

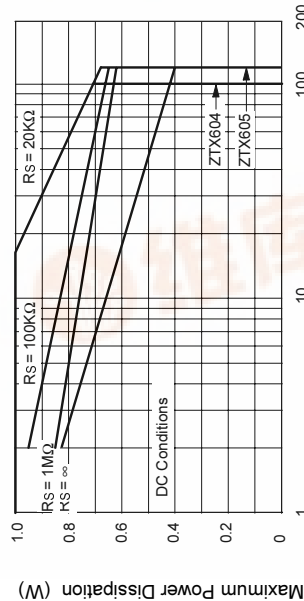


ZTX604 ZTX605

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

PARAMETER	SYMBOL	ZTX604		ZTX605		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Static Forward Current Transfer Ratio	h_{FE}	2K 5K 2K 0.5K	100K	2K 5K 2K 0.5K	100K		$I_C=50mA, V_{CE}=5V$ $I_C=500mA, V_{CE}=5V^*$ $I_C=1A, V_{CE}=5V^*$ $I_C=2A, V_{CE}=5V^*$
Transition Frequency	f_T	150		150		MHz	$I_C=100mA, V_{CE}=10V$ $f=20MHz$
Input Capacitance	C_{ibo}		90 Typical			pF	$V_{EB}=500mV, f=1MHz$
Output Capacitance	C_{obo}		15 Typical			pF	$V_{CB}=10V, f=1MHz$
Switching Times	t_{on}		0.5 Typical			μs	$I_C=500mA, V_{CE}=10V$ $I_B=I_{B2}=0.5mA$
	t_{off}		1.6 Typical			μs	

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



Voltage Derating Graph

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

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

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)

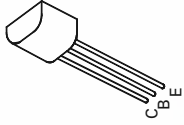
Power(actual)= Actual power dissipation in users circuit

NPN SILICON PLANAR MEDIUM POWER DARLINGTON TRANSISTORS

ISSUE 1 – MARCH 94

FEATURES

- * 120 Volt V_{CEO}
- * 1 Amp continuous current
- * Gain of 2K at I_C=1 Amp
- * P_{tot}= 1 Watt



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX604	ZTX605	UNIT
Collector-Base Voltage	V _{CB0}	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	5.7	W mW/°C
Operating and Storage Temperature Range	T _J ; T _{stg}	-55 to +200		°C

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PARAMETER	SYMBOL	ZTX604		ZTX605		UNIT	CONDITIONS.
		MIN.	MAX.	MIN.	MAX.		
Collector-Base Breakdown Voltage	V _{(BR)CBO}	120		140		V	I _C =100 μ A
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	100		120		V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	10		10		V	I _E =100 μ A
Collector Cut-Off Current	I _{CBO}	0.01	10	0.01	10	μ A	V _{CB} =100V
						μ A	V _{CB} =120V
						μ A	V _{CB} =100V, T _{amb} =100°C
						μ A	V _{CB} =120V, T _{amb} =100°C
Emitter Cut-Off Current	I _{EBO}	0.1		0.1		μ A	V _{EB} =8V
Collector-Emitter Cut-Off Current	I _{CES}	10		10		μ A	V _{CE} =100V V _{CE} =120V
Collector-Emitter Saturation Voltage	V _{CE(sat)}	1.0 1.5	1.8	1.0 1.5	1.8	V	I _C =250mA, I _B =0.25mA*
						V	I _C =1A, I _B =1mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}	1.8		1.8		V	I _C =1A, I _B =1mA*
Base-Emitter Turn-On Voltage	V _{BE(on)}	1.7		1.7		V	I _C =1A, V _{CE} =5V*

ZTX604
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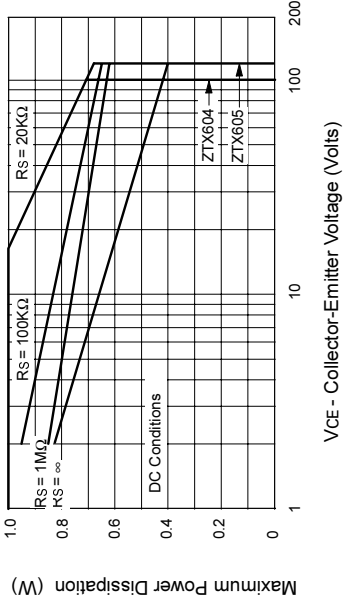
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Transition Frequency	f _T	150		150		MHz	I _C =100mA, V _{CE} =10V f=20MHz
Input Capacitance	C _{ibo}	90 Typical				pF	V _{EB} =500mV, f=1MHz
Output Capacitance	C _{obo}	15 Typical				pF	V _{CE} =10V, f=1MHz
Switching Times	t _{on}	0.5 Typical				μs	I _C =500mA, V _{CE} =10V I _B =I _E =0.5mA
	t _{off}	1.6 Typical				μs	

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



Voltage Derating Graph

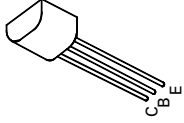
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Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	100		120		V	I _C =10mA*
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	10		10		V	I _E =100μA
Collector Cut-Off Current	I _{CBO}		0.01		0.01	μA	V _{CB} =100V V _{CB} =120V V _{CB} =100V, T _{amb} =100°C V _{CB} =120V, T _{amb} =100°C
Emitter Cut-Off Current	I _{EBO}		0.1		0.1	μA	V _{EB} =8V
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Collector-Emitter Saturation Voltage	V _{CE(sat)}	1.0	1.5	1.0	1.5	V	I _C =250mA, I _B =0.25mA*
Base-Emitter Saturation Voltage	V _{BE(sat)}		1.8		1.8	V	I _C =1A, I _B =1mA*
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

