ZX5T951A

60V PNP LOW SATURATION MEDIUM POWER TRANSISTOR IN E-LINE

SUMMARY

BV_{CEO} = -60V : R_{SAT} = 38mΩ; I_C = -3.5A

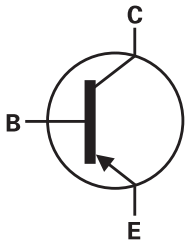
E-line

DESCRIPTION

Packaged in the E-line outline this new 5th generation low saturation 60V PNP transistor offers extremely low on state losses making it ideal for use in DC-DC circuits and various driving and power management functions.

FEATURES

- 3.5 amps continuous current
- Up to 15 amps peak current
- Very low saturation voltages
- Excellent gain up to 10 amps



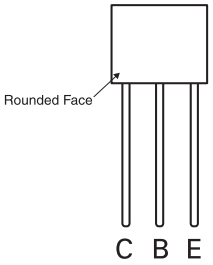
APPLICATIONS

- DC - DC converters
- MOSFET gate drivers
- Power switches
- Motor control

ORDERING INFORMATION

DEVICE	QUANTITY PER REEL
ZX5T951ASTOA	2000 units / reel
ZX5T951ASTZ	2000 units / carton

PINOUT



TOP VIEW

DEVICE MARKING

- X5T951

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-base voltage	BV_{CBO}	-100	V
Collector-emitter voltage	BV_{CEO}	-60	V
Emitter-base voltage	BV_{EBO}	-7	V
Continuous collector current [(a)]	I_C	-3.5	A
Peak pulse current	I_{CM}	-15	A
Practical power dissipation at T_A =25°C [(a)]	P_D	1.0	W
Linear derating factor		8	mW/°C
Power dissipation at T_A =25°C [(b)]	P_D	0.71	W
Linear derating factor		5.7	mW/°C
Operating and storage temperature range	T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE

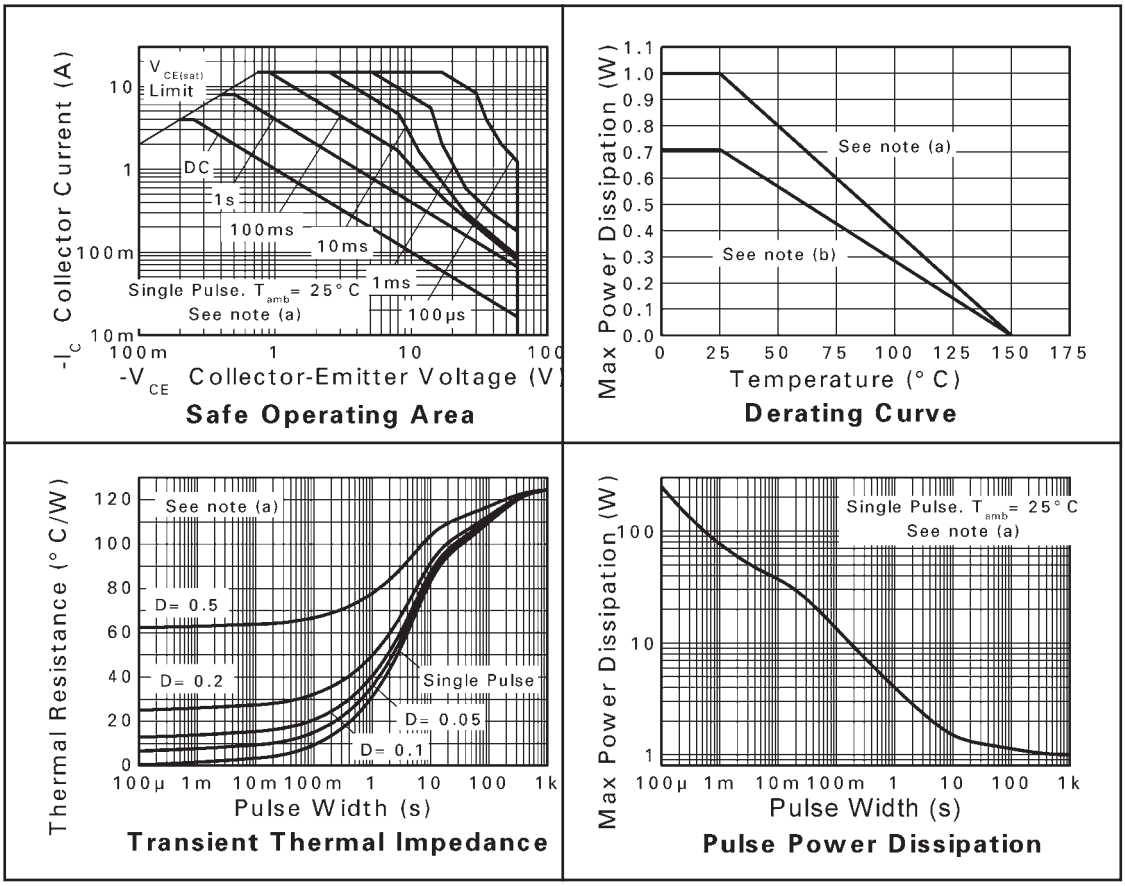
PARAMETER	SYMBOL	VALUE	UNIT
Junction to ambient [(a)]	$R_{\Theta JA}$	125	°C/W
Junction to ambient [(b)]	$R_{\Theta JA}$	175	°C/W

