



PZTA44/45

NPN SILICON TRANSISTOR

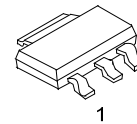
NPN HIGH VOLTAGE TRANSISTOR

■ FEATURES

- * Collector-emitter voltage:
 $V_{CE0}=400V$ (PZTA44)
 $V_{CE0}=350V$ (PZTA45)
- * Collector current up to 300mA
- * Complement to PZTA94/93

■ APPLICATION

- * Telephone switching
- * High voltage switch



SOT-223

■ ORDERING INFORMATION

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

PZTA44L-AA3-R (1)Packing Type (2)Package Type (3)Lead Free	(1) R: Tape Reel (2) AA3: SOT-223 (3) G: Halogen Free, L: Lead Free
---	--

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	PZTA44	V_{CBO}	500	V
	PZTA45		400	V
Collector-Emitter Voltage	PZTA44	V_{CEO}	400	V
	PZTA45		350	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current		I_C	300	mA
Collector Dissipation		P_C	1.2	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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 ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	PZTA44	BV_{CBO}	$I_C=100\mu\text{A}, I_B=0$	500			V
	PZTA45			400			V
Collector-Emitter Breakdown Voltage	PZTA44	BV_{CEO}	$I_C=1\text{mA}, I_B=0$	400			V
	PZTA45			350			V
Emitter-Base Breakdown Voltage		BV_{EBO}	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector Cut-OFF Current	PZTA44	I_{CBO}	$V_{CB}=400\text{V}, I_E=0$			0.1	μA
	PZTA45		$V_{CB}=320\text{V}, I_E=0$			0.1	μA
Collector Cut-OFF Current	PZTA44	I_{CES}	$V_{CE}=400\text{V}, I_B=0$			0.5	μA
	PZTA45		$V_{CE}=320\text{V}, I_B=0$			0.5	μA
Emitter Cut-OFF Current		I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			0.1	μA
DC Current Gain (Note)		h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{mA}$	40			
			$V_{CE}=10\text{V}, I_C=10\text{mA}$	50		240	
			$V_{CE}=10\text{V}, I_C=50\text{mA}$	45			
			$V_{CE}=10\text{V}, I_C=100\text{mA}$	40			
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=1\text{mA}, I_B=0.1\text{mA}$			0.4	V
			$I_C=10\text{mA}, I_B=1\text{mA}$			0.5	V
			$I_C=50\text{mA}, I_B=5\text{mA}$			0.75	V
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.75	V
Current Gain Bandwidth Product		f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	50			MHz
Output Capacitance		C_{OB}	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			7	pF

