

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Diodes Incorporated](#)
[ZTX651](#)

For any questions, you can email us directly:

sales@integrated-circuit.com

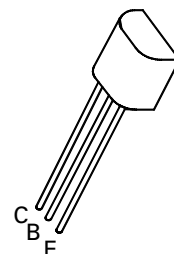
NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

ISSUE 2 – JULY 94

**ZTX650
ZTX651**

FEATURES

- * 60 Volt V_{CEO}
- * 2 Amp continuous current
- * Low saturation voltage
- * $P_{tot}=1$ Watt



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	ZTX650	ZTX651	UNIT
Collector-Base Voltage	V_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CEO}	45	60	V
Emitter-Base Voltage	V_{EBO}	5		V
Peak Pulse Current	I_{CM}	6		A
Continuous Collector Current	I_C	2		A
Power Dissipation at $T_{amb}=25^{\circ}C$ derate above $25^{\circ}C$	P_{tot}	1 5.7		W mW/ $^{\circ}C$
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +200		$^{\circ}C$

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	ZTX650			ZTX651			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60			80			V	$I_C=100\mu A$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			60			V	$I_C=10mA^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			5			V	$I_E=100\mu A$
Collector Cut-Off Current	I_{CBO}			0.1 10			0.1 10	μA μA μA	$V_{CB}=45V$ $V_{CB}=60V$ $V_{CB}=45V, T_{amb}=100^{\circ}C$ $V_{CB}=60V, T_{amb}=100^{\circ}C$
Emitter Cut-Off Current	I_{EBO}			0.1			0.1	μA	$V_{EB}=4V$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$		0.12 0.23	0.3 0.5		0.12 0.23	0.3 0.5	V V	$I_C=1A, I_B=100mA^*$ $I_C=2A, I_B=200mA^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		0.9	1.25		0.9	1.25	V	$I_C=1A, I_B=100mA^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$		0.8	1		0.8	1	V	$I_C=1A, V_{CE}=2V^*$

ZTX650 ZTX651

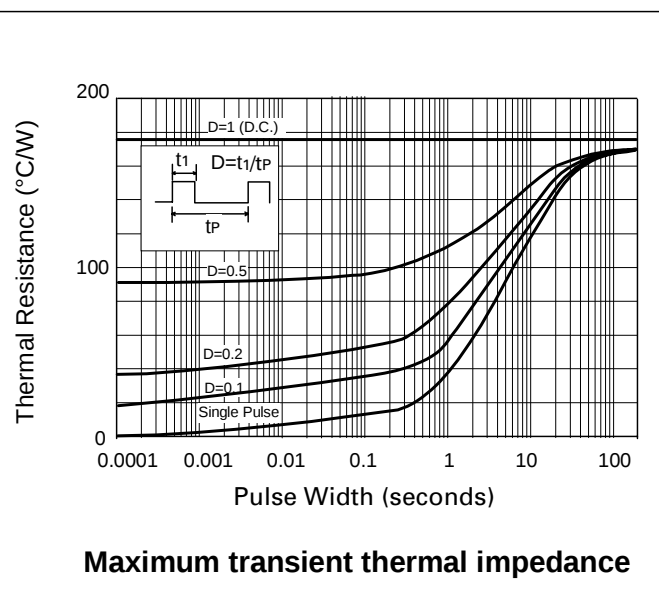
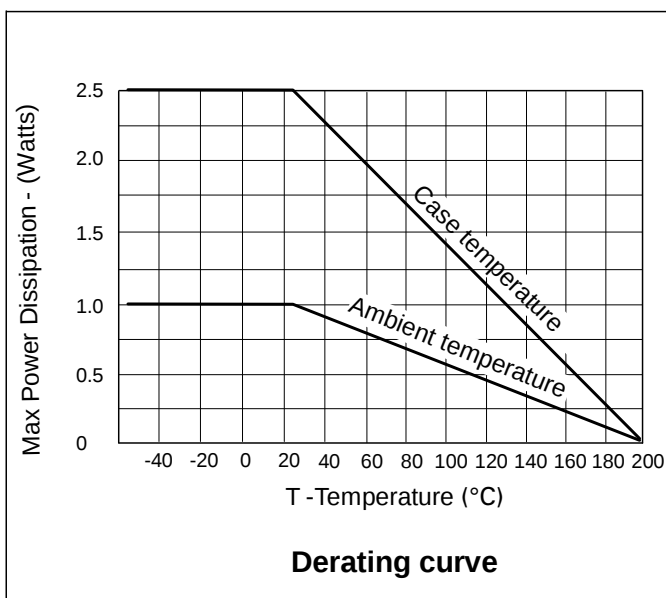
PARAMETER	SYMBOL	ZTX650			ZTX651			UNIT	CONDITIONS.
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Transition Frequency	f_T	140	175		140	175		MHz	$I_C=100mA$, $V_{CE}=5V$ $f=100MHz$
Switching Times	t_{on}		45			45		ns	$I_C=500mA$, $V_{CC}=10V$ $I_{B1}=I_{B2}=50mA$
	t_{off}		800			800		ns	
Output Capacitance	C_{obo}			30			30	pF	$V_{CB}=10V$ $f=1MHz$

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

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient ₁	$R_{th(j-amb)1}$	175	$^{\circ}C/W$
Junction to Ambient ₂	$R_{th(j-amb)2}$	116	$^{\circ}C/W$
Junction to Case	$R_{th(j-case)}$	70	$^{\circ}C/W$

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



ZTX650 ZTX651

TYPICAL CHARACTERISTICS

