

ZTX694BSTOA Datasheet

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DiGi Electronics Part Number	ZTX694BSTOA-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	ZTX694BSTOA
Description	TRANS NPN 120V 0.5A E-LINE
Detailed Description	Bipolar (BJT) Transistor NPN 120 V 500 mA 130MHz 1 W Through Hole E-Line (TO-92 compatible)



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Purchase and inquiry

Manufacturer Product Number:

ZTX694BSTOA

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

120 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

1 W

Operating Temperature:

-55°C ~ 200°C (TJ)

Package / Case:

E-Line-3, Formed Leads

Base Product Number:

ZTX694B

Manufacturer:

Diodes Incorporated

Product Status:

Obsolete

Current - Collector (Ic) (Max):

500 mA

Vce Saturation (Max) @ Ib, Ic:

500mV @ 5mA, 400mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

400 @ 200mA, 2V

Frequency - Transition:

130MHz

Mounting Type:

Through Hole

Supplier Device Package:

E-Line (TO-92 compatible)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

NPN SILICON PLANAR MEDIUM POWER HIGH GAIN TRANSISTOR

ZTX694B

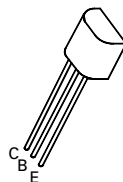
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FEATURES

- * 120 Volt V_{CE0}
- * Gain of 400 at $I_C=200\text{mA}$
- * Very low saturation voltage

APPLICATIONS

- * Darlington replacement
- * Relay / solenoid driver
- * Battery powered circuits
- * Motor drivers



**E-Line
T092 Compatible**

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	120	V
Emitter-Base Voltage	V_{EBO}	5	V
Peak Pulse Current	I_{CM}	1	A
Continuous Collector Current	I_C	0.5	A
Practical Power Dissipation*	P_{totp}	1.5	W
Power Dissipation $T_{amb}=25^\circ\text{C}$ derate above 25°C	P_{tot}	1 5.7	W mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +200	$^\circ\text{C}$

*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 1 inch square minimum

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	120			V	$I_C=100\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	120			V	$I_C=10\text{mA}^*$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=100\mu\text{A}$
Collector Cut-Off Current	I_{CBO}			0.1	μA	$V_{CB}=100\text{V}$
Emitter Cut-Off Current	I_{EBO}			0.1	μA	$V_{EB}=4\text{V}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.25 0.5	V	$I_C=100\text{mA}, I_B=0.5\text{mA}^*$ $I_C=400\text{mA}, I_B=5\text{mA}^*$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			0.9	V	$I_C=1\text{A}, I_B=10\text{mA}^*$
Base-Emitter Turn-On Voltage	$V_{BE(on)}$			0.9	V	$I_C=1\text{A}, V_{CE}=2\text{V}^*$
Static Forward Current Transfer Ratio	h_{FE}	500 400 150				$I_C=100\text{mA}, V_{CE}=2\text{V}^*$ $I_C=200\text{mA}, V_{CE}=2\text{V}^*$ $I_C=400\text{mA}, V_{CE}=2\text{V}^*$

ZTX694B5T0A Diodes Incorporated TRANS NPN 120V 0.5A E-LINE

ZTX694B

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

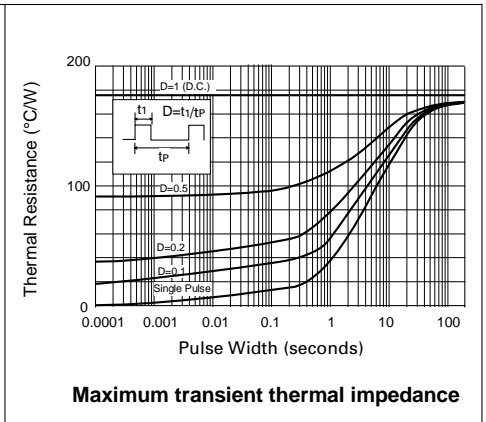
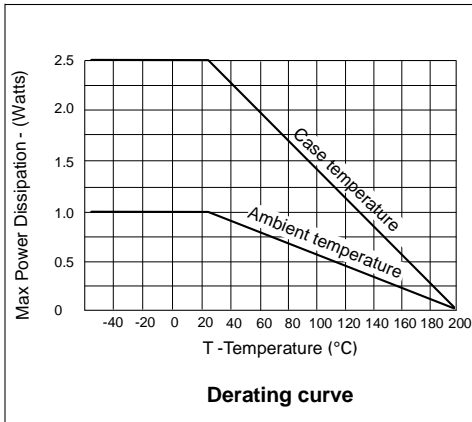
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Transition Frequency	f_T	130			MHz	$I_C=50\text{mA}$, $V_{CE}=5\text{V}$ $f=50\text{MHz}$
Input Capacitance	C_{ibo}		200		pF	$V_{EB}=0.5\text{V}$, $f=1\text{MHz}$
Output Capacitance	C_{obo}		9		pF	$V_{CB}=10\text{V}$, $f=1\text{MHz}$
Switching Times	t_{on} t_{off}		80 2900		ns ns	$I_C=100\text{mA}$, $I_{B1}=10\text{mA}$ $I_{B2}=10\text{mA}$, $V_{CC}=50\text{V}$

