

# ZXTP2008Z

---

## 30V PNP LOW SATURATION MEDIUM POWER TRANSISTOR IN SOT89

---

### SUMMARY

$BV_{CEO} = -30V$  ;  $R_{SAT} = 24m\Omega$ ;  $I_C = -5.5A$

### DESCRIPTION

Packaged in the SOT89 outline this new low saturation 30V PNP transistor offers low on state losses making it ideal for use in DC-DC circuits, line switching and various driving and power management functions.



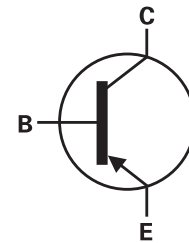
SOT89

### FEATURES

- 5.5 amps continuous current
- Up to 20 amps peak current
- Very low saturation voltages
- Exceptional gain linearity down to 10mA
- Excellent high current gain hold up

### APPLICATIONS

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

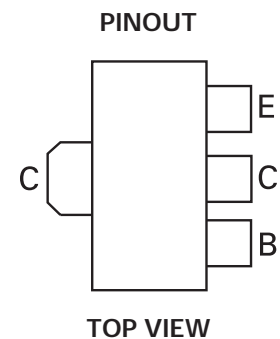


### ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZXTP2008ZTA	7"	12mm embossed	1000 units

### DEVICE MARKING

949



# ZXTP2008Z

## ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Collector-base voltage	$BV_{CBO}$	-50	V
Collector-emitter voltage	$BV_{CEO}$	-30	V
Emitter-base voltage	$BV_{EBO}$	-7	V
Continuous collector current <sup>(a)</sup>	$I_C$	-5.5	A
Peak pulse current	$I_{CM}$	-20	A
Power dissipation at $T_A = 25^\circ\text{C}$ <sup>(a)</sup>	$P_D$	1.5	W
Linear derating factor		12	mW/°C
Power dissipation at $T_A = 25^\circ\text{C}$ <sup>(b)</sup>	$P_D$	2.1	W
Linear derating factor		16.8	mW/°C
Operating and storage temperature range	$T_j, T_{stg}$	-55 to 150	°C

## THERMAL RESISTANCE

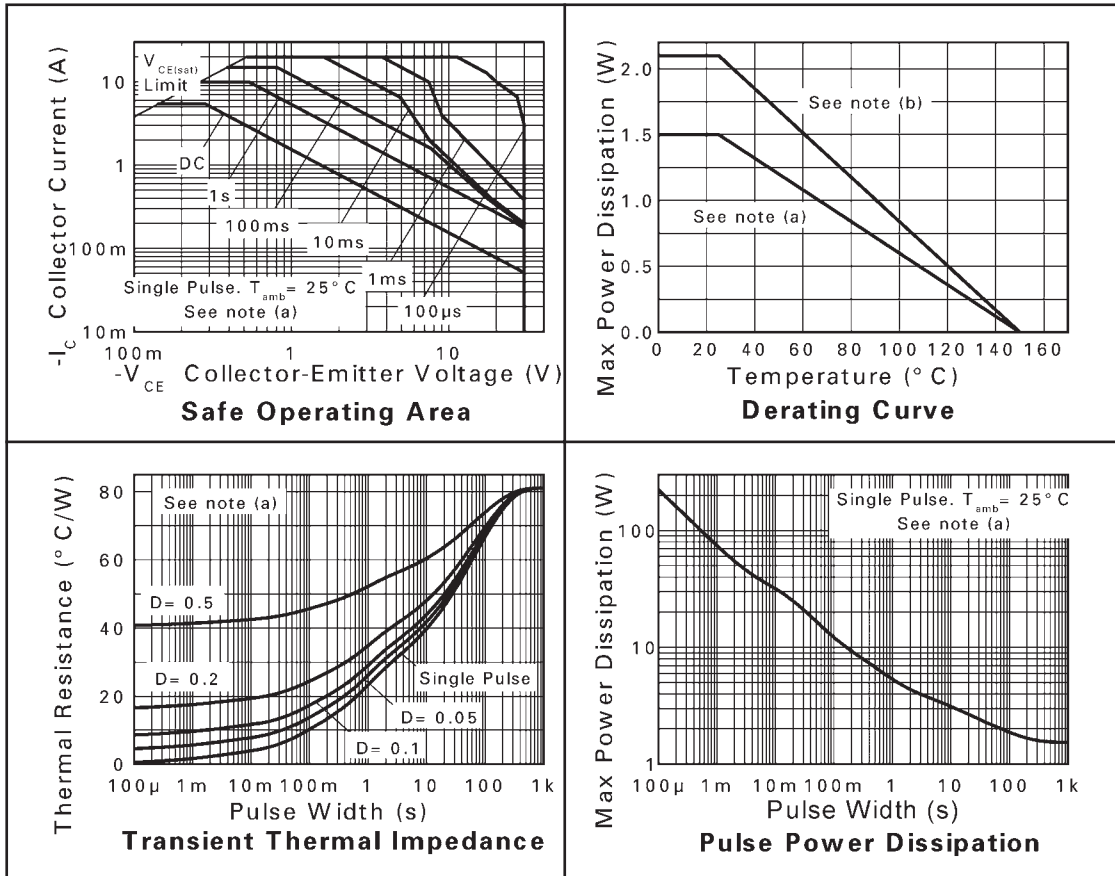
PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient <sup>(a)</sup>	$R_{\theta JA}$	83	°C/W
Junction to Ambient <sup>(b)</sup>	$R_{\theta JA}$	60	°C/W

