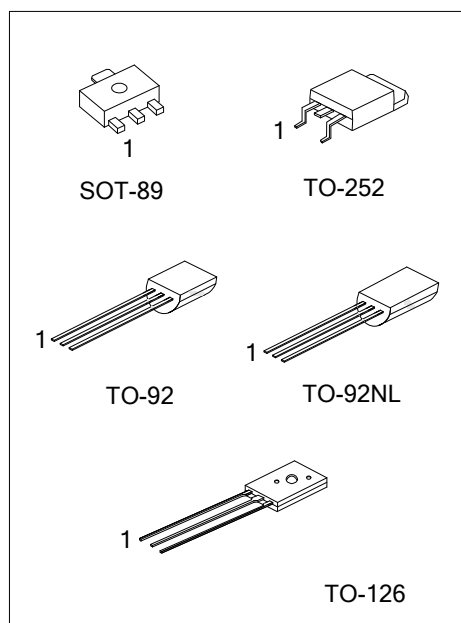


**MPSA44/45****NPN SILICON TRANSISTOR****HIGH VOLTAGE TRANSISTOR****■ FEATURES**

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

MARKING

Package	MPSA44	MPSA45
SOT-89		
TO-252		-
TO-126		-
TO-92		
TO-92NL		

■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage	MPSA44	V_{CB0}	500	V
	MPSA45		400	
Collector-Emitter Voltage	MPSA44	V_{CES}	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 Current (Peak)		I_{CM}	1000	mA
Collector Dissipation($T_A=25^{\circ}\text{C}$)	SOT-89	P_C	500	mW
	TO-252		1400	mW
	TO-126		1200	mW
	TO-92		625	mW
	TO-92NL			
Operating Junction Temperature		T_J	$-40 \sim +150$	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	$-40 \sim +150$	$^{\circ}\text{C}$

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.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-89	θ_{JA}	250	$^{\circ}\text{C/W}$
	TO-252		89	$^{\circ}\text{C/W}$
	TO-126		105	$^{\circ}\text{C/W}$
	TO-92		200	$^{\circ}\text{C/W}$
	TO-92NL			
Junction to Case	SOT-89	θ_{JC}	83	$^{\circ}\text{C/W}$
	TO-252		4	$^{\circ}\text{C/W}$
	TO-126		13	$^{\circ}\text{C/W}$
	TO-92		100	$^{\circ}\text{C/W}$
	TO-92NL			

