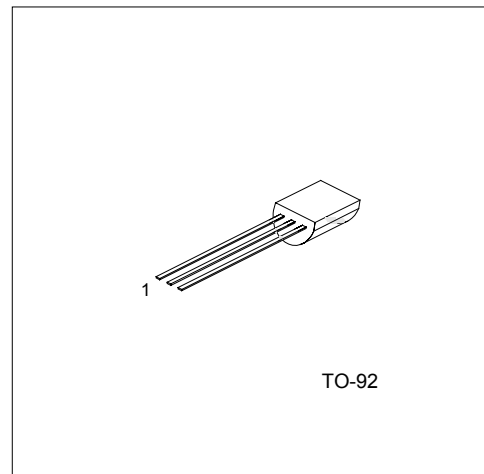


## HIGH VOLTAGE TRANSISTOR

## FEATURES

- \*Collector-Emitter voltage:  $V_{CEO}=400V$
- \*Collector current up to 300mA
- \*Complement to MPSA94
- \*Collector Dissipation:  $P_c(\max)=625mW$



1: BASE 2: EMITTER 3: COLLECTOR

\*Pb-free plating product number: MPSA44BL

## ABSOLUTE MAXIMUM RATINGS

( Operating temperature range applies unless otherwise specified )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-base voltage	$V_{CBO}$	500	V
Collector-emitter voltage	$V_{CEO}$	400	V
Emitter-base voltage	$V_{EBO}$	6	V
Collector dissipation( $T_a=25^\circ C$ )	$P_c$	625	mW
Collector dissipation( $T_c=25^\circ C$ )	$P_c$	1.5	W
Collector current	$I_c$	300	mA
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55 ~ +150	$^\circ C$

## ELECTRICAL CHARACTERISTICS

(  $T_j=25^\circ C$ , unless otherwise specified )

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$BV_{CBO}$	$I_c=100\mu A, I_B=0$	500			V
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_c=1mA, I_B=0$	400			V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E=100\mu A, I_c=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=400V, I_E=0$			0.1	$\mu A$
Collector cut-off current	$I_{CES}$	$V_{CE}=400V, I_B=0$			0.5	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_c=0$			0.1	$\mu A$
DC current gain(note)	$h_{FE}$	$V_{CE}=10V, I_c=1mA$	40		240	
		$V_{CE}=10V, I_c=10mA$	50			
		$V_{CE}=10V, I_c=50mA$	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	$C_{ob}$	$V_{CB}=20V, I_E=0, f=1MHz$			7	pF

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

TYPICAL CHARACTERISTIC CURVES

Fig.1 DC current gain

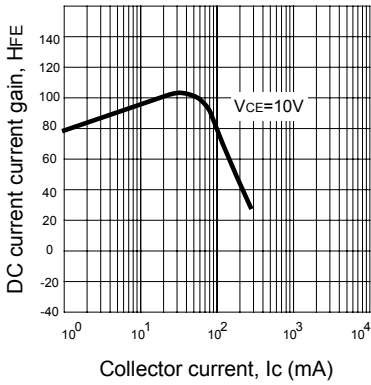


Fig.2 Turn-on switching times

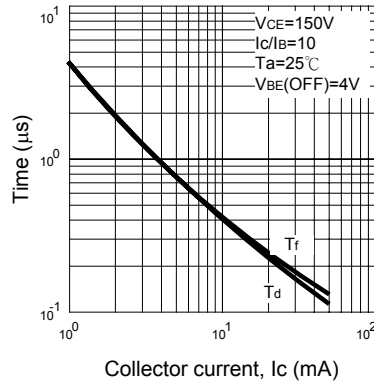


Fig.3 Turn-off switching times

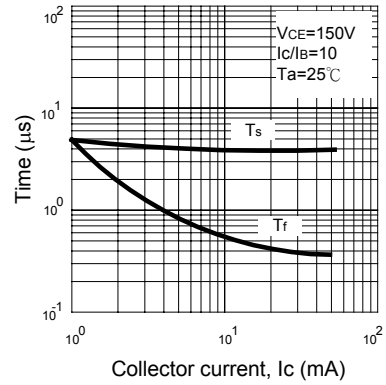


Fig.4 Capacitance

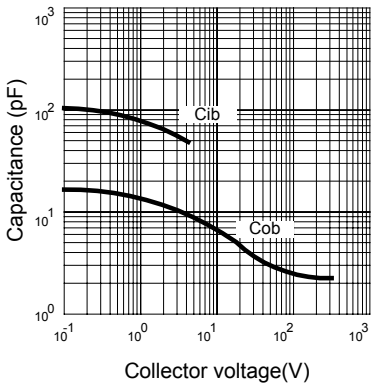


Fig.5 ON Voltage

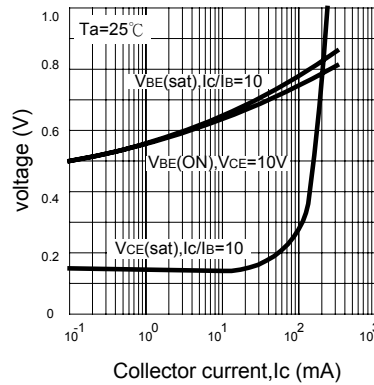


Fig.6 Collector saturation region

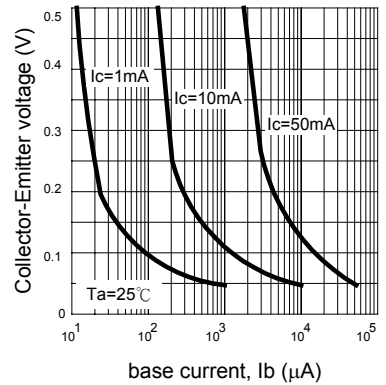


Fig.7 High Frequency current gain

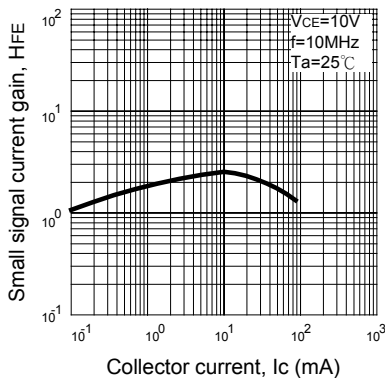
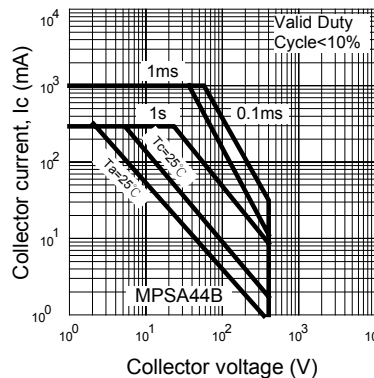


Fig.8 Safe operating area



UTC MPSA44B      NPN EPITAXIAL SILICON TRANSISTOR

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