ZXTP03200BZ

200V PNP LOW $V_{CE(sat)}$ TRANSISTOR IN SOT-89

Features

- BV_{CEO} > -200V
- BV_{ECO} > -2V
- Continuous current $I_{C(cont)}$ = 2A
- $V_{CE(sat}$ < -160mV @ -1A
- $R_{CE(sat)}$=130mΩ
- P_D = 2.4W
- 2 Amps continuous current
- Up to 5 Amps peak current
- Very low saturation voltage
- Enhanced switching performance

Mechanical Data

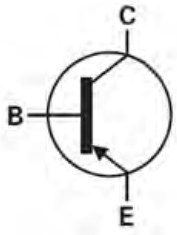
- Case: SOT-89
- UL Flammability Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish
- Weight: 0.052 grams (approximate)

Applications

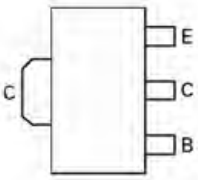
- DC-DC Convertors

SOT-89

Top View



Device symbol

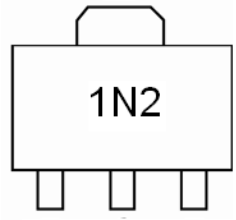


Pin Configuration

Ordering Information

Product	Marking	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTP03200BZTA	1N2	7	12	1000