### NOTES

(a) For a device surface mounted on 25mm x 25mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

(b) For a device surface mounted on 50mm x 50mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

## CHARACTERISTICS



# ZXTP2008Z

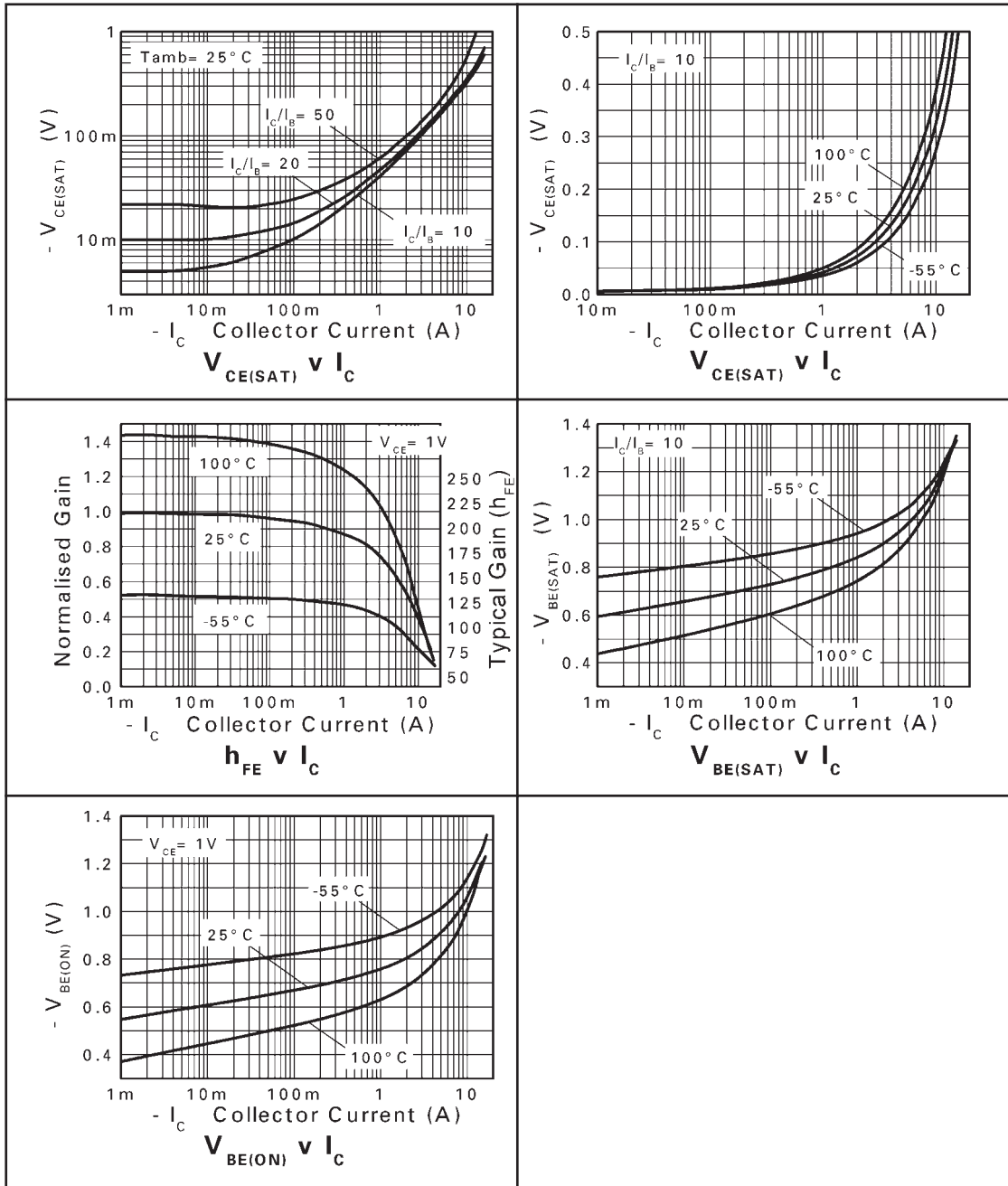
## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Collector-base breakdown voltage	$BV_{CBO}$	-50	-70		V	$I_C = -100\mu\text{A}$
Collector-emitter breakdown voltage	$BV_{CER}$	-50	-70		V	$I_C = -1\mu\text{A}$ , $R_B < 1\text{k}\Omega$
Collector-emitter breakdown voltage	$BV_{CEO}$	-30	-40		V	$I_C = -10\text{mA}$ *
Emitter-base breakdown voltage	$BV_{EBO}$	-7.0	-8.0		V	$I_E = -100\mu\text{A}$
Collector cut-off current	$I_{CBO}$		<-1	-20 -0.5	nA $\mu\text{A}$	$V_{CB} = -40\text{V}$ $V_{CB} = -40\text{V}$ , $T_{amb} = 100^{\circ}\text{C}$
Collector cut-off current	$I_{CER}$ $R < 1\text{k}\Omega$		<-1	-20 -0.5	nA $\mu\text{A}$	$V_{CB} = -40\text{V}$ $V_{CB} = -40\text{V}$ , $T_{amb} = 100^{\circ}\text{C}$
Emitter cut-off current	$I_{EBO}$		<-1	-10	nA	$V_{EB} = -6\text{V}$