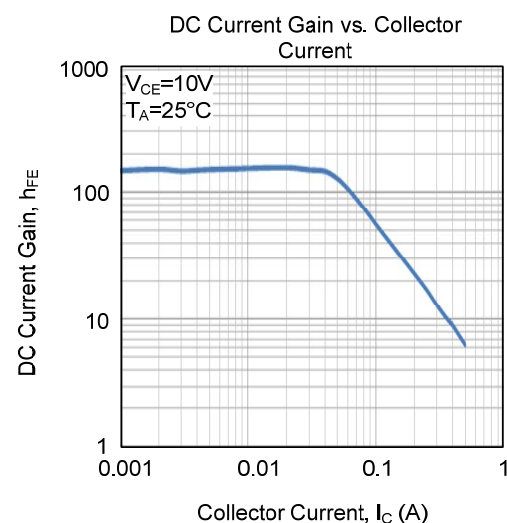
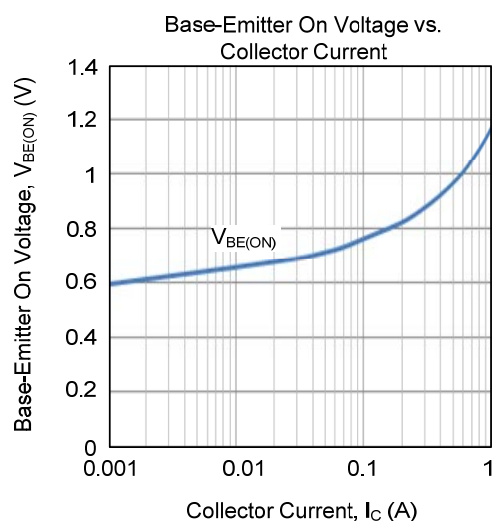
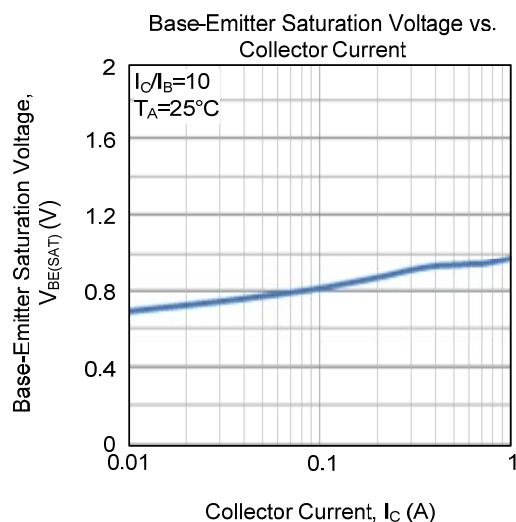
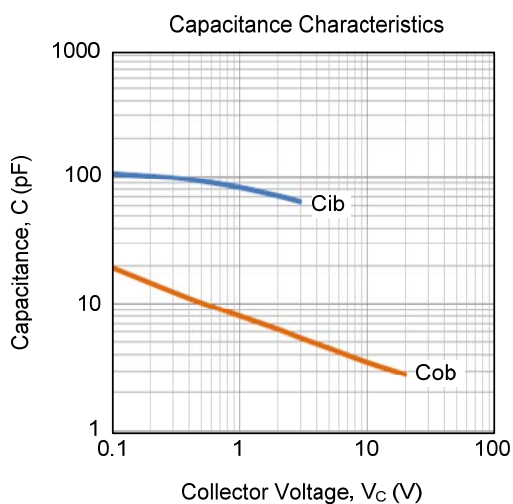
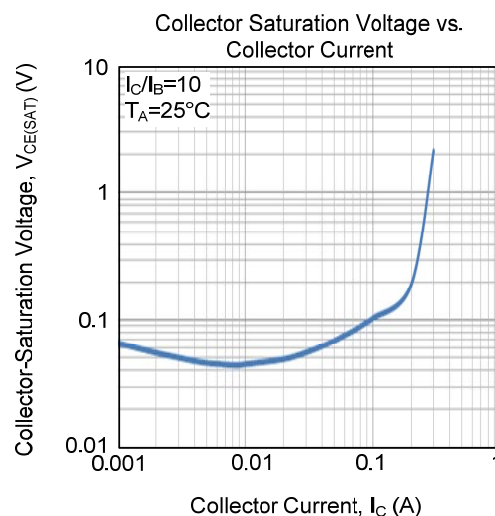
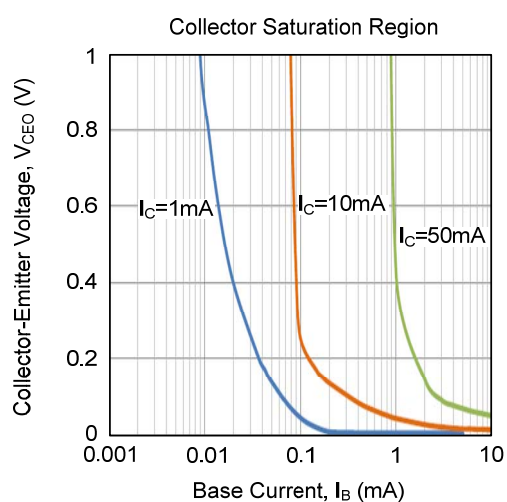
Note: For a device mounted with the exposed collector pad on 25mm x 25mm 1oz copper that is on a single-sided FR4 PCB.