Marking Information



1N2 = Product type Marking Code

Maximum Ratings @T_A = 25°C unless otherwise specified

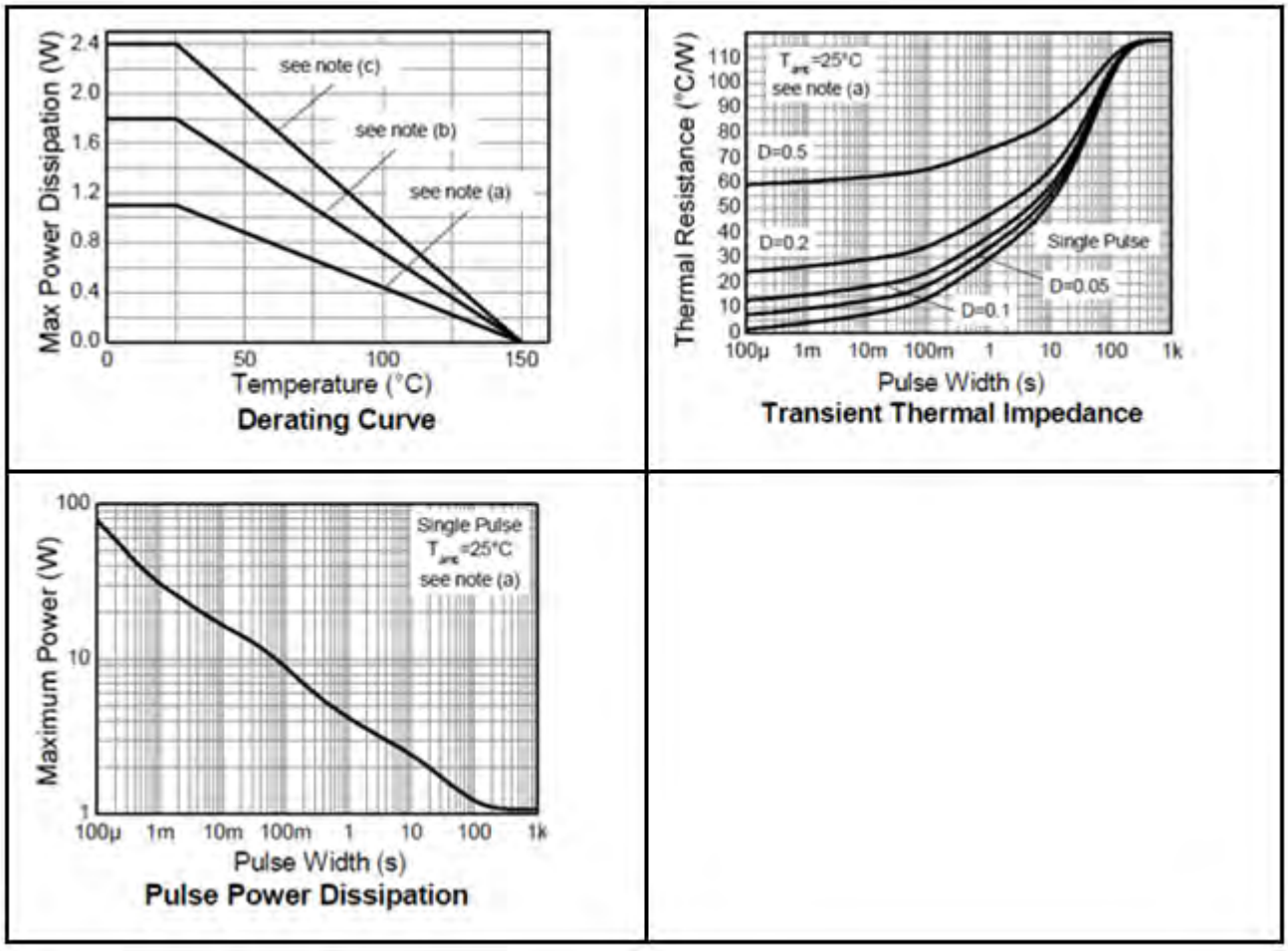
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-220	V
Collector-Emitter Voltage	V_{CEO}	-200	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current (Note a)	I_C	-2	A
Base Current	I_B	-1	A
Peak Pulse Current	I_{CM}	-5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation at T_A = 25°C (Note a) Linear derating factor	P_D	1.1 8.8	W mW /°C
Power Dissipation at T_A = 25°C (Note b) Linear derating factor	P_D	1.8 14.4	W mW /°C
Power Dissipation at T_A = 25°C (Note c) Linear derating factor	P_D	2.4 19.2	W mW /°C
Power Dissipation at T_A = 25°C (Note d) Linear derating factor	P_D	4.46 35.7	W mW /°C
Power Dissipation at T_A = 25°C (Note e) Linear derating factor	P_D	38.7 309.6	W mW /°C
Junction to Ambient (Note a)	$R_{\theta JA}$	117	°C/W
Junction to Ambient (Note b)	$R_{\theta JA}$	68	°C/W
Junction to Ambient (Note c)	$R_{\theta JA}$	51	°C/W
Junction to Ambient (Note d)	$R_{\theta JA}$	28	°C/W
Junction to Lead (Note e)	$R_{\theta JL}$	3.23	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes:
a. For a device surface mounted on 15mm X 15mm X 1.6mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions
b. Mounted on 25mm X 25mm X 1.6mm FR4 PCB with high coverage of single sided 1 oz copper, in still air conditions.
c. Mounted on 25mm X 25mm X 1.6mm FR4 PCB with high coverage of single sided 2 oz copper, in still air conditions.
d. As (c) above measured at t<5 seconds
e. Junction to lead from collector Tab. Typical

