



## MMBTA94

PNP SILICON TRANSISTOR

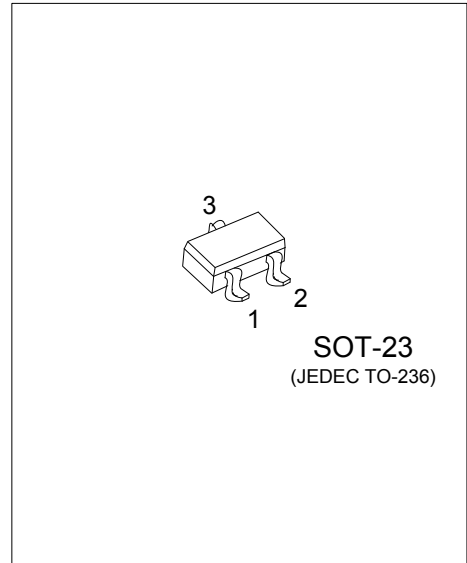
### HIGH VOLTAGE TRANSISTOR

#### FEATURES

- \* Collector-Emitter Voltage:  $V_{CE0} = -400V$
- \* Collector Dissipation:  $P_{C(MAX)} = 350mW$
- \* Low Collector-Emitter Saturation Voltage

#### APPLICATIONS

- \* Telephone Switching
- \* High Voltage Switch



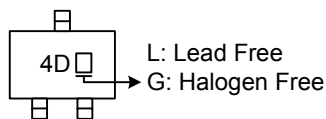
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBTA94L-AE3-R	MMBTA94G-AE3-R	SOT-23	B	E	C	Tape Reel

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

<p>MMBTA94G-AE3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



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### ■ ABSOLUTE MAXIMUM RATING ( $T_A=25^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT	
Collector-Base Voltage	$V_{CB0}$	-400	V	
Collector-Emitter Voltage	$V_{CEO}$	-400	V	
Emitter-Base Voltage	$V_{EBO}$	-6	V	
Collector Current	DC	$I_C$	-300	mA
	Pulse	$I_{CP}$	-800	mA
Collector Current	Pulsed	$I_{CM}$	-800	mA
Collector Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	350	mW	
Junction Temperature	$T_J$	+150	$^\circ\text{C}$	
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$	

