



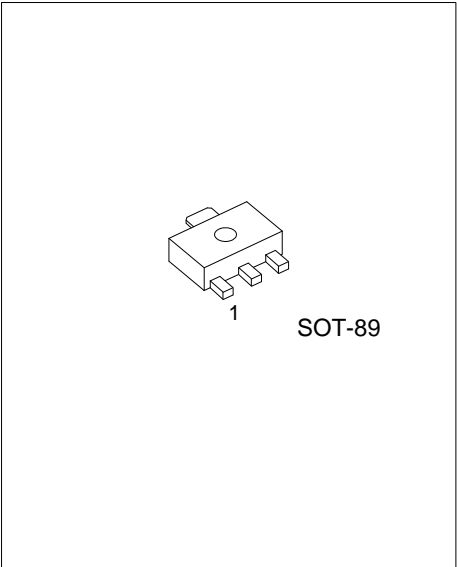
## MPSA44A

NPN SILICON TRANSISTOR

### HIGH VOLTAGE TRANSISTOR

#### FEATURES

- \* Collector-Emitter Voltage:  $V_{CE0}=400V$
- \* Collector Current up to 300mA



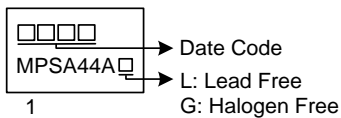
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MPSA44AL-AB3-R	MPSA44AG-AB3-R	SOT-89	B	C	E	Tape Reel

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

<p>MPSA44AG-AB3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AB3: SOT-89 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



### ■ ABSOLUTE MAXIMUM RATING

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 Current	$I_C$	300	mA
Collector Current (Peak)	$I_{CM}$	1000	mA
Collector Dissipation	$P_C$	500	mW
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	$BV_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	500			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1\text{mA}, I_B=0$	400			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=400\text{V}, I_E=0$			0.1	$\mu\text{A}$
Collector Cutoff Current	$I_{CES}$	$V_{CE}=400\text{V}, I_B=0$			0.5	$\mu\text{A}$
Emitter-Base Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			0.1	$\mu\text{A}$

### ON CHARACTERISTICS

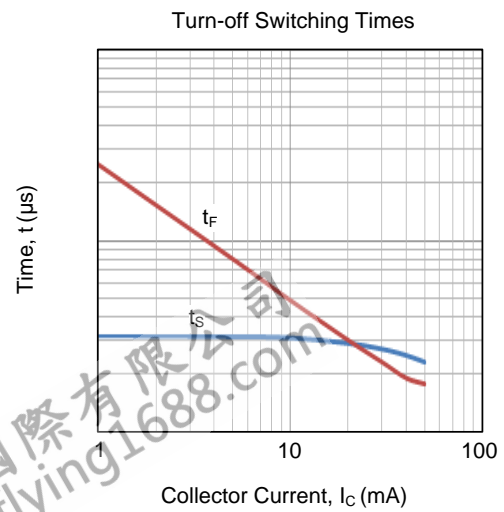
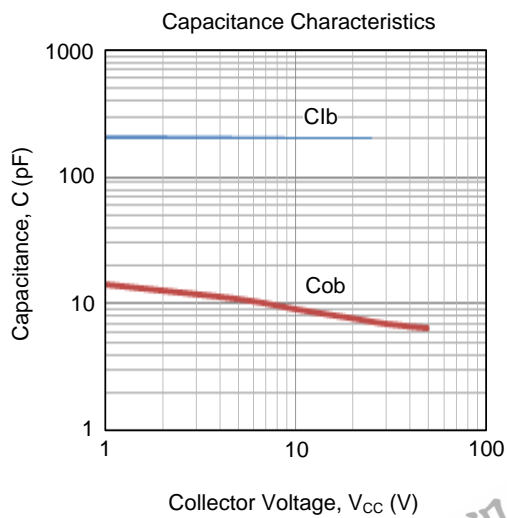
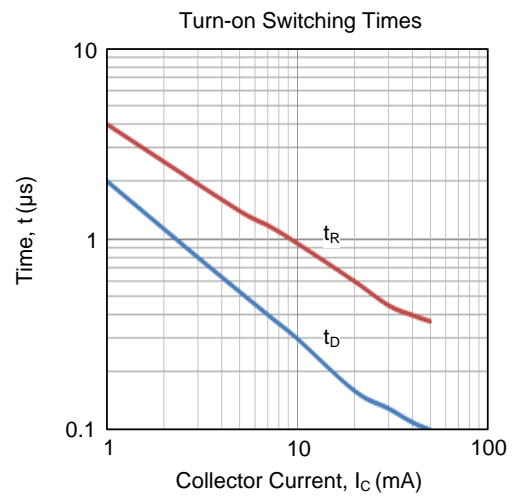
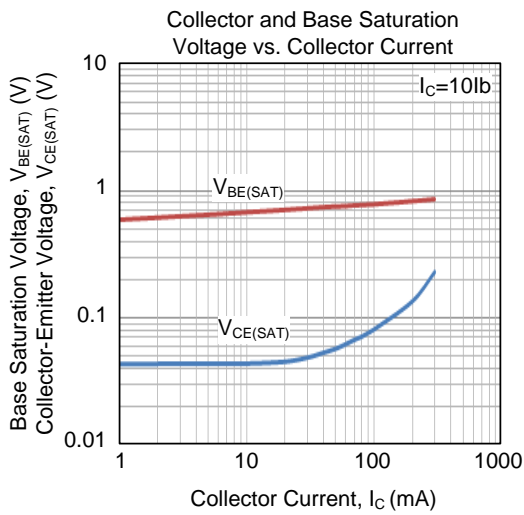
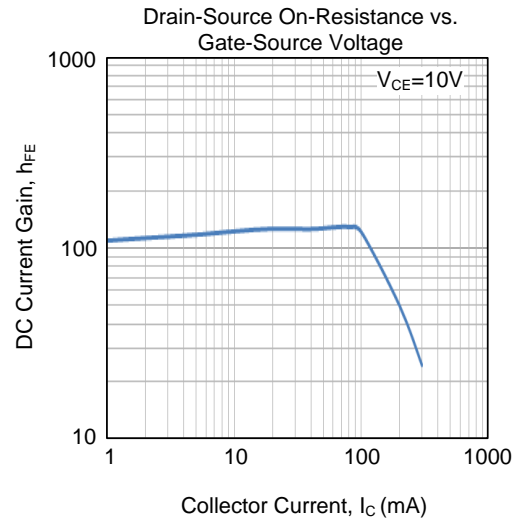
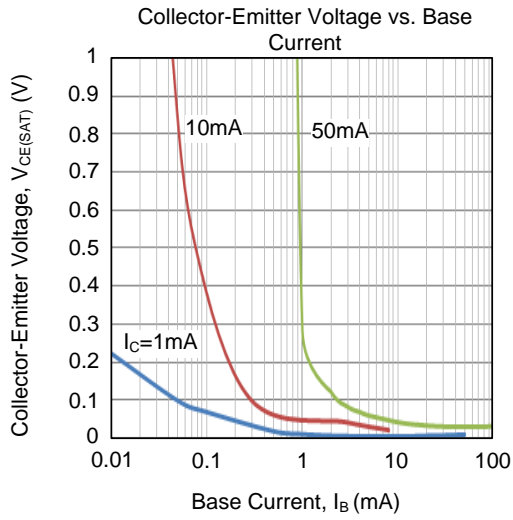
DC Current Gain (Note)	$h_{FE}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	25		240	
		$V_{CE}=10\text{V}, I_C=10\text{mA}$	25		240	
		$V_{CE}=10\text{V}, I_C=50\text{mA}$	45		240	
		$V_{CE}=10\text{V}, I_C=100\text{mA}$	40		240	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=1\text{mA}, I_B=0.1\text{mA}$			0.4	V
		$I_C=10\text{mA}, I_B=1\text{mA}$			0.5	
		$I_C=50\text{mA}, I_B=5\text{mA}$			0.75	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.75	V