NOTES

(a) For a device through hole mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions. Collector lead length to solder point 4mm.

(b) For a device mounted in a socket in still air conditions. Collector lead length 10mm.

CHARACTERISTICS

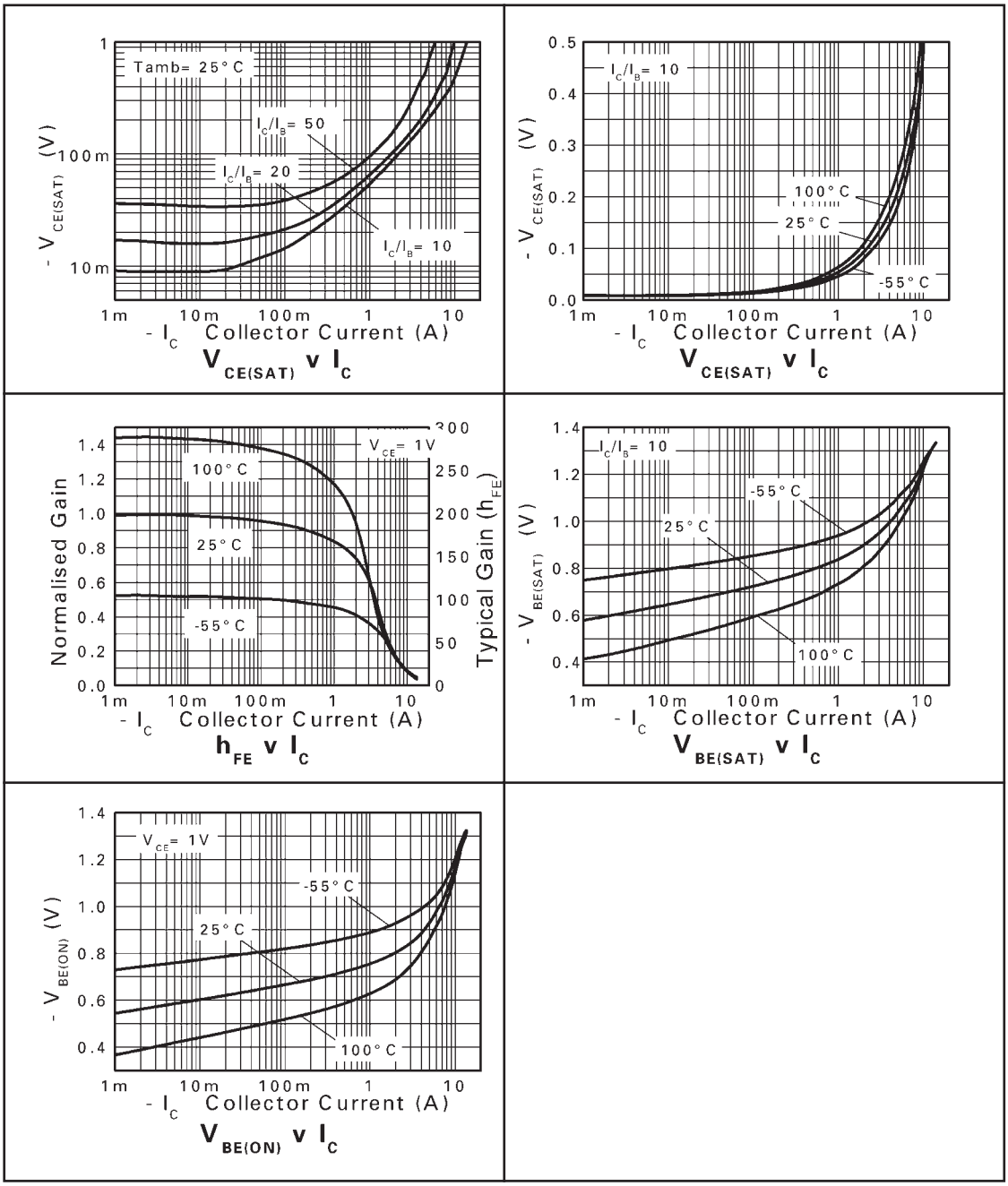


ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-base breakdown voltage	BV_{CBO}	-100	-120		V	I_C=-100μA
Collector-emitter breakdown voltage	BV_{CER}	-100	-120		V	I_C=-1μA, RB≤1kΩ
Collector-emitter breakdown voltage	BV_{CEO}	-60	-80		V	I_C=-10mA*
Emitter-base breakdown voltage	BV_{EBO}	-7	-8.1		V	I_E=-100μA
Collector cut-off current	I_{CBO}		<1	-20	nA	V_{CB}=-80V
				-0.5	μA	V_{CB}=-80V, T_{amb}=100°C
Collector cut-off current	I_{CER}		<1	-20	nA	V_{CB}=-80V
	R≤1kΩ			-0.5	μA	V_{CB}=-80V, T_{amb}=100°C
Emitter cut-off current	I_{EBO}		<1	-10	nA	V_{EB}=-6V
Collector-emitter saturation voltage	$V_{CE(SAT)}$		-14	-20	mV	I_C=-0.1A, I_B=-10mA*
			-50	-65	mV	I_C=-1A, I_B=-100mA*
			-80	-115	mV	I_C=-2A, I_B=-200mA*
			-145	-210	mV	I_C=-4A, I_B=-400mA*
