ZXTP2006E6

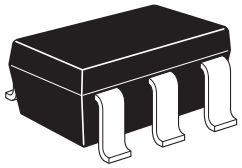
20V PNP LOW SAT MEDIUM POWER TRANSISTOR IN SOT23-6

SUMMARY

BV_{CEO} = -20V : R_{SAT} = 31mΩ; I_C = -3.5A

DESCRIPTION

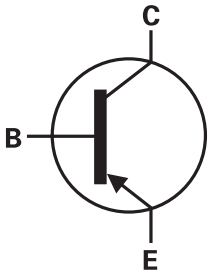
Packaged in the SOT23-6 outline this new low saturation 20V PNP transistor offers extremely low on state losses making it ideal for use in DC-DC circuits and various driving and power management functions.



SOT23-6

FEATURES

- 3.5 Amps continuous current
- Extremely low saturation voltage (-70mV max @ 1A/100mA)
- Up to 10 Amps peak current
- Very low saturation voltages



APPLICATIONS

- DC - DC converters
- Battery charging
- Power switches
- Motor control
- Power management functions

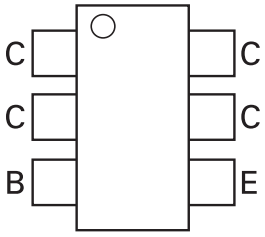
ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZXTP2006E6TA	7”	8mm embossed	3,000
ZXTP2006E6TC	13”	8mm embossed	10,000

DEVICE MARKING

52

PINOUT



TOP VIEW

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ABSOLUTE MAXIMUM RATINGS

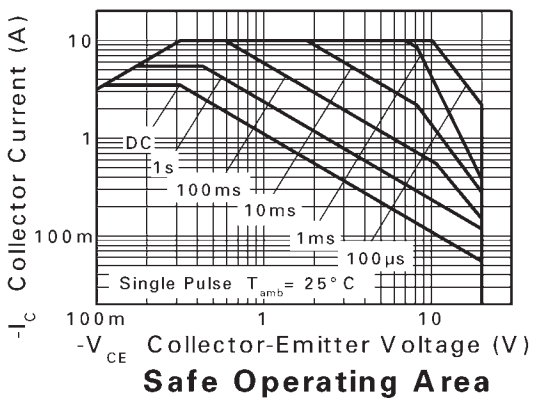
PARAMETER	SYMBOL	LIMIT	UNIT
Collector-base voltage	BV_{CBO}	-25	V
Collector-emitter voltage	BV_{CEO}	-20	V
Emitter-base voltage	BV_{EBO}	-7.5	V
Continuous collector current	I_C	-3.5	A
Peak pulse current	I_{CM}	-10	A
Power dissipation at T_A =25°C (a) Linear derating factor	P_D	1.1 8.8	W mW/°C
Power dissipation at T_A =25°C (b) Linear derating factor	P_D	1.7 13.6	W mW/°C

THERMAL RESISTANCE

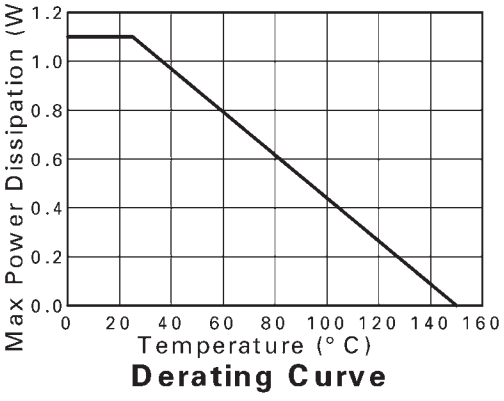
PARAMETER	SYMBOL	VALUE	UNIT
Junction to ambient (a)	$R_{\theta JA}$	113	°C/W
Junction to ambient (b)	$R_{\theta JC}$	73	°C/W

NOTES
(a) For a device surface mounted on 25mm x 25mm x 0.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
(b) As above measured at t<5 seconds.

