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## **ZXTP5401FL**

### **150V, SOT23, PNP High voltage transistor**

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#### **Summary**

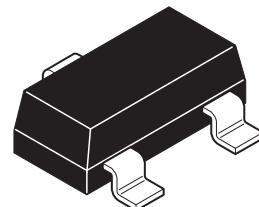
$BV_{CEO} > -150V$

$BV_{EBO} > -5V$

$I_C(\text{cont}) = -600mA$

$P_D = 330mW$

Complementary part number **ZXTN5551FL**

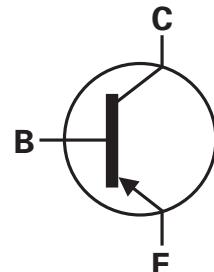


#### **Description**

A high voltage PNP transistor in a small outline surface mount package.

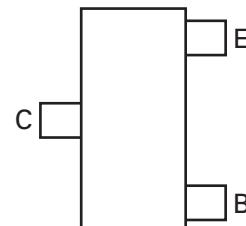
#### **Features**

- 150V rating
- SOT23 package



#### **Applications**

- High voltage amplification



#### **Ordering information**

Device	Reel size (inches)	Tape width (mm)	Quantity per reel
ZXTP5401FLTA	7	8	3000

Pinout - top view

#### **Device marking**

P01

# ZXTP5401FL

## Absolute maximum ratings

Parameter	Symbol	Limit	Unit
Collector-base voltage	$V_{CBO}$	-160	V
Collector-emitter voltage	$V_{CEO}$	-150	V
Emitter-base voltage	$V_{EBO}$	-5	V
Continuous collector current <sup>(a)</sup>	$I_C$	-600	mA
Pulsed collector current	$I_{CM}$	-1	A
Power dissipation at $T_{amb} = 25^\circ\text{C}$ <sup>(a)</sup>	$P_D$	330	mW
Linear derating factor		2.64	mW/°C
Operating and storage temperature range	$T_j, T_{stg}$	-55 to 150	°C

## Thermal resistance

Parameter	Symbol	Limit	Unit
Junction to ambient <sup>(a)</sup>	$R_{\Theta JA}$	379	°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 weight copper, in still air conditions.

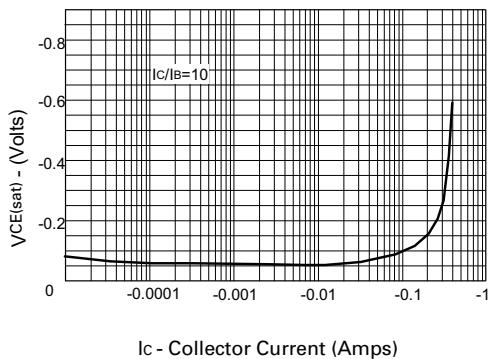
# ZXTP5401FL

## Electrical characteristics (at $T_{amb} = 25^\circ C$ unless otherwise stated)

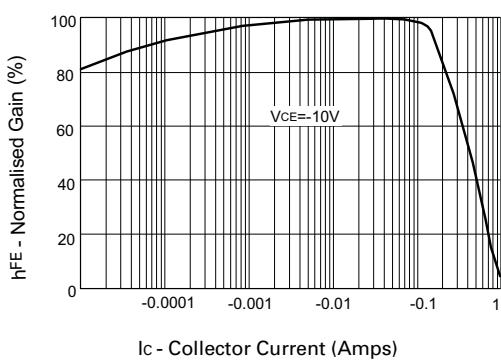
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	-160	-270		V	$I_C = -100\mu A$
Collector-emitter breakdown voltage (base open)	$BV_{CEO}$	-150	-240		V	$I_C = -1mA$ (*)
Emitter-base breakdown voltage	$BV_{EBO}$	-5	-8.1		V	$I_E = -10\mu A$
Collector cut-off current	$I_{CBO}$		<-1	-50	nA	$V_{CB} = -120V$
				-50	$\mu A$	$V_{CB} = -120V, T_{amb} = 100^\circ C$
Collector-emitter saturation voltage	$V_{CE(sat)}$		-50 -70	-200 -500	mV	$I_C = -10mA, I_B = -1mA$ (*)
					mV	$I_C = -50mA, I_B = -5mA$ (*)
Base-emitter saturation voltage	$V_{BE(sat)}$		-700 -750	1000 1000	mV	$I_C = -10mA, I_B = -1mA$ (*)
					mV	$I_C = -50mA, I_B = -5mA$ (*)
Static forward current transfer ratio	$h_{FE}$	50 60 50	135 135 130	240		$I_C = -1mA, V_{CE} = -5V$ (*)
						$I_C = -10mA, V_{CE} = -5V$ (*)
						$I_C = -50mA, V_{CE} = -5V$ (*)
Transition frequency	$f_T$		100		MHz	$I_C = -10mA, V_{CE} = -10V$ $f = 100MHz$
Output capacitance	$C_{OBO}$			10	pF	$V_{CB} = -10V, f = 1MHz$ (*)
Delay time	$t_{(d)}$		386		ns	$V_{CC} = -50V. I_C = 100mA,$ $I_{B1} = I_{B2} = -10mA.$
Rise time	$t_{(r)}$		202		ns	
Storage time	$t_{(s)}$		1720		ns	
Fall time	$t_{(f)}$		275		ns	