Base-emitter saturation voltage	$V_{BE(SAT)}$		-960	-1060	mV	I_C=-4A, I_B=-400mA*
Base-emitter turn-on voltage	$V_{BE(ON)}$		-850	-960	mV	I_C=-4A, V_{CE}=-1V*
Static forward current transfer ratio	h_{FE}	100	250			I_C=-10mA, V_{CE}=-1V*
		100	200	300		I_C=-1A, V_{CE}=-1V*
		65	120			I_C=-4A, V_{CE}=-1V*
		10	25			I_C=-10A, V_{CE}=-1V*
Transition frequency	f_T		120		MHz	I_C=-100mA, V_{CE}=-10V
						f=50MHz
Output capacitance	C_{OBO}		48		pF	V_{CB}=-10V, f=1MHz*
Switching times	t_{ON}		39		ns	I_C=-1A, V_{CC}=-10V,
	t_{OFF}		370			I_{B1}=I_{B2}=-100mA

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

TYPICAL CHARACTERISTICS



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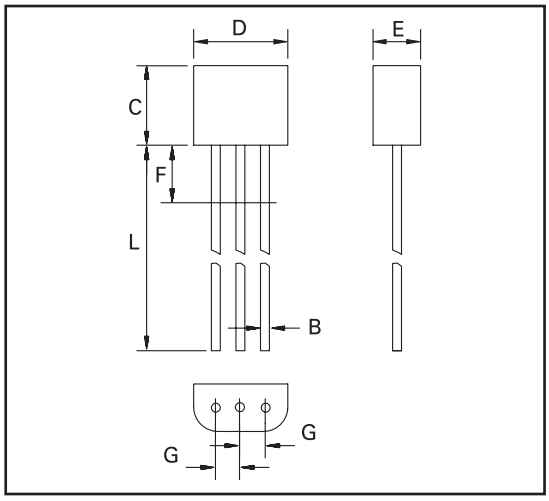
PACKAGE OUTLINE



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

PACKAGE DIMENSIONS

DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.41	0.495	0.016	0.0195
B	0.41	0.495	0.016	0.0195
C	3.61	4.01	0.142	0.158
D	4.37	4.77	0.172	0.188
E	2.16	2.41	0.085	0.095
F	—	2.50	—	0.098
G	1.27 NOM		0.050 NOM	
L	13.00	13.97	0.512	0.550

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