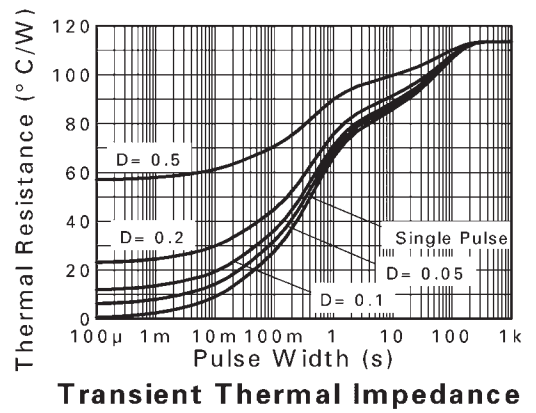
CHARACTERISTICS



Safe Operating Area



Derating Curve



Transient Thermal Impedance

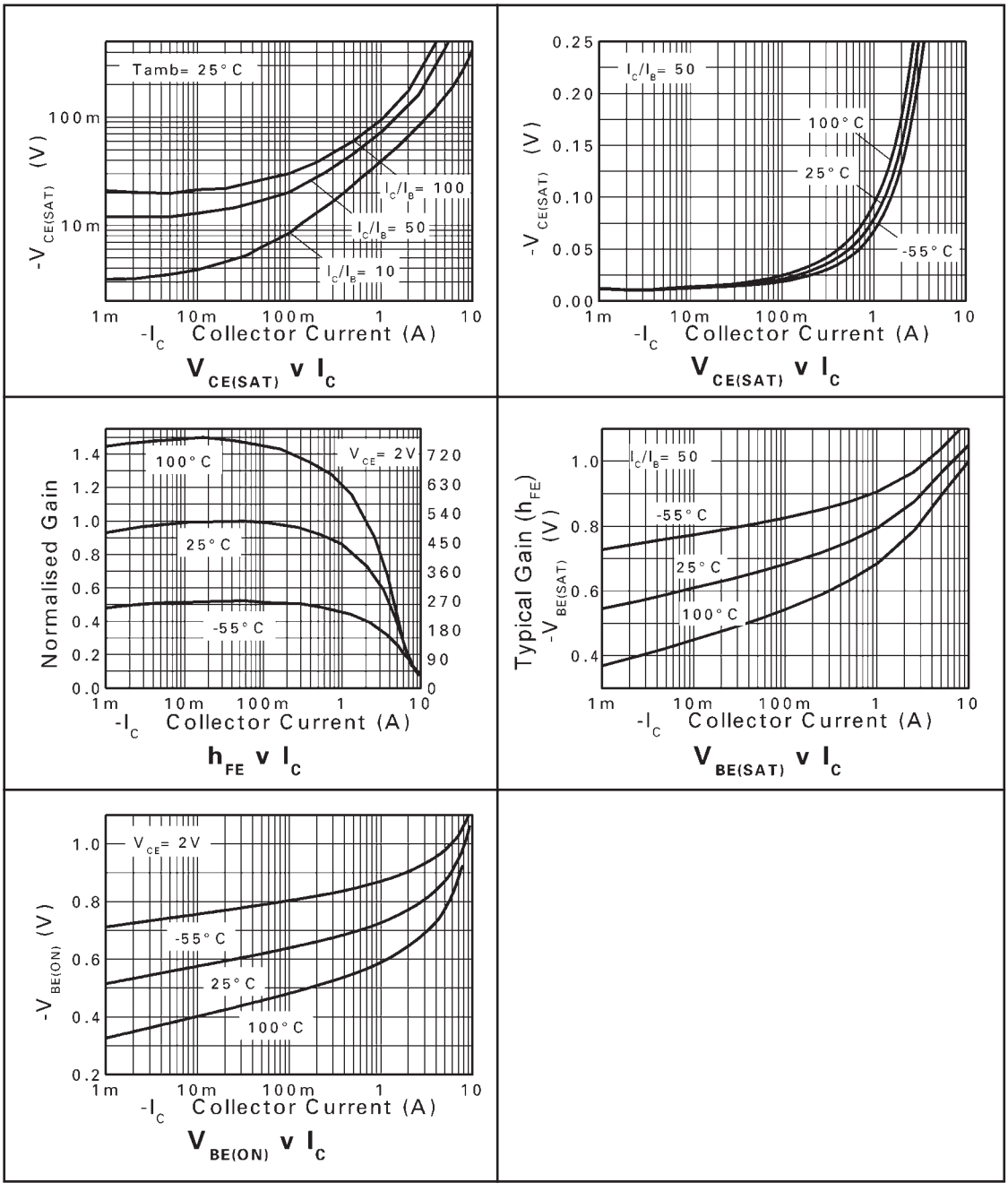
ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-base breakdown voltage	BV_{CBO}	-25	-49		V	I_C = -100μA
Collector-emitter breakdown voltage	BV_{CEO}	-20	-43		V	I_C = -10mA *
Emitter-base breakdown voltage	BV_{EBO}	-7.5	-8.4		V	I_E = -100μA
Collector cut-off current	I_{CBO}			-100	nA	V_{CB} = -20V
Collector cut-off current	I_{CES}			-100	nA	V_{CB} = -20V
Emitter cut-off current	I_{EBO}			-100	nA	V_{EB} = -6V
Collector-emitter saturation voltage	$V_{CE(SAT)}$		-10 -100 -110	-15 -140 -130	mV mV mV	I_C = -0.1A, I_B = -10mA* I_C = -1A, I_B = -10mA* I_C = -3.5A, I_B = -350mA*
Base-emitter saturation voltage	$V_{BE(SAT)}$		-0.96	-1.1	V	I_C = -3.5A, I_B = -350mA*
Base-emitter turn-on voltage	$V_{BE(ON)}$		-0.8	-0.9	V	I_C = -3.5A, V_{CE} = -2V *
Static forward current transfer ratio	h_{FE}	300 300 150 10	575 450 285 40	900		I_C = -10mA, V_{CE} = -2V * I_C = -1A, V_{CE} = -2V * I_C = -3.5A, V_{CE} = -2V * I_C = -10A, V_{CE} = -2V *
Transition frequency	f_T		110			I_C = -50mA, V_{CE} = -10V f = 50MHz
Output capacitance	C_{OBO}		45		pF	V_{CB} = -10V, f = 1MHz *