### NOTES:

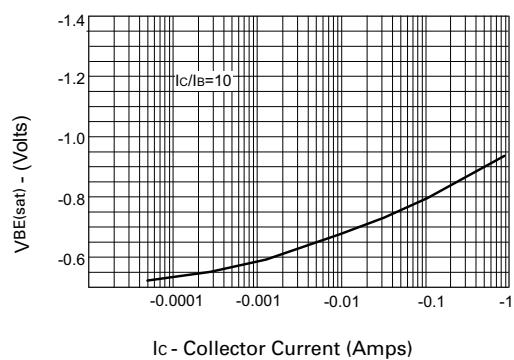
(\*) Measured under pulsed conditions. Pulse width  $\leq 300\mu s$ ; duty cycle  $\leq 2\%$ .

**Typical characteristics**

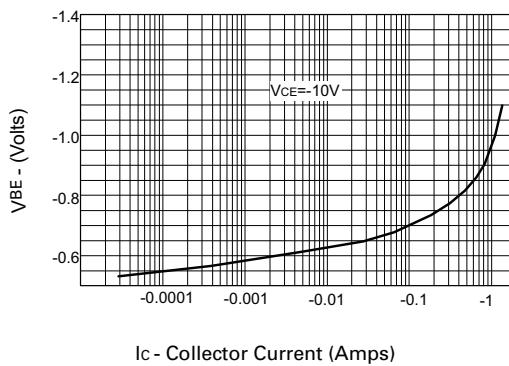
Ic - Collector Current (Amps)

**V<sub>CE(sat)</sub> v IC**

Ic - Collector Current (Amps)

**h<sub>FE</sub> v IC**

Ic - Collector Current (Amps)

**V<sub>BE(sat)</sub> v IC**

Ic - Collector Current (Amps)

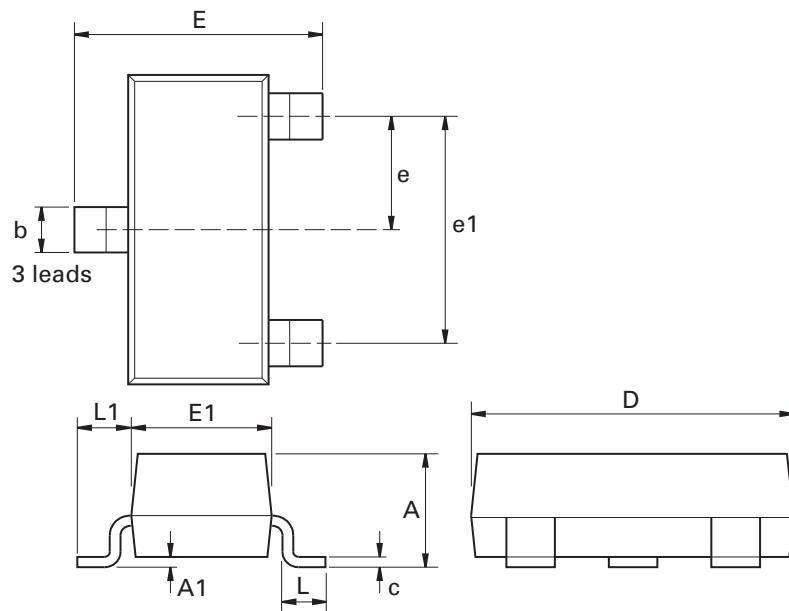
**V<sub>BE(on)</sub> v IC**

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**ZXTP5401FL**

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## Package outline - SOT23



Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	-	1.12	-	0.044	e1	1.90 NOM		0.075 NOM	
A1	0.01	0.10	0.0004	0.004	E	2.10	2.64	0.083	0.104
b	0.30	0.50	0.012	0.020	E1	1.20	1.40	0.047	0.055
c	0.085	0.20	0.003	0.008	L	0.25	0.60	0.0098	0.0236
D	2.80	3.04	0.110	0.120	L1	0.45	0.62	0.018	0.024
e	0.95 NOM		0.037 NOM		-	-	-	-	-

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

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