### SMALL-SIGNAL CHARACTERISTICS

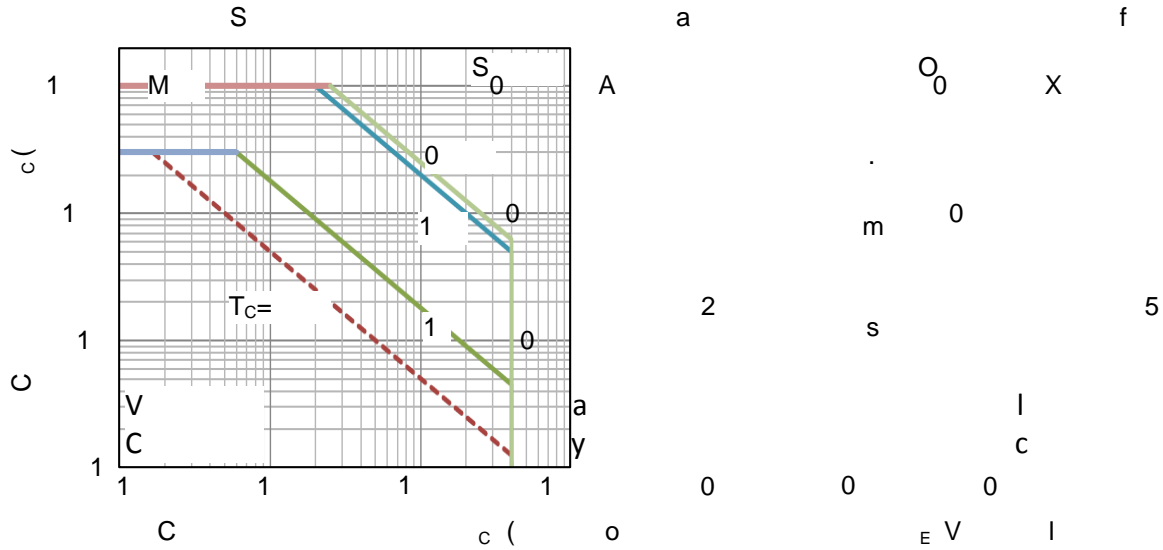
Current Gain Bandwidth Product	$f_T$	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	50			MHz
Output Capacitance	$C_{OB}$	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			7	pF

Note: Pulse test:  $P_W < 300\mu\text{s}$ , Duty Cycle  $< 2\%$ .

## TYPICAL CHARACTERISTICS



### TYPICAL CHARACTERISTICS (Cont.)



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