NOTES

* Measured under pulsed conditions. Pulse width ≤ 300μs; duty cycle ≤2%.

TYPICAL CHARACTERISTICS



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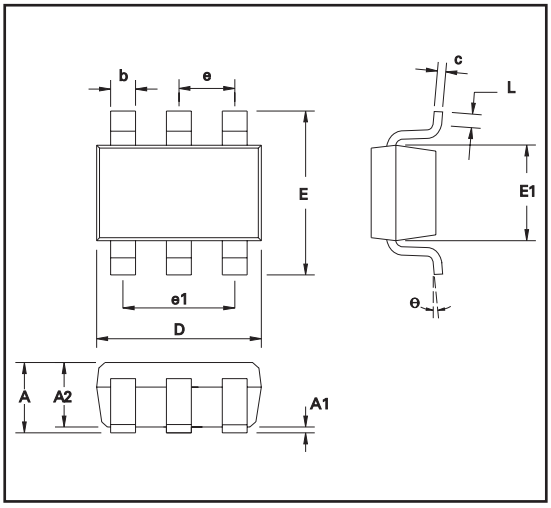
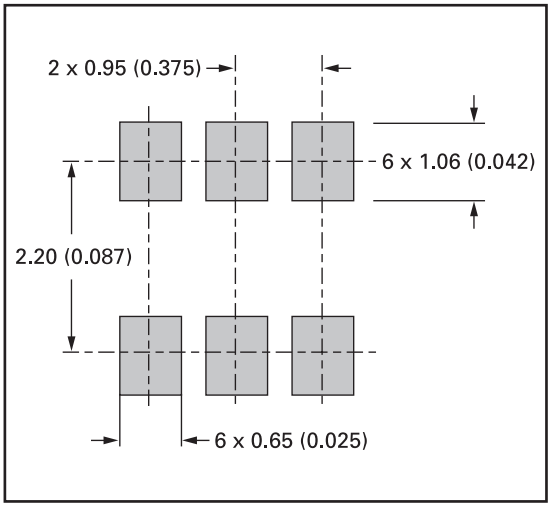
ZXTP2006E6

PACKAGE OUTLINE



PAD LAYOUT DETAILS



Controlling dimensions are in millimeters. Approximate conversions are given in inches

PACKAGE DIMENSIONS

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	0.90	1.45	0.035	0.057	E	2.20	3.20	0.0866	0.118
A1	0.00	0.15	0.00	0.006	E1	1.30	1.80	0.0511	0.071
A2	0.90	1.30	0.035	0.051	L	0.10	0.60	0.004	0.024
b	0.20	0.50	0.008	0.020	e	0.95 REF		0.037 REF	
C	0.09	0.26	0.003	0.010	e1	1.90 REF		0.075 REF	
D	2.70	3.10	0.106	0.122	θ	0°	30°	0°	30°

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