



THE DATASHEET OF ZTX601STZ



ZTX600 ZTX601

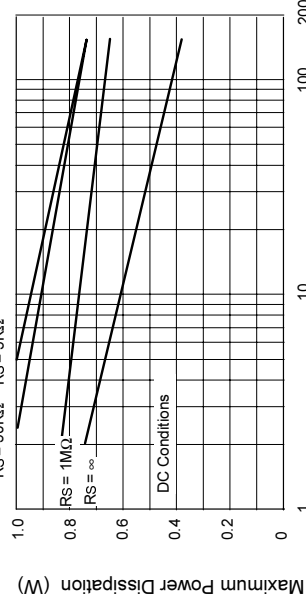
NPN SILICON PLANAR ME DARLINGTON TRANSISTOR

ISSUE 2 – JUNE 94

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

PARAMETER	SYMBOL	ZTX600		ZTX601		UNIT	CONDITIONS.		
		MIN.	TYP.	MAX.	MIN.			TYP.	MAX.
Static Forward Current Transfer Ratio	h _{FE}	1K		100K			I _C =50mA, V _{CE} =10V*		
		2K					I _C =0.5A, V _{CE} =10V*		
		1K					100K	I _C =1A, V _{CE} =10V*	
Group A		1K	2K	20K	2K		I _C =50mA, V _{CE} =10V*		
		2K	5K		5K		I _C =0.5A, V _{CE} =10V*		
		1K	3K		3K		20K	I _C =1A, V _{CE} =10V*	
Group B		5K	10K	100K	10K		I _C =50mA, V _{CE} =10V*		
		10K	20K		20K		100K	I _C =0.5A, V _{CE} =10V*	
		5K	10K		5K		10K	I _C =1A, V _{CE} =10V*	
Transition Frequency	f _T	150	250		150	250	MHz	I _C =100mA, V _{CE} =10V, f=20MHz	
Input Capacitance	C _{ibo}		60	90		60	90	pF	V _{EB} =0.5V, f=1MHz
Output Capacitance	C _{obo}		10	15		10	15	pF	V _{CE} =10V, f=1MHz
Switching Times	t _{on}		0.75			0.75		μs	I _C =0.5A, V _{CE} =10V I _B =I _{B2} =0.5mA
	t _{off}		2.2			2.2		μs	

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



V_{CE} - Collector-Emitter Voltage (Volts)

Voltage Derating Graph

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

- * 160 Volt V_{CE0}
- * 1 Amp continuous current
- * Gain of 5K at I_C=1 Amp
- * P_{tot} = 1 Watt

ABSOLUTE MAXIMUM RATINGS

PARAMETER	
Collector-Base Voltage	
Collector-Emitter Voltage	
Emitter-Base Voltage	
Peak Pulse Current	
Continuous Collector Current	
Power Dissipation	at T _{amb} =25°C derate above 25°C
Operating and Storage Temperature Range	

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	ZTX600	
		MIN.	TYP.
Collector-Base Breakdown Voltage	V _{(BR)CBO}	160	
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	140	
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	10	
Collector Cut-Off Current	I _{CBO}		
Emitter Cut-Off Current	I _{EBO}		
Collector-Emitter Cut-Off Current	I _{CES}		
Collector-Emitter Saturation Voltage	V _{CE(sat)}	0.7	0.8
Base-Emitter Saturation Voltage	V _{BE(sat)}	1.1	
Base-Emitter Turn-On Voltage	V _{BE(on)}	1.1	

ZTX600 ZTX601

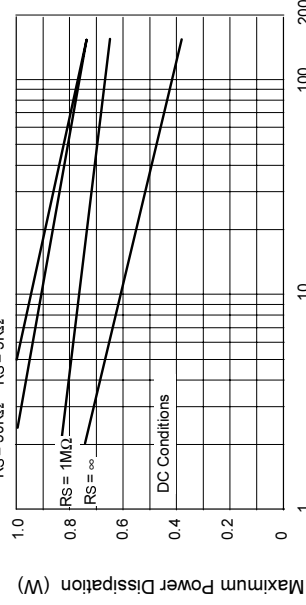
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Group B		5K	10K	100K	5K	10K	I _C =50mA, V _{CE} =10V*	
		10K	20K		10K	20K	I _C =0.5A, V _{CE} =10V*	
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ABSOLUTE MAXIMUM RATINGS

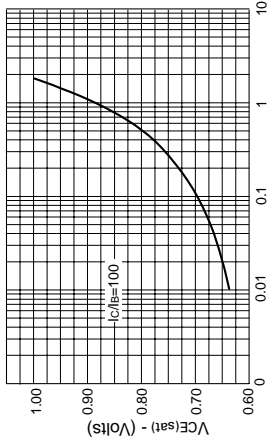
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ELECTRICAL CHARACTERISTICS

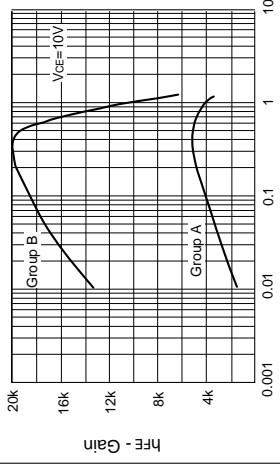
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		MIN.	TYP.	MIN.	TYP.
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Collector Cut-Off Current	I _{CBO}				
Emitter Cut-Off Current	I _{EBO}				
Collector-Emitter Cut-Off Current	I _{CES}				
Collector-Emitter Saturation Voltage	V _{CE(sat)}		0.7		0.8
Base-Emitter Saturation Voltage	V _{BE(sat)}		1.1		1.1
Base-Emitter Turn-On Voltage	V _{BE(on)}		1.1		1.1

ZTX600 ZTX601

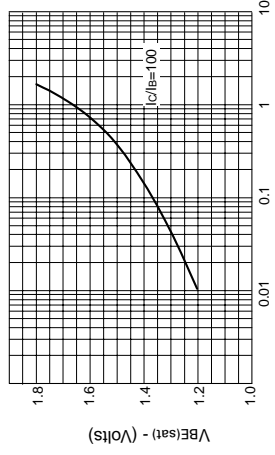
TYPICAL CHARACTERISTICS



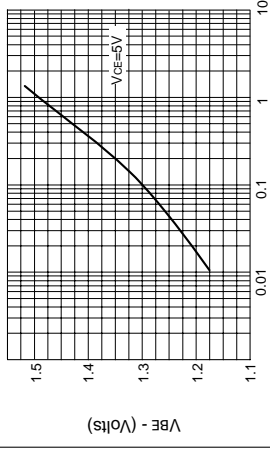
IC - Collector Current (Amps)
VCE(sat) v IC



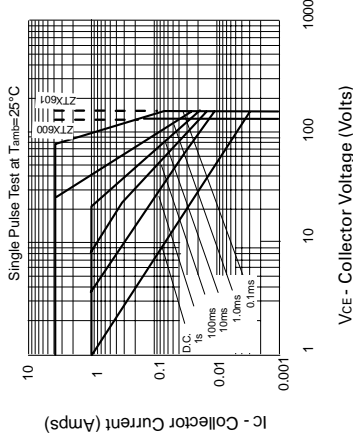
IC - Collector Current (Amps)
hFE v IC



IC - Collector Current (Amps)
VBE(sat) v IC



IC - Collector Current (Amps)
VBE(on) v IC



VCE - Collector Voltage (Volts)
Safe Operating Area

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