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

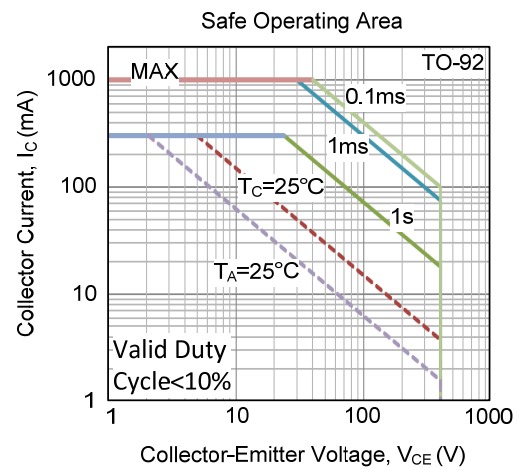
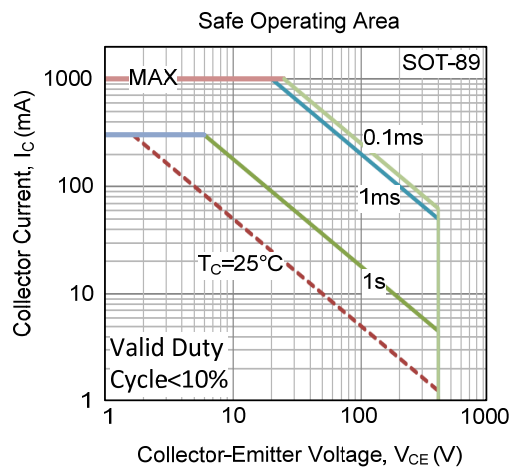
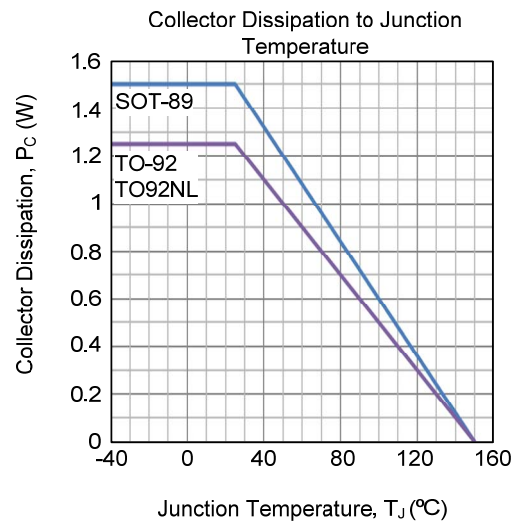
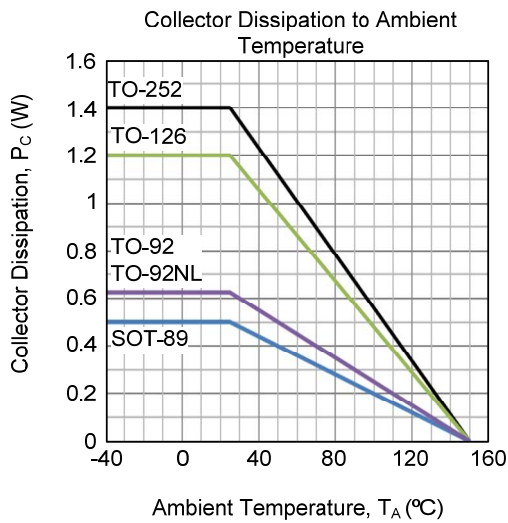
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	MPSA44	BV _{CBO}	I _C =100μA, I _E =0	500			V
	MPSA45			400			V
Collector-Emitter Breakdown Voltage	MPSA44	BV _{CES}	I _C =100μA, I _B =0, V _{EB} =0V	500			V
	MPSA45			400			V
Collector-Emitter Breakdown Voltage	MPSA44	BV _{CEO}	I _C =1mA, I _B =0	400			V
	MPSA45			350			V
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	μA
Collector Cutoff Current	MPSA44	I _{CES}	V _{CE} =400V, I _B =0, V _{EB} =0V			0.5	μA
	MPSA45		V _{CE} =320V, I _B =0, V _{EB} =0V			0.5	μA
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	80		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	V
			I _C =50mA, I _B =5mA			0.75	V
Base-Emitter Saturation Voltage		V _{BE(SAT)}	I _C =10mA, I _B =1mA			0.75	V
SMALL-SIGNAL CHARACTERISTICS							
Current Gain Bandwidth Product		f _r	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



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