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

THERMAL CHARACTERISTICS

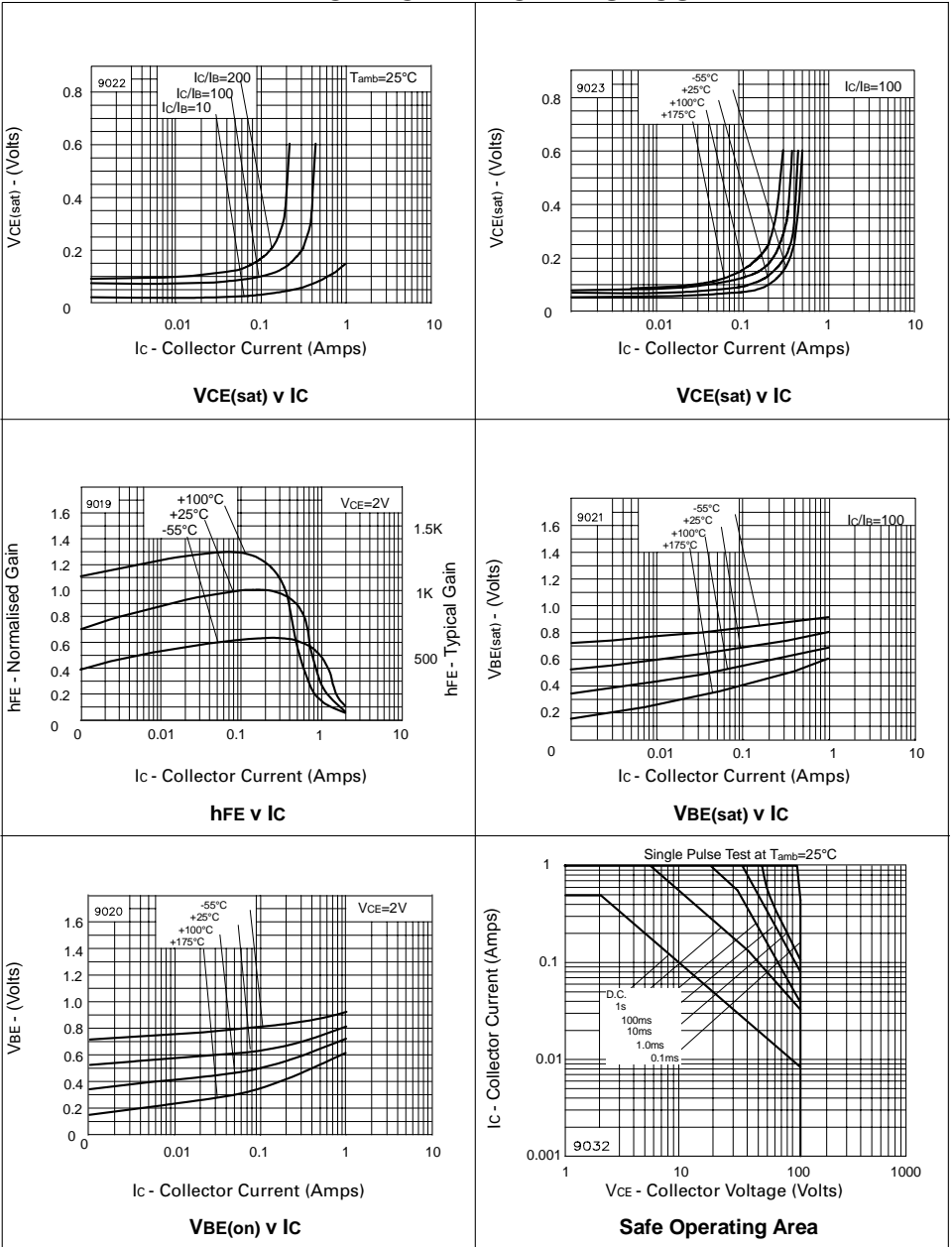
PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient ₁	$R_{th(j-amb)1}$	175	$^{\circ}\text{C/W}$
Junction to Ambient ₂	$R_{th(j-amb)2} \dagger$	116	$^{\circ}\text{C/W}$
Junction to Case	$R_{th(j-case)}$	70	$^{\circ}\text{C/W}$

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



ZTX694B

TYPICAL CHARACTERISTICS



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