



**THE DATASHEET OF
ZTX792ASTZ**



ZTX792A

PNP SILICON PLANAR ME HIGH GAIN TRANSISTOR

ISSUE 2 - APRIL 94

FEATURES

- * 70 Volt V_{CE0}
- * Gain of 400 at $I_C=3$ Amps
- * Very low saturation voltage

APPLICATIONS

- * Darlington replacement
- * Flash gun converters
- * Battery powered circuits
- * Motor drivers

ABSOLUTE MAXIMUM RATINGS

PARAMETER	
Collector-Base Voltage	
Collector-Emitter Voltage	
Emitter-Base Voltage	
Peak Pulse Current	
Continuous Collector Current	
Practical Power Dissipation*	
Power Dissipation	at $T_{amb}=25^{\circ}C$ derate above $25^{\circ}C$
Operating and Storage Temperature Range	

*The power which can be dissipated as P.C.B. with copper equal to 1 inch square

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$
Collector Cut-Off Current	I_{CBO}
Emitter Cut-Off Current	I_{EBO}
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$
Static Forward Current Transfer	h_{FE}

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

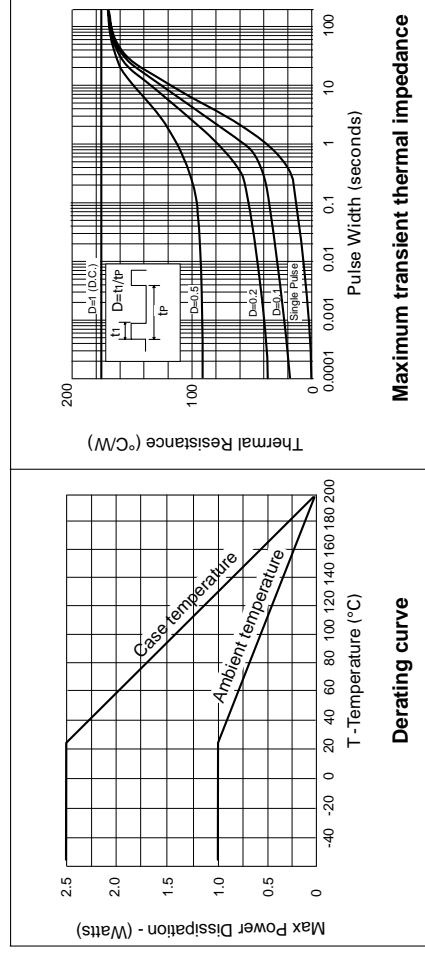
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	100			MHz	$I_C=50mA, V_{CE}=5V$ $f=50MHz$
Input Capacitance	C_{ibo}		225		pF	$V_{EB}=0.5V, f=1MHz$
Output Capacitance	C_{obo}		22		pF	$V_{CB}=-10V, f=1MHz$
Switching Times	t_{on}		35		ns	$I_C=500mA, I_B=50mA$ $I_{B2}=50mA, V_{CC}=10V$
	t_{off}		750		ns	

*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 Junction to Ambient ₂ Junction to Case	$R_{th(j-amb)1}$	175	$^{\circ}C/W$
	$R_{th(j-amb)2}^{\dagger}$	116	$^{\circ}C/W$
	$R_{th(j-case)}$	70	$^{\circ}C/W$

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



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PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	100			MHz	$I_C=50\text{mA}$, $V_{CE}=5\text{V}$ $f=50\text{MHz}$
Input Capacitance	C_{ibo}		225		pF	$V_{EB}=0.5\text{V}$, $f=1\text{MHz}$
Output Capacitance	C_{obo}		22		pF	$V_{CB}=-10\text{V}$, $f=1\text{MHz}$
Switching Times	t_{on}		35		ns	$I_C=500\text{mA}$, $I_B=50\text{mA}$ $I_{BZ}=50\text{mA}$, $V_{CC}=10\text{V}$
	t_{off}		750		ns	

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

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

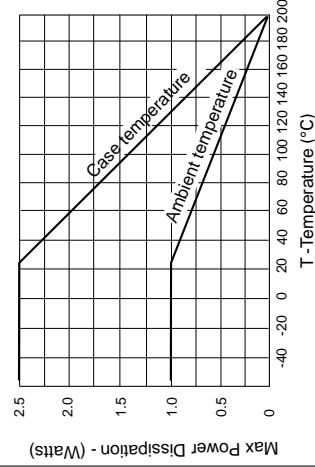
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	UNIT
Collector-Base Voltage	V_{CB0}	V
Collector-Emitter Voltage	V_{CE0}	V
Emitter-Base Voltage	V_{EB0}	V
Peak Pulse Current	I_{CP}	A
Continuous Collector Current	I_C	A
Practical Power Dissipation*	P_D	W
Power Dissipation at $T_{amb}=25^\circ\text{C}$ derate above 25°C	$P_{D(25^\circ\text{C})}$	W
Operating and Storage Temperature Range	T_{op}	$^\circ\text{C}$

