



MPSA44/45

NPN SILICON TRANSISTOR

HIGH VOLTAGE TRANSISTOR

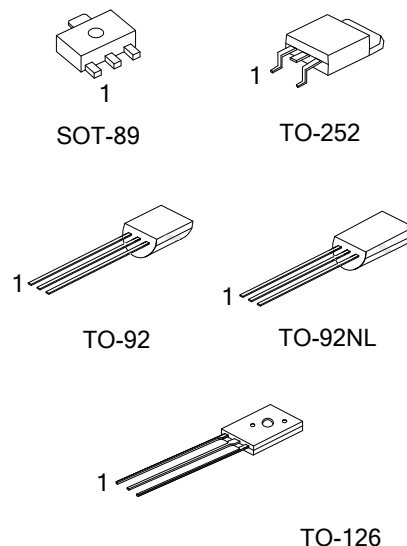
■ FEATURES

* Collector-Emitter Voltage:

$V_{CE0}=400V$ (UTC **MPSA44**)

$V_{CE0}=350V$ (UTC **MPSA45**)

* Collector Current up to 300mA



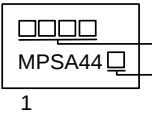
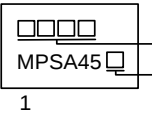
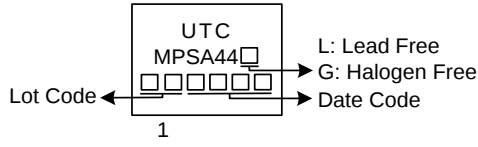
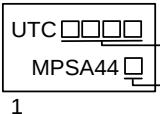
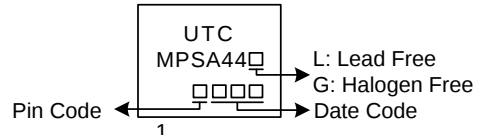
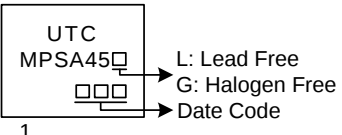
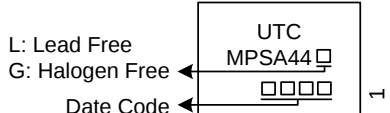
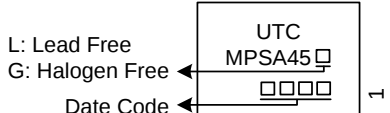
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MPSA44L-AB3-R	MPSA44G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA44L-AN3-R	MPSA44G-TN3-R	TO-252	B	C	E	Tape Reel
MPSA44L-T60-K	MPSA44G-T60-K	TO-126	B	C	E	Bulk
MPSA44L-T92-B	MPSA44G-T92-B	TO-92	E	B	C	Tape Box
MPSA44L-T92-K	MPSA44G-T92-K	TO-92	E	B	C	Bulk
MPSA44L-T92-A-B	MPSA44G-T92-A-B	TO-92	E	C	B	Tape Box
MPSA44L-T92-A-K	MPSA44G-T92-A-K	TO-92	E	C	B	Bulk
MPSA44L-T9N-B	MPSA44G-T9N-B	TO-92NL	E	C	B	Tape Box
MPSA44L-T9N-K	MPSA44G-T9N-K	TO-92NL	E	C	B	Bulk
MPSA45L-AB3-R	MPSA45G-AB3-R	SOT-89	B	C	E	Tape Reel
MPSA45L-T92-B	MPSA45G-T92-B	TO-92	E	B	C	Tape Box
MPSA45L-T92-K	MPSA45G-T92-K	TO-92	E	B	C	Bulk
MPSA45L-T9N-B	MPSA45G-T9N-B	TO-92NL	E	B	C	Tape Box
MPSA45L-T9N-K	MPSA45G-T9N-K	TO-92NL	E	B	C	Bulk

Note: Pin Assignment: B: Base C: Collector E: Emitter

MPSA44G-T92-A-R (1)Packing Type (2)Pin Assignment (3)Package Type (4)Green Package		(1) B: Tape Box, K: Bulk, R: Tape Reel (2) refer to Pin Assignment (3) AB3: SOT-89, TN3: TO-252, T60: TO-126, T92: TO-92, T9N: TO-92NL (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

Package	MPSA44	MPSA45
SOT-89	 Date Code L: Lead Free G: Halogen Free	 Date Code L: Lead Free G: Halogen Free
TO-252	 L: Lead Free G: Halogen Free Date Code	-
TO-126	 Date Code L: Lead Free G: Halogen Free	-
TO-92	 L: Lead Free G: Halogen Free Date Code	 L: Lead Free G: Halogen Free Date Code
TO-92NL	 L: Lead Free G: Halogen Free Date Code	 L: Lead Free G: Halogen Free Date Code