Thermal Characteristics and Derating information

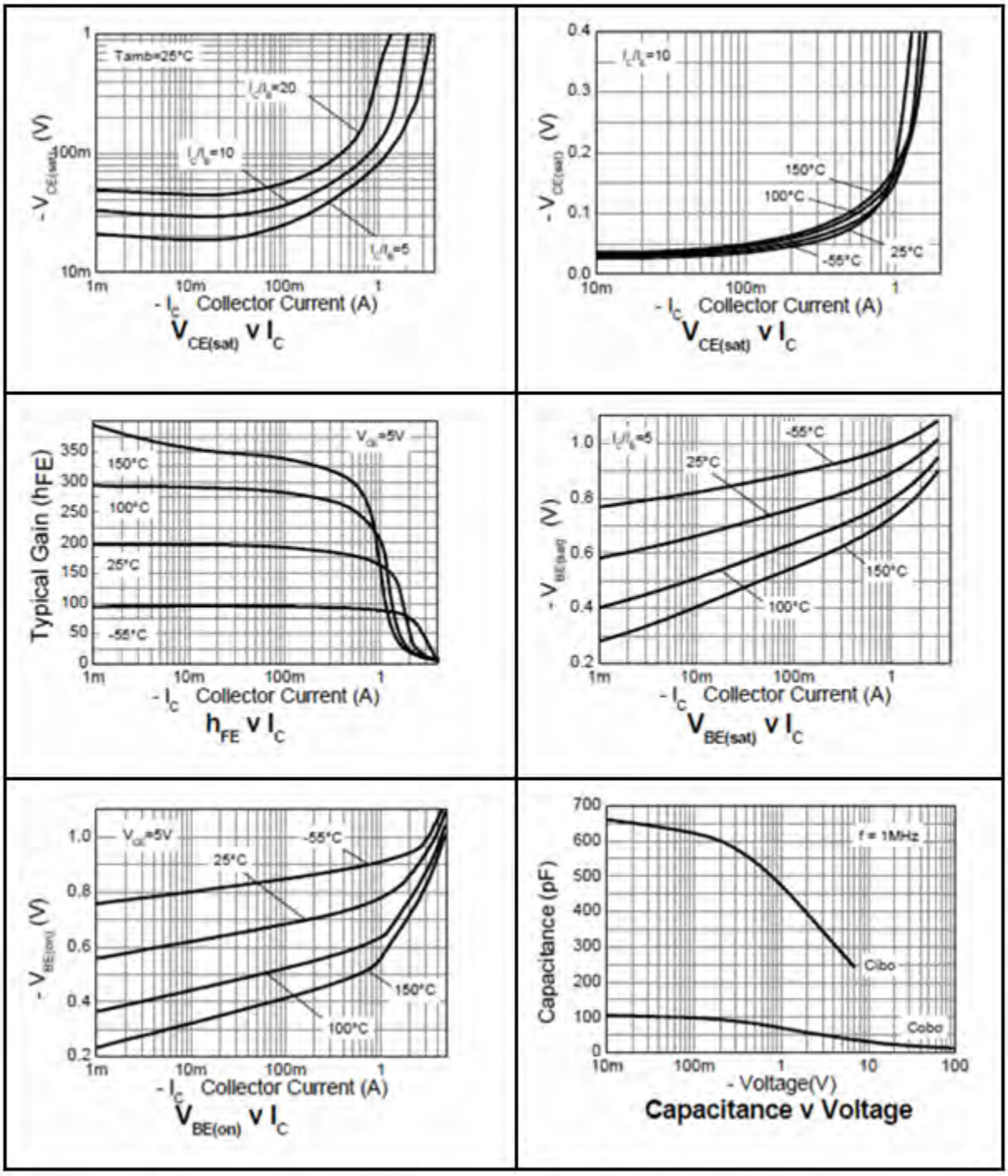


Electrical Characteristics @T_A = 25°C unless otherwise specified

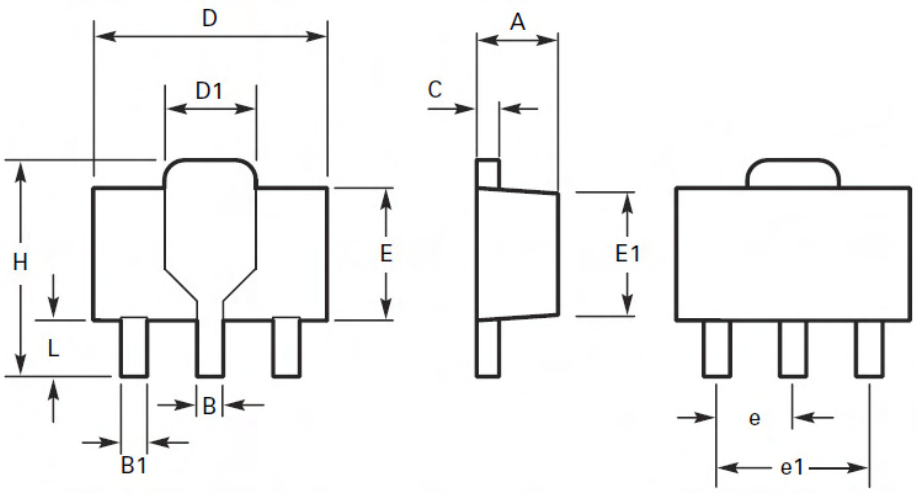
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-220	-245		V	I_C = -100µA
Collector-Emitter Breakdown Voltage	$V_{(BR)CER}$	-220	-245		V	I_C = -1µA, R_{BE} ≤ 1kΩ
Collector-Emitter Breakdown Voltage (Note f)	$V_{(BR)CEO}$	-220	-225		V	I_C = -10mA
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-7	-8.4		V	I_E = -100µA
Collector-Base Cutoff Current	I_{CBO}		<1 	-50 -0.5	nA µA	V_{CB} = -200V V_{CB} = -200V, T_{amb} = 100°C
Emitter Cutoff Current	I_{EBO}		<1	-10	nA	V_{EB} = -6V
Static Forward Current Transfer Ratio (Note f)	h_{FE}	100 100 20	195 179 50 5	300		I_C = -10mA, V_{CE} = -5V I_C = -1A, V_{CE} = -5V I_C = -2A, V_{CE} = -5V I_C = -5A, V_{CE} = -5V
Collector-Emitter Saturation Voltage (Note f)	$V_{CE(SAT)}$		-37 -120 -130 -160	-50 -155 -160 -260	mV mV mV mV	I_C = -100mA, I_B = -10mA I_C = -500mA, I_B = -25mA I_C = -1A, I_B = -100mA I_C = -2A, I_B = -400mA