Collector-emitter saturation voltage	$V_{CE(SAT)}$		-25 -35 -55 -55 -130	-40 -55 -80 -80 -175	mV mV mV mV mV	$I_C = -0.5\text{A}$ , $I_B = -20\text{mA}$ * $I_C = -1\text{A}$ , $I_B = -100\text{mA}$ * $I_C = -1\text{A}$ , $I_B = -20\text{mA}$ * $I_C = -2\text{A}$ , $I_B = -200\text{mA}$ * $I_C = -5.5\text{A}$ , $I_B = -500\text{mA}$ *
Base-emitter saturation voltage	$V_{BE(SAT)}$		-970	-1070	mV	$I_C = -5.5\text{A}$ , $I_B = -500\text{mA}$ *
Base-emitter turn-on voltage	$V_{BE(ON)}$		-860	-960	mV	$I_C = -5.5\text{A}$ , $V_{CE} = -1\text{V}$ *
Static forward current transfer ratio	$h_{FE}$	100 100 70 10	225 200 145 20	300		$I_C = -10\text{mA}$ , $V_{CE} = -1\text{V}$ * $I_C = -1\text{A}$ , $V_{CE} = -1\text{V}$ * $I_C = -5\text{A}$ , $V_{CE} = -1\text{V}$ * $I_C = -20\text{A}$ , $V_{CE} = -1\text{V}$ *
Transition frequency	$f_T$		110		MHz	$I_C = -100\text{mA}$ , $V_{CE} = -10\text{V}$ $f = 50\text{MHz}$
Output capacitance	$C_{OBO}$		83		pF	$V_{CB} = -10\text{V}$ , $f = 1\text{MHz}$ *
Switching times	$t_{ON}$ $t_{OFF}$		43 230		ns	$I_C = -1\text{A}$ , $V_{CC} = -10\text{V}$ , $I_{B1} = -I_{B2} = -100\text{mA}$