■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MPSA44	V_{CBO}	500	V
	MPSA45		400	
Collector-Emitter Voltage	MPSA44	V_{CEO}	400	V
	MPSA45		350	
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current		I_C	300	mA
Collector Dissipation	SOT-89	P_C	500	mW
	TO-252		1400	
	TO-126		1200	
	TO-92		625	
Junction Temperature		T_J	125	°C
Operating Temperature		T_{OPR}	-20 ~ +85	°C
Storage Temperature		T_{STG}	-40 ~ +150	°C

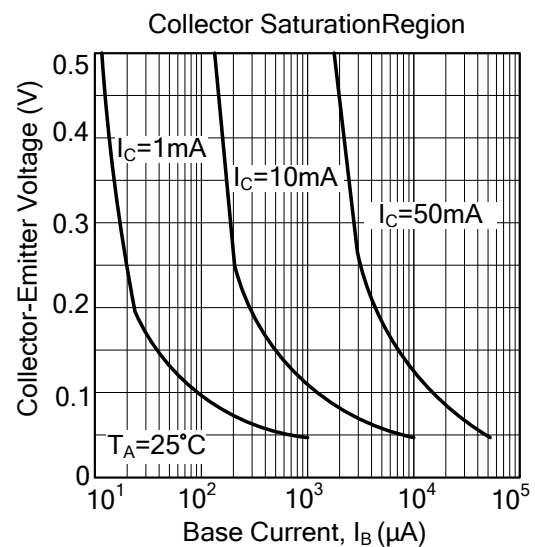
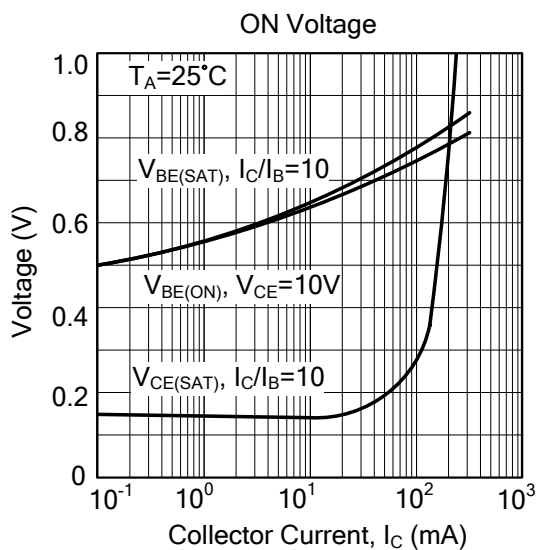
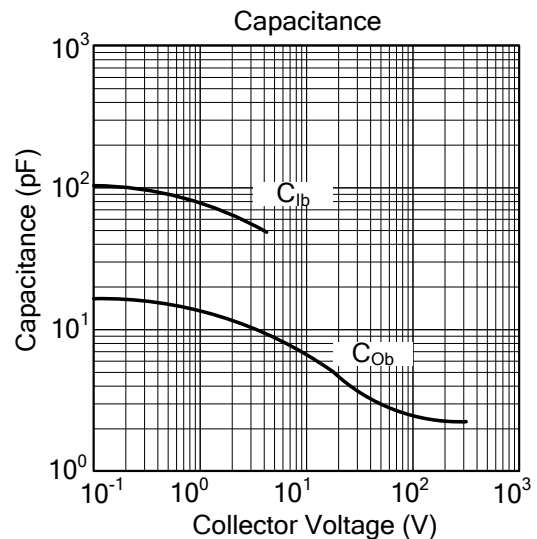
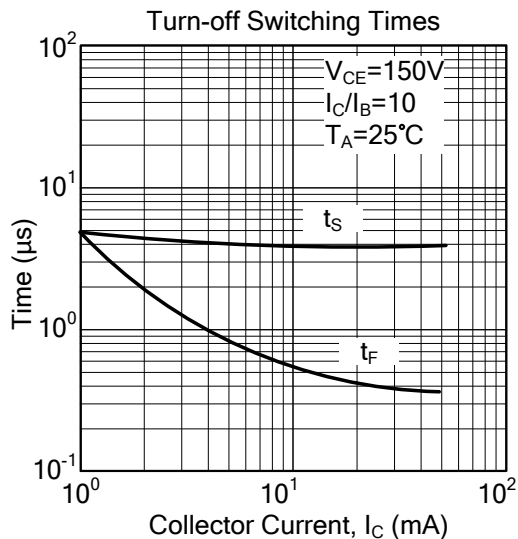
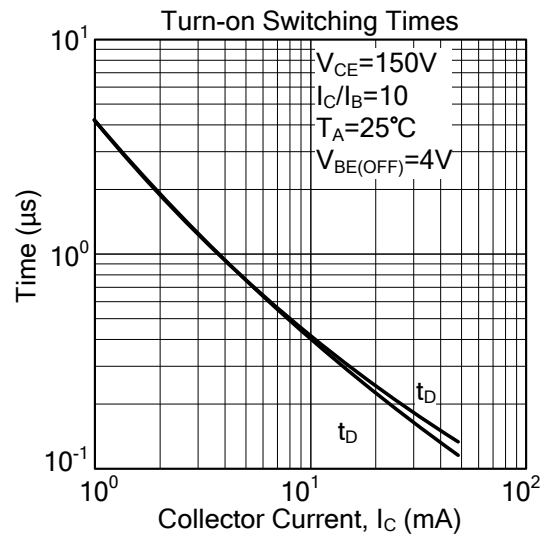
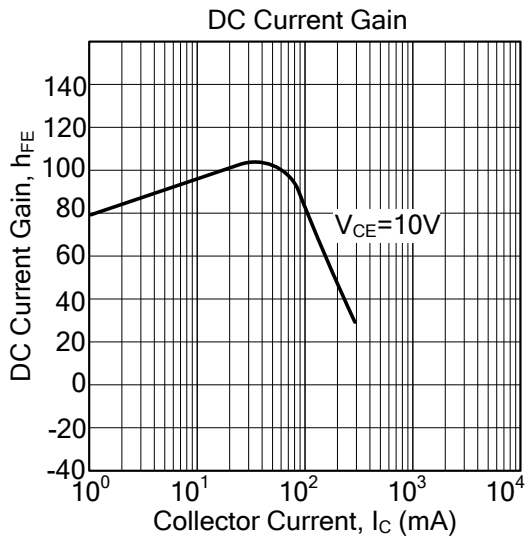
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

