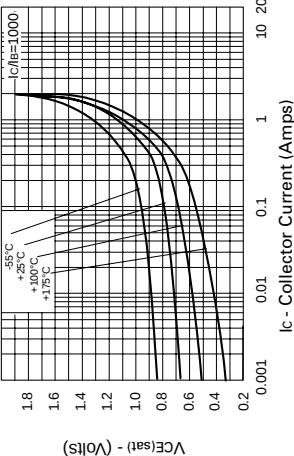
PARAMETER	SYMBOL	ZTX704	ZTX705	UNIT
Collector-Base Voltage	V _{CBO}	-120	-140	V
Collector-Emitter Voltage	V _{CEO}	-100	-120	V
Emitter-Base Voltage	V _{EB0}	-10	-10	V
Peak Pulse Current	I _{CM}	-4	-4	A
Continuous Collector Current	I _C	-1	-1	A
Power Dissipation at T _{amb} = 25°C derate above 25°C	P _{tot}	1	1	W
Operating and Storage Temperature Range	T _J ; T _{stg}	-55 to +200	-55 to +200	°C

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

PARAMETER	SYMBOL	ZTX704		ZTX705		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	V _{(BR)CBO}	-120		-140		V	I _C =-100μA
Collector-Emitter Breakdown Voltage	V _{CEO(SUS)}	-100		-120		V	I _C =-10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	-10		-10		V	I _E =-100μA
Collector Cut-Off Current	I _{CBO}		-0.1			μA	V _{CB} =-100V
			-10			μA	V _{CB} =-120V
					-0.1	μA	V _{CB} =-100V, T _{amb} =100°C
					-10	μA	V _{CB} =-120V, T _{amb} =100°C
Collector Cut-Off Current	I _{CES}		-10		-10	μA	V _{CES} =-80V
Emitter Cut-Off Current	I _{EBO}		-0.1		-0.1	μA	V _{EB} =-8V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	-1.3		-1.3		V	I _C =-1A, I _B =-1mA*
		-2.5		-2.5		V	I _C =-2A, I _B =-2mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}	-1.8		-1.8		V	I _C =-1A, I _B =-10mA*
Base-Emitter Turn-On Voltage	V _{BE(on)}		-1.7		-1.7	V	I _C =-1A, V _{CE} =-5V*

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TYPICAL CHARACTERISTICS



$V_{BE(sat)}$ v I_C

$V_{BE(on)}$ v I_C

