UTC PZTA44/45 NPN EPITAXIAL SILICON TRANSISTOR

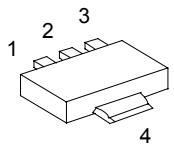
HIGH VOLTAGE TRANSISTOR

FEATURES

*Collector-Emitter voltage:
V_{CEO}=400V(PZTA44)
V_{CEO}=350V(PZTA45)
*Collector current up to 300mA
*Complement to PZTA94/93
*Collector Dissipation:
Pc(max)=2W

APPLICATION

*Telephone switching
*High voltage switch



SOT-223

1:EMITTER 2,4:COLLECTOR 3:BASE

ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage			V
PZTA44	V_{CBO}	500	
PZTA45		400	
Collector-emitter voltage			V
PZTA44	V_{CEO}	400	
PZTA45		350	
Emitter-base voltage	V_{EBO}	6	V
Collector dissipation(Ta=25°C)	Pc	625	mW
Collector dissipation(Tc=25°C)	Pc	2	W
Collector current	Ic	300	mA
Junction Temperature	T_j	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (Tj=25°C,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	BV_{CBO}	I_C=100μA,I_B=0				
PZTA44			500			V
PZTA45			400			
Collector-emitter breakdown voltage	BV_{CEO}	I_C=1mA,I_B=0				
PZTA44			400			V
PZTA45			350			
Emitter-base breakdown voltage	BV_{EBO}	I_E=100μA,I_C=0	6			V
Collector cut-off current	I_{CBO}					μA
PZTA44		V_{CB}=400V,I_E=0			0.1	
PZTA45		V_{CB}=320V,I_E=0			0.1	
Collector cut-off current	I_{CES}					μA
PZTA44		V_{CE}=400V,I_B=0			0.5	
PZTA45		V_{CE}=320V,I_B=0			0.5	
Emitter cut-off current	I_{EBO}	V_{EB}=4V,I_C=0			0.1	μA
DC current gain(note)	h_{FE}	V_{CE}=10V,I_C=1mA	40			
		V_{CE}=10V,I_C=10mA	50		240	
		V_{CE}=10V,I_C=50mA	45			
		V_{CE}=10V,I_C=100mA	40			
Collector-emitter saturation voltage	V_{CE}(sat)	I_C=1mA,I_B=0.1mA			0.4	V
		I_C=10mA,I_B=1mA			0.5	
		I_C=50mA,I_B=5mA			0.75	
Base-emitter saturation voltage	V_{BE}(sat)	I_C=10mA,I_B=1mA			0.75	V
Current gain bandwidth product	f_T	V_{CE}=20V,I_C=10mA, f=100MHz	50			MHz
Output capacitance	Cob	V_{CB}=20V,I_E=0 f=1MHz			7	pF

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

TYPICAL CHARACTERISTIC CURVES

Fig.1 DC current gain

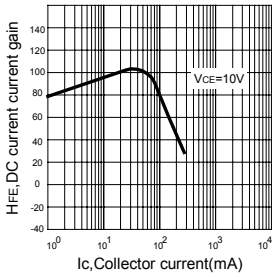


Fig.2 Turn-on switching times

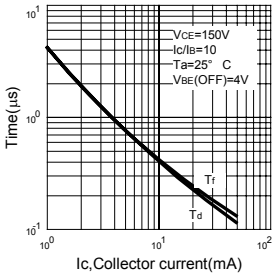


Fig.3 Turn-off switching times

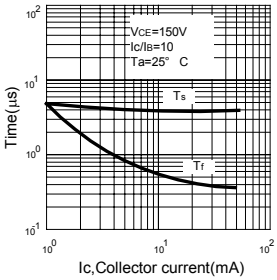


Fig.4 Capacitance

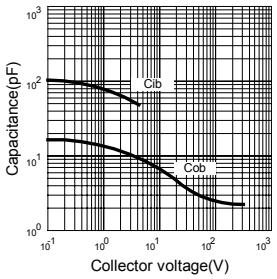


Fig.5 ON Voltage

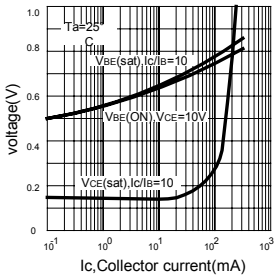


Fig.6 Collector saturation region

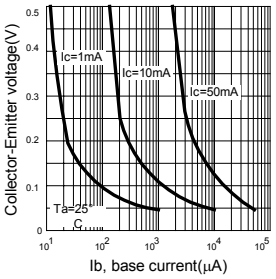


Fig.7 High Frequency current gain

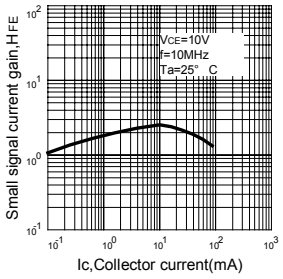


Fig.8 Safe operating area