

# PZTA44/45

## NPN SILICON TRANSISTOR

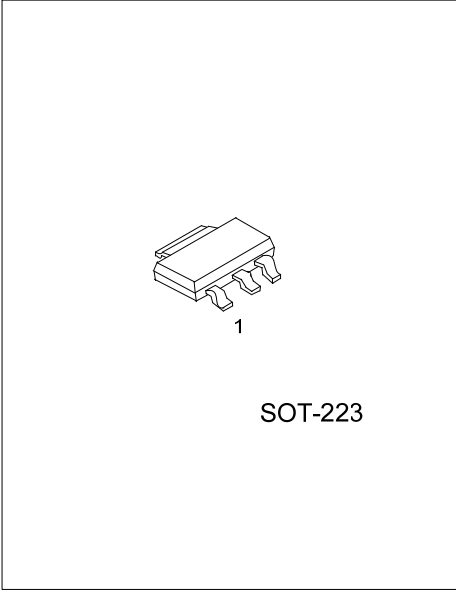
### NPN HIGH VOLTAGE TRANSISTOR

■ FEATURES

- \* Collector-emitter voltage:  
 $V_{CE0}=400V$ (PZTA44)  
 $V_{CE0}=350V$ (PZTA45)
- \* Collector current up to 300mA

■ APPLICATION

- \* Telephone switching
- \* High voltage switch



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
PZTA44L-AA3-R	PZTA44G-AA3-R	SOT-223	B	C	E	Tape Reel
PZTA45L-AA3-R	PZTA45G-AA3-R	SOT-223	B	C	E	Tape Reel

<p>PZTA44L-AA3-R</p>	<p>(1) R: Tape Reel                  (2) AA3: SOT-223                  (3) G: Halogen Free, L: Lead Free</p>
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PZTA44/45

NPN SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	PZTA44	500	V
	PZTA45	400	V
Collector-Emitter Voltage	PZTA44	400	V
	PZTA45	350	V
Emitter-Base Voltage	V <sub>EBO</sub>	6	V
Collector Current	I <sub>C</sub>	300	mA
Collector Dissipation	P <sub>C</sub>	1.2	W
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub> =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	PZTA44	I <sub>C</sub> =100μA, I <sub>B</sub> =0	500			V
	PZTA45		400			V
Collector-Emitter Breakdown Voltage	PZTA44	I <sub>C</sub> =1mA, I <sub>B</sub> =0	400			V
	PZTA45		350			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6			V
Collector Cut-OFF Current	PZTA44	V <sub>CB</sub> =400V, I <sub>E</sub> =0			0.1	μA
	PZTA45		V <sub>CB</sub> =320V, I <sub>E</sub> =0			0.1
Collector Cut-OFF Current	PZTA44	V <sub>CE</sub> =400V, I <sub>B</sub> =0			0.5	μA
	PZTA45		V <sub>CE</sub> =320V, I <sub>B</sub> =0			0.5
Emitter Cut-OFF Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			0.1	μA
DC Current Gain (Note)	h <sub>FE</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =1mA	40			
		V <sub>CE</sub> =10V, I <sub>C</sub> =10mA	50		240	
		V <sub>CE</sub> =10V, I <sub>C</sub> =50mA	45			
		V <sub>CE</sub> =10V, I <sub>C</sub> =100mA	40			
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0.1mA			0.4	V
		I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.5	V
		I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.75	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.75	V
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =20V, I <sub>C</sub> =10mA, f=100MHz	50			MHz
Output Capacitance	C <sub>OB</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz			7	pF