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

■ TYPICAL CHARACTERISTICS

Fig.1 DC Current Gain

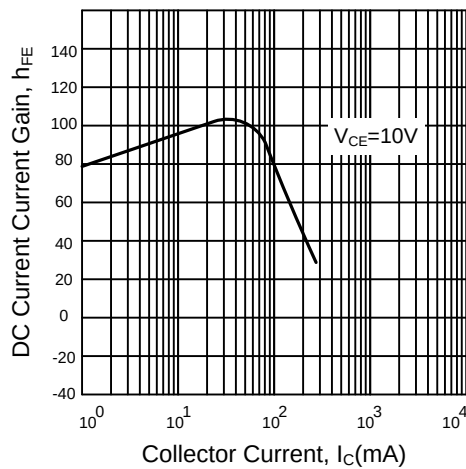


Fig.2 Turn-ON Switching Time

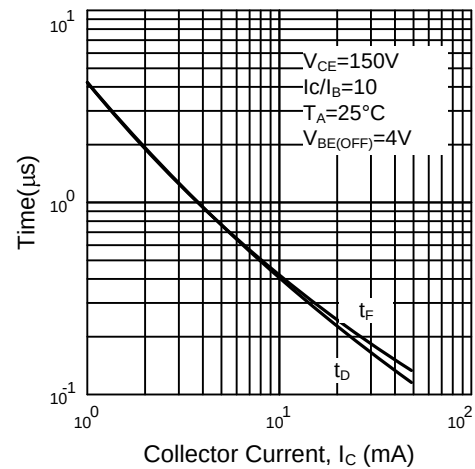


Fig.3 Turn-OFF Switching Time

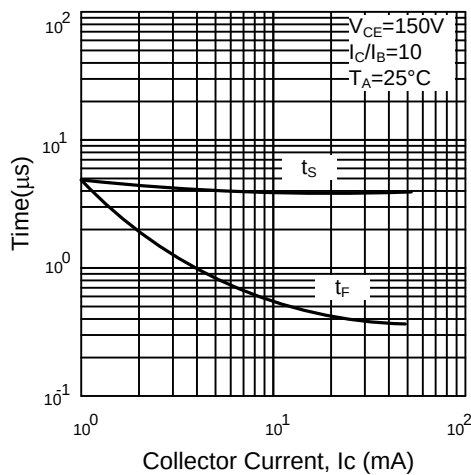


Fig.4 Capacitance

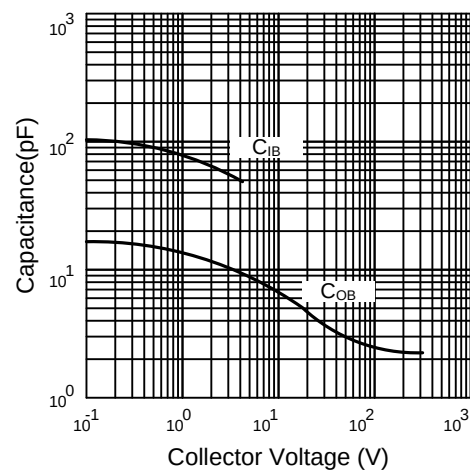


Fig.5 ON Voltage

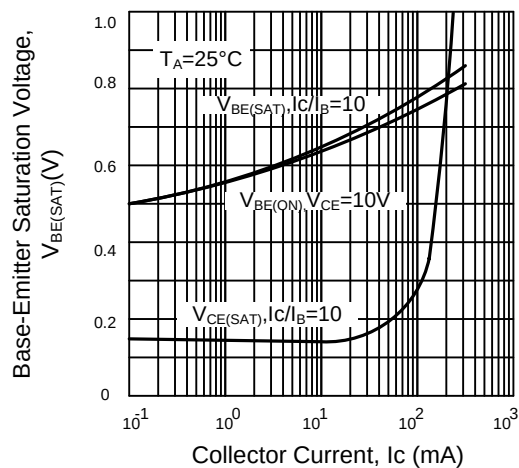
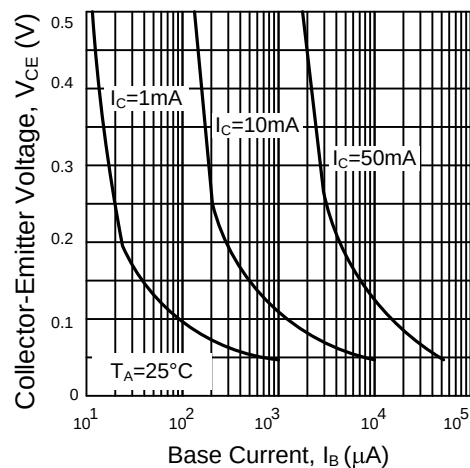


Fig.6 Collector Saturation Region



■ TYPICAL CHARACTERISTICS(Cont.)

Fig.7 High Frequency Current Gain

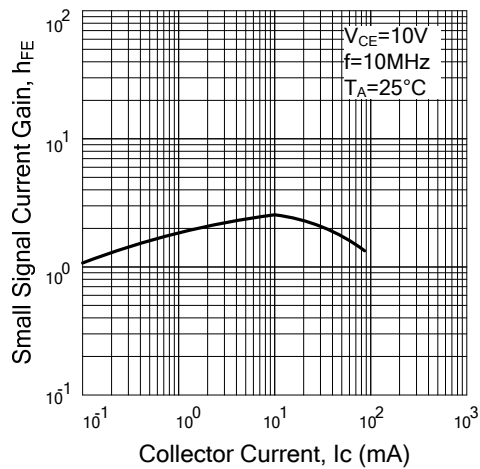
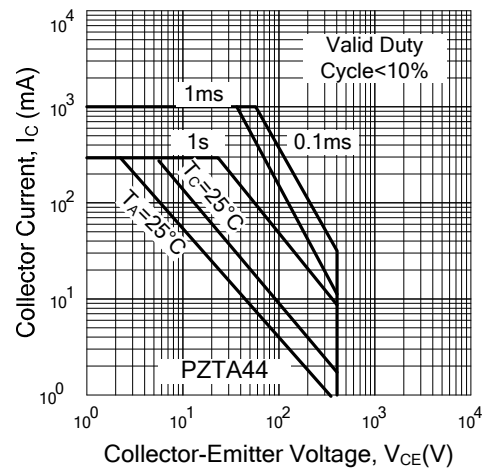


Fig.8 Safe Operating Area



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.