



**ZTX600  
ZTX601**

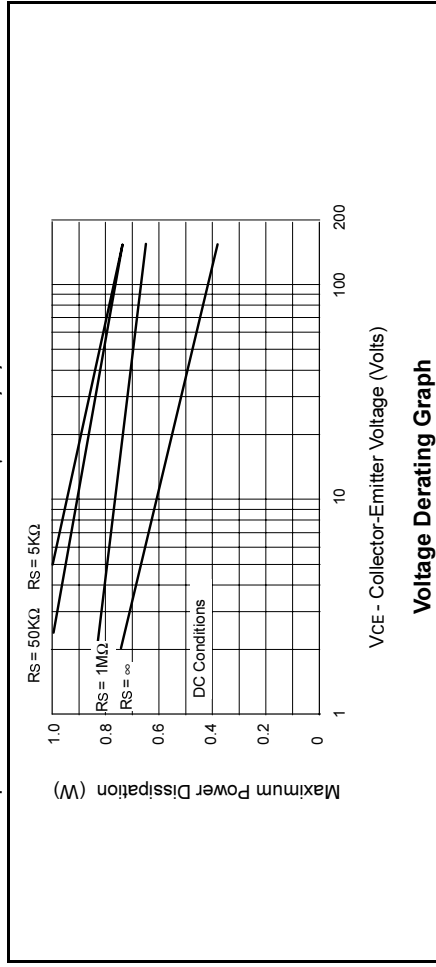
**NPN SILICON PLANAR MEDIUM POWER  
DARLINGTON TRANSISTORS**

**ZTX600  
ZTX601**

**ELECTRICAL CHARACTERISTICS (at T<sub>amb</sub> = 25° C unless otherwise stated).**

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

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

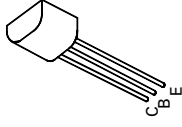
T<sub>amb(max)</sub> = Maximum operating ambient temperature

Power(max) = Maximum power dissipation figure, obtained from the above graph for a given V<sub>CE</sub> and source resistance (R<sub>S</sub>)

Power(actual) = Actual power dissipation in users circuit

**FEATURES**

- \* 160 Volt V<sub>CEO</sub>
- \* 1 Amp continuous current
- \* Gain of 5K at I<sub>C</sub>=1 Amp
- \* P<sub>tot</sub>= 1 Watt



**E-Line  
TO92 Compatible**

**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	ZTX600	ZTX601	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	160	180	V
Collector-Emitter Voltage	V <sub>CEO</sub>	140	160	V
Emitter-Base Voltage	V <sub>EBO</sub>	10	10	V
Peak Pulse Current	I <sub>CM</sub>	4	4	A
Continuous Collector Current	I <sub>C</sub>	1	1	A
Power Dissipation at T <sub>amb</sub> =25°C derate above 25°C	P <sub>tot</sub>	1	1	W
Operating and Storage Temperature Range	T <sub>J</sub> ; T <sub>stg</sub>	-55 to +200		°C

**ELECTRICAL CHARACTERISTICS (at T<sub>amb</sub> = 25° C unless otherwise stated).**

PARAMETER	SYMBOL	ZTX600			ZTX601			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	160			180			V	I <sub>C</sub> =100μA
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	140			160			V	I <sub>C</sub> =10mA*
Emitter-Base Breakdown Voltage	V <sub>(BRE)BO</sub>	10			10			V	I <sub>E</sub> =100μA
Collector Cut-Off Current	I <sub>CBO</sub>			0.01				μA	V <sub>CB</sub> =140V V <sub>CE</sub> =160V
Emitter Cut-Off Current	I <sub>EBO</sub>			0.01				μA	V <sub>CB</sub> =140V, T <sub>s</sub> =100°C V <sub>CE</sub> =160V, T <sub>a</sub> =100°C
Collector-Emitter Cut-Off Current	I <sub>CES</sub>			10				μA	V <sub>CE</sub> =140V V <sub>CE</sub> =160V
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	0.75	0.85	1.1	0.75	0.85	1.1	V	I <sub>C</sub> =0.5A, I <sub>B</sub> =5mA*
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	1.7	1.9	1.9	1.7	1.9	1.9	V	I <sub>C</sub> =1A, I <sub>B</sub> =10mA*
Base-Emitter Turn-On Voltage	V <sub>BE(on)</sub>	1.5	1.7	1.7	1.5	1.7	1.7	V	I <sub>C</sub> =1A, V <sub>CE</sub> =5V*

OBSOLETE

ZTX600  
ZTX601

### TYPICAL CHARACTERISTICS