Note: Pulse test: Pulse Width<300μs, Duty Cycle<2%

■ TYPICAL CHARACTERISTICS

Fig.1 DC Current Gain

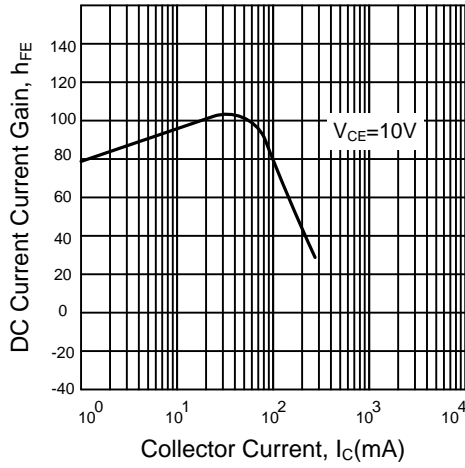


Fig.2 Turn-ON Switching Time

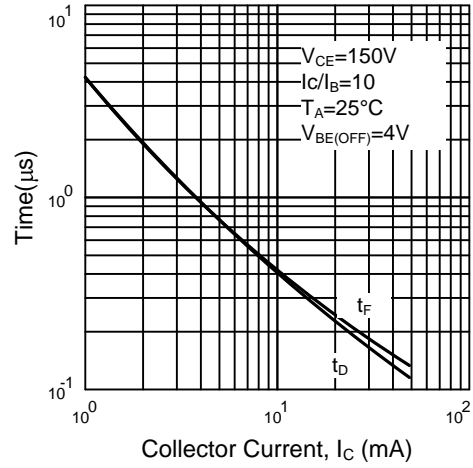


Fig.3 Turn-OFF Switching Time

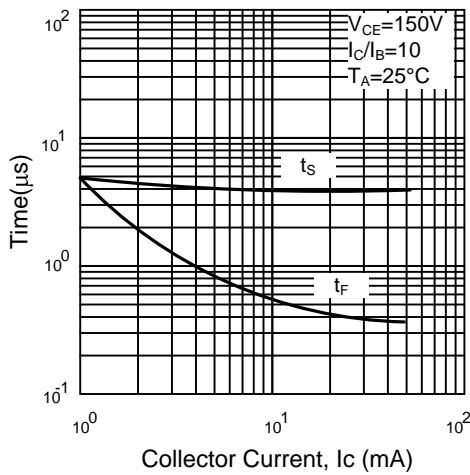


Fig.4 Capacitance

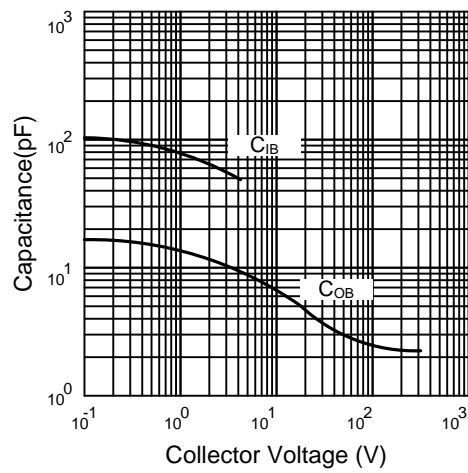


Fig.5 ON Voltage

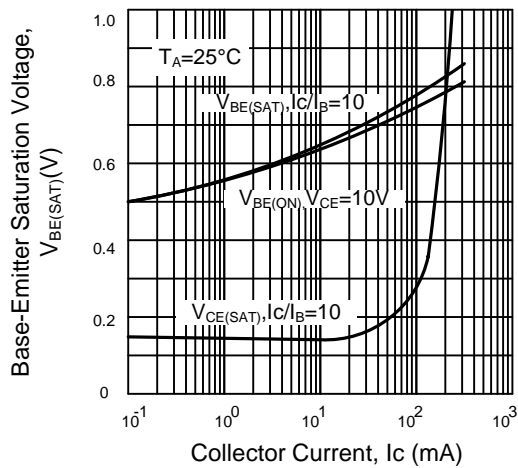
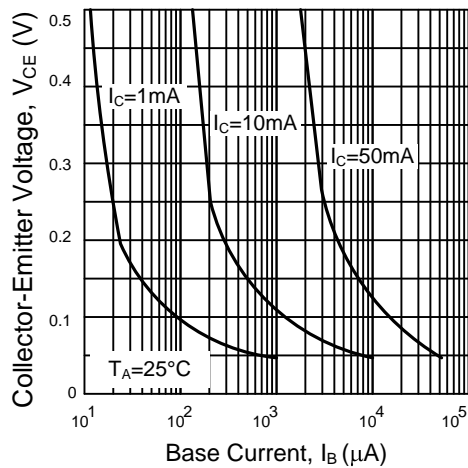


Fig.6 Collector Saturation Region



■ TYPICAL CHARACTERISTICS(Cont.)

Fig.7 High Frequency Current Gain

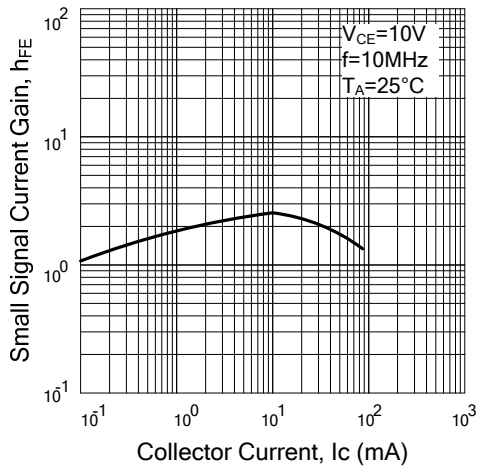


Fig.8 Safe Operating Area

