

UTC MPSA44/45 NPN EPITAXIAL SILICON TRANSISTOR

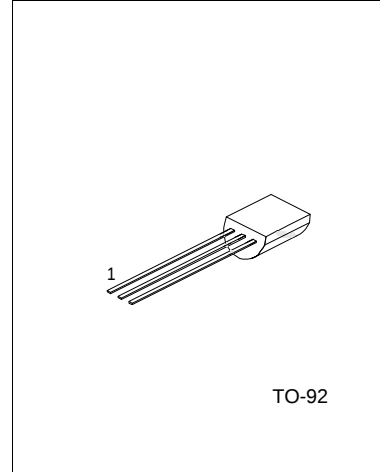
HIGH VOLTAGE TRANSISTOR

FEATURES

- *Collector-Emitter voltage:
V_{CEO}=400V(MPSA44)
V_{CEO}=350V(MPSA45)
- *Collector current up to 300mA
- *Complement to MPSA94/93
- *Collector Dissipation:
P_c(max)=625mW

APPLICATION

- *Telephone switching
- *High voltage switch



1:EMITTER 2:BASE 3:COLLECTOR

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

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage MPSA44 MPSA45	V _{CB0}	500 400	V
Collector-emitter voltage MPSA44 MPSA45	V _{CEO}	400 350	V
Emitter-base voltage	V _{EB0}	6	V
Collector dissipation(T _a =25°C)	P _c	625	mW
Collector dissipation(T _c =25°C)	P _c	1.5	W
Collector current	I _c	300	mA
Junction Temperature	T _j	150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage MPSA44 MPSA45	BV _{CB0}	I _c =100μA, I _B =0	500 400			V
Collector-emitter breakdown voltage MPSA44 MPSA45	BV _{CEO}	I _c =1mA, I _B =0	400 350			V
Emitter-base breakdown voltage	BV _{EB0}	I _E =100μA, I _c =0	6			V

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(continued)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector cut-off current MPSA44 MPSA45	ICBO	V _{CB} =400V, I _E =0 V _{CB} =320V, I _E =0			1 1	μA
Collector cut-off current MPSA44 MPSA45	ICES	V _{CB} =400V, I _E =0 V _{CB} =320V, I _E =0			1 1	μA
Emitter cut-off current	IEBO	V _{EB} =4V, I _C =0			0.1	μA
DC current gain(note)	h _{FE}	V _{CE} =10V, I _C =1mA V _{CE} =10V, I _C =10mA V _{CE} =10V, I _C =50mA V _{CE} =10V, I _C =100mA	40 50 45 40		240	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1mA, I _B =0.1mA I _C =10mA, I _B =1mA I _C =50mA, I _B =5mA			0.4 0.5 0.75	V
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	C _{ob}	V _{CB} =20V, I _E =0 f=1MHz			7	pF

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

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TYPICAL CHARACTERISTIC CURVES

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Fig.1 DC current gain

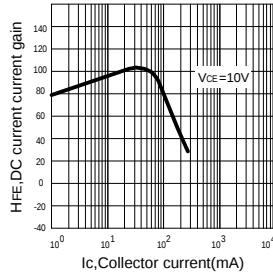


Fig.2 Turn-on switching times

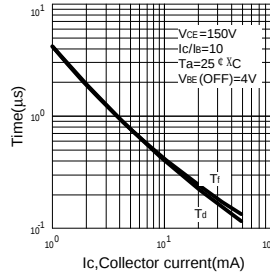


Fig.3 Turn-off switching times

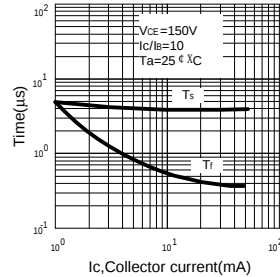


Fig.4 Capacitance

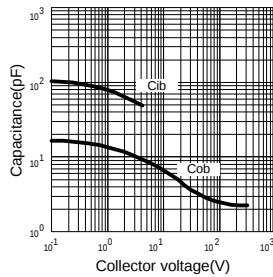


Fig.5 ON Voltage

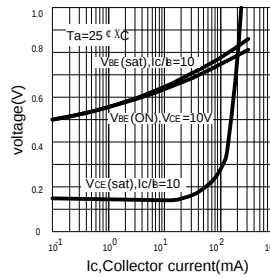


Fig.6 Collector saturation region

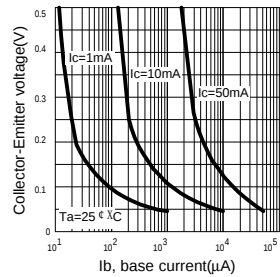


Fig.7 High Frequency current gain

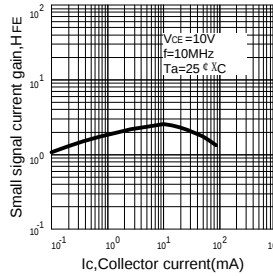


Fig.8 Safe operating area