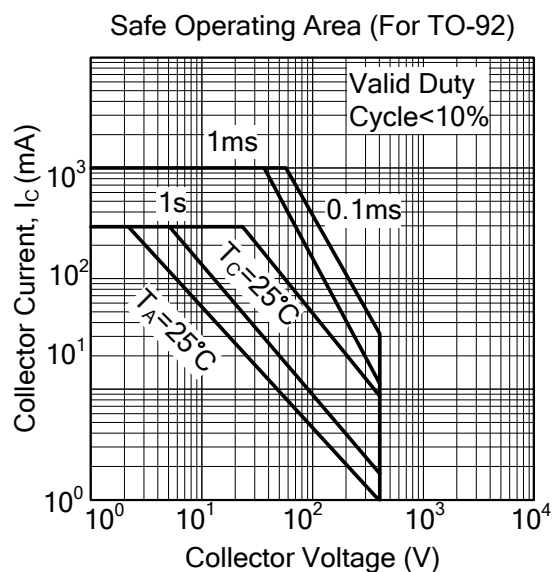
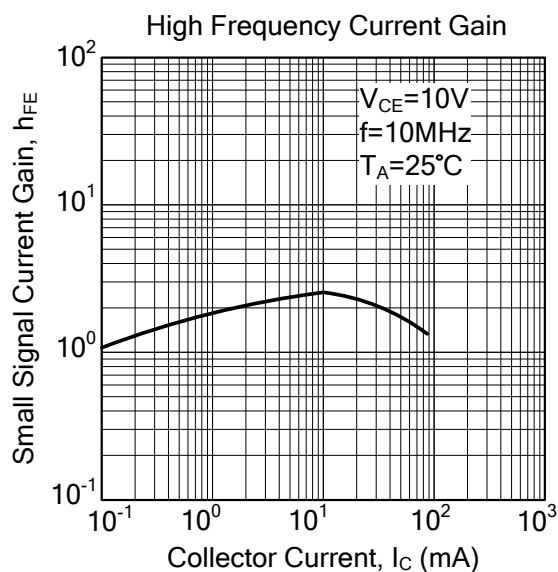
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	MPSA44	BV _{CBO}	I _C =100μA, I _E =0	500			V
	MPSA45			400			
Collector-Emitter Breakdown Voltage	MPSA44	BV _{CEO}	I _C =1mA, I _B =0	400			V
	MPSA45			350			
Emitter-Base Breakdown Voltage		BV _{EBO}	I _E =100μA, I _C =0	6			V
Collector-Base Cutoff Current	MPSA44	I _{CBO}	V _{CB} =400V, I _E =0			0.1	μA
	MPSA45		V _{CB} =320V, I _E =0			0.1	
Collector Cutoff Current	MPSA44	I _{CES}	V _{CE} =400V, I _B =0			0.5	μA
	MPSA45		V _{CE} =320V, I _B =0			0.5	
Emitter-Base Cutoff Current		I _{EBO}	V _{EB} =4V, I _C =0			0.1	μA
ON CHARACTERISTICS							
DC Current Gain (Note)		h _{FE}	V _{CE} =10V, I _C =1mA	40		240	
			V _{CE} =10V, I _C =10mA	82		240	
			V _{CE} =10V, I _C =50mA	45		240	
			V _{CE} =10V, I _C =100mA	40		240	
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
SMALL-SIGNAL CHARACTERISTICS							
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: $PW < 300\mu\text{s}$, Duty Cycle $< 2\%$

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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