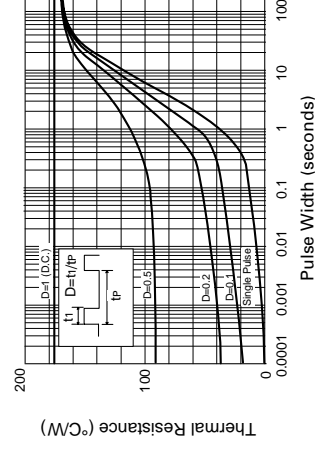
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ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	UNIT
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	V
Collector Cut-Off Current	I_{CBO}	μA
Emitter Cut-Off Current	I_{EBO}	μA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	V
Static Forward Current Transfer	h_{FE}	



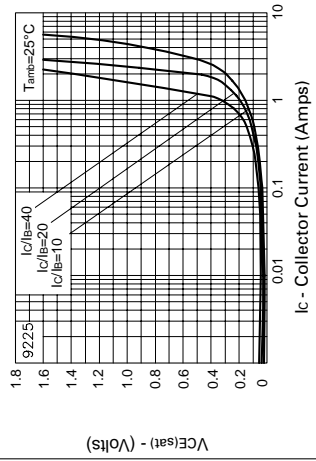
Derating curve



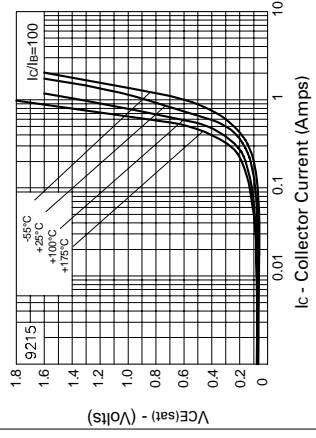
Maximum transient thermal impedance

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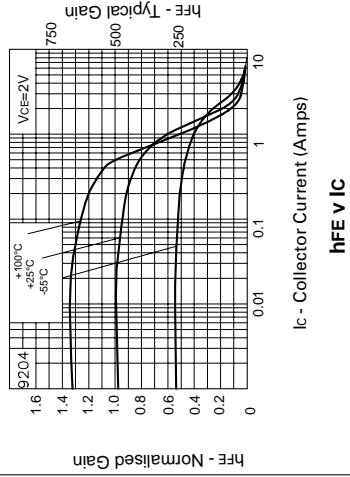
TYPICAL CHARACTERISTICS



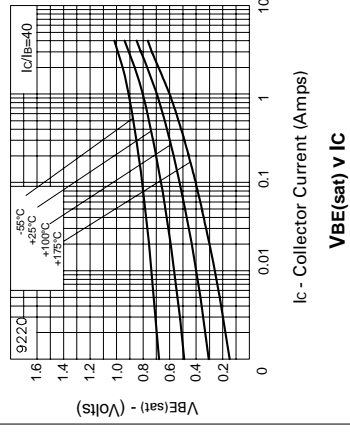
VCE(sat) v IC



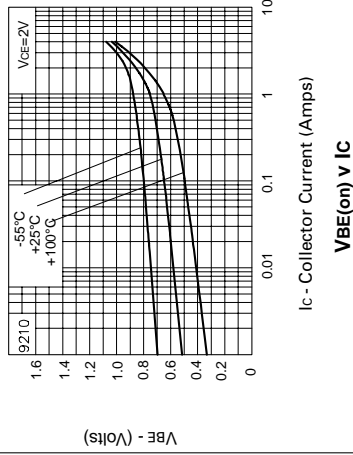
VCE(sat) v IC



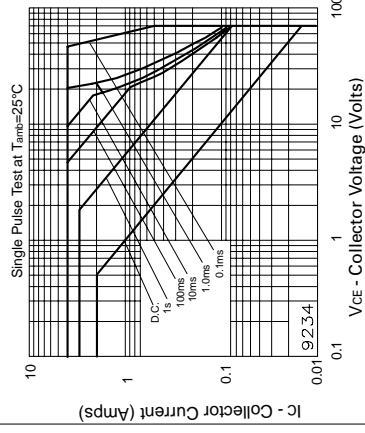
hFE v IC



VBE(sat) v IC



VBE(on) v IC



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- ✓ Shortage Management
- ✓ Alternative Solution
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