### NOTES

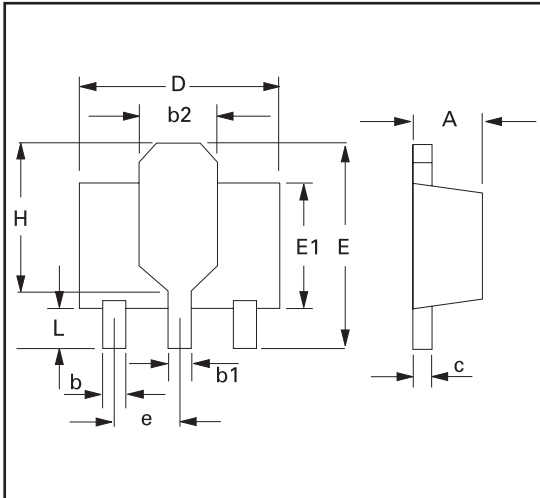
\* Measured under pulsed conditions. Pulse width  $\leq 300\mu\text{s}$ ; duty cycle  $\leq 2\%$ .

TYPICAL CHARACTERISTICS

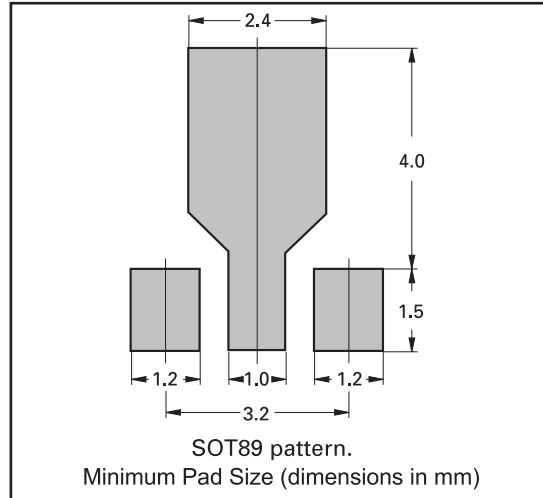


# ZXTP2008Z

## 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	1.40	1.60	0.550	0.630	e	1.40	1.50	0.055	0.059
b	0.38	0.48	0.015	0.019	E	3.75	4.25	0.150	0.167
b1	-	0.53	-	0.021	E1	-	2.60	-	0.102
b2	1.50	1.80	0.060	0.071	G	2.90	3.00	0.114	0.118
c	0.28	0.44	0.011	0.017	H	2.60	2.85	0.102	0.112
D	4.40	4.60	0.173	0.181	-	-	-	-	-

© Zetex Semiconductors plc 2005

Europe	Americas	Asia Pacific	Corporate Headquarters
Zetex GmbH Streitfeldstraße 19 D-81673 München Germany	Zetex Inc 700 Veterans Memorial Hwy Hauppauge, NY 11788 USA	Zetex (Asia) Ltd 3701-04 Metroplaza Tower 1 Hing Fong Road, Kwai Fong Hong Kong	Zetex Semiconductors plc Zetex Technology Park Chadderton, Oldham, OL9 9LL United Kingdom
Telefon: (49) 89 45 49 49 0 Fax: (49) 89 45 49 49 49 <a href="mailto:europa.sales@zetex.com">europa.sales@zetex.com</a>	Telephone: (1) 631 360 2222 Fax: (1) 631 360 8222 <a href="mailto:usa.sales@zetex.com">usa.sales@zetex.com</a>	Telephone: (852) 26100 611 Fax: (852) 24250 494 <a href="mailto:asia.sales@zetex.com">asia.sales@zetex.com</a>	Telephone (44) 161 622 4444 Fax: (44) 161 622 4446 <a href="mailto:hq@zetex.com">hq@zetex.com</a>

These offices are supported by agents and distributors in major countries world-wide.

This publication is issued to provide outline information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to the products or services concerned. The Company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

For the latest product information, log on to [www.zetex.com](http://www.zetex.com)

ISSUE 1 - JUNE 2005

## Данный компонент на территории Российской Федерации

### Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9