Base-Emitter Saturation Voltage (Note f)	$V_{BE(sat)}$		-940	-1100	mV	I_C = -2A, I_B = -400mV
Base-Emitter Turn-On Voltage (Note f)	$V_{BE(ON)}$		-840	-1000	mV	I_C = -2A, V_{CE} = -5V
Output Capacitance (Note f)	C_{obo}		31		pF	V_{CB} = -10V. f = 1MHz
Transition Frequency	f_T		105		MHz	V_{CE} = -10V, I_C = -100mA f = 50MHz
Delay Time	t_d		21		ns	V_{CC} = -50V, I_C = -1A I_{B1} = -I_{B2} = -100mA
Rise Time	t_r		18		ns	
Storage Time	T_s		680		ns	
Fall Time	T_f		75		ns	

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

Typical Characteristics



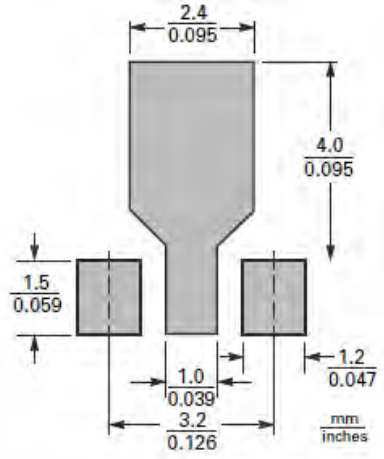
Package Outline Dimensions



DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	1.40	1.60	0.550	0.630	E	2.29	2.60	0.090	0.102
B	0.44	0.56	0.017	0.022	E1	2.13	2.29	0.084	0.090
B1	0.36	0.48	0.014	0.019	e	1.50 BSC		0.059 BSC	
C	0.35	0.44	0.014	0.017	e1	3.00 BSC		0.118 BSC	
D	4.40	4.60	0.173	0.181	H	3.94	4.25	0.155	0.167
D1	1.52	1.83	0.064	0.072	L	0.89	1.20	0.035	0.047

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

Suggested Pad Layout



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