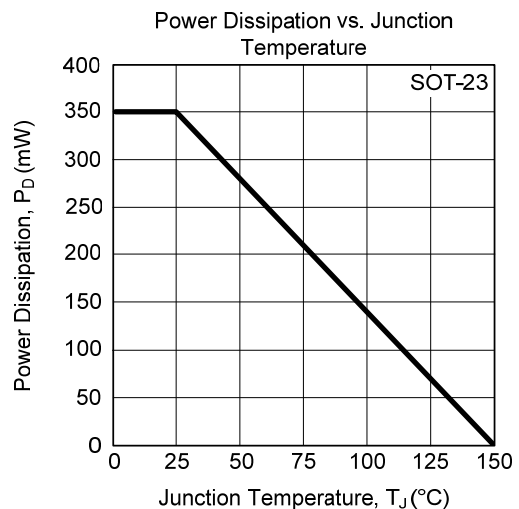
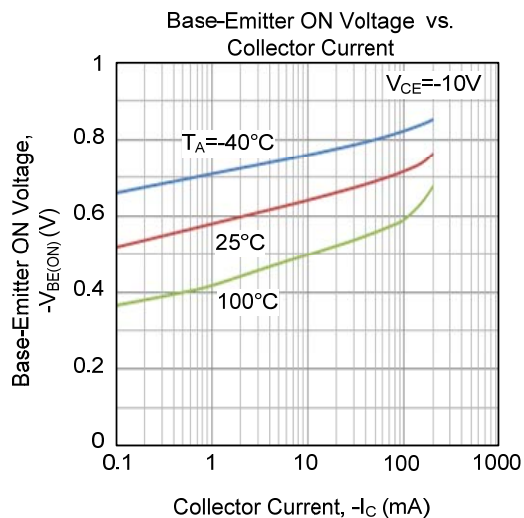
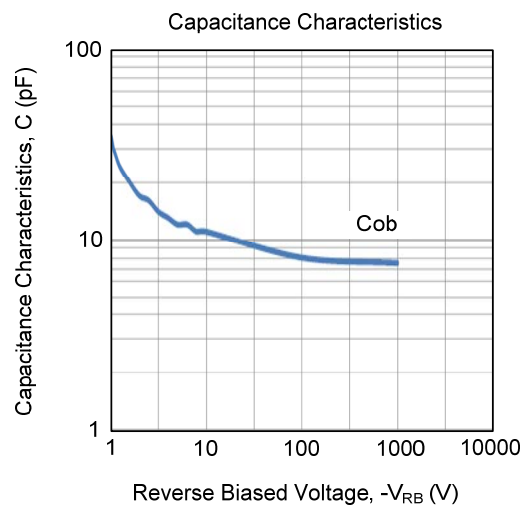
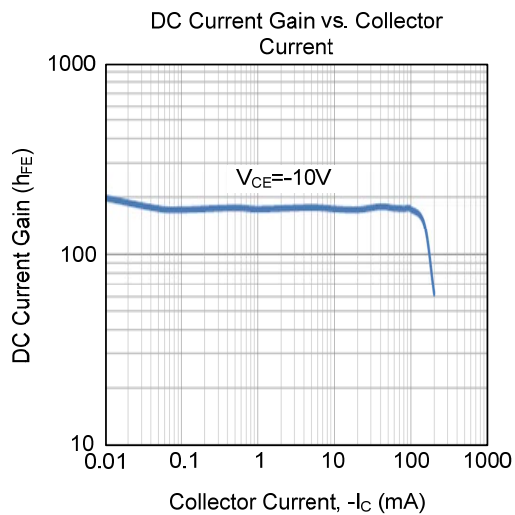
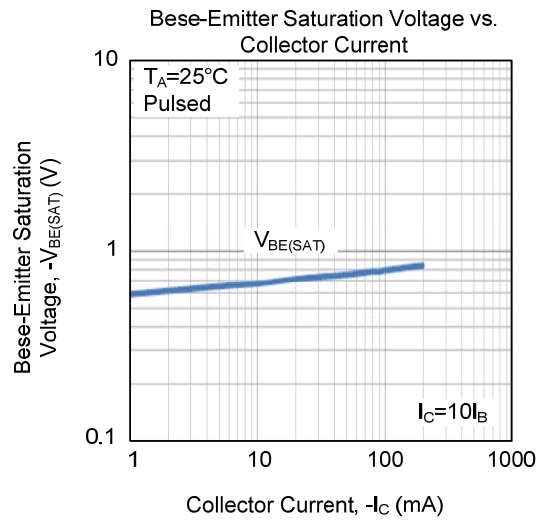
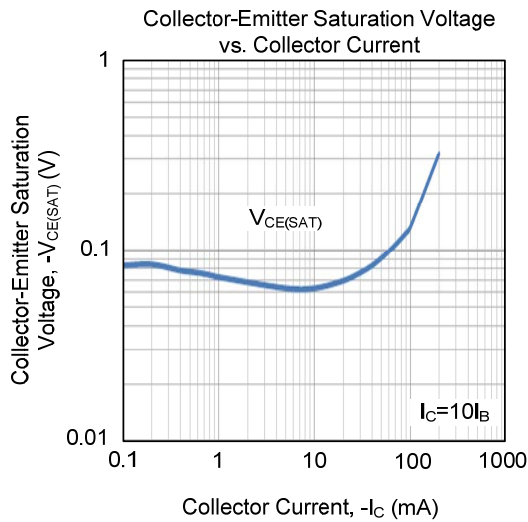
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = -100\mu\text{A}, I_E=0$	-400			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = -1\text{mA}, I_B=0$	-400			V
Collector-Emitter Breakdown Voltage	$BV_{CES}$	$I_C = -100\mu\text{A}, V_{BE}=0$	-400			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -100\mu\text{A}, I_C=0$	-5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = -300\text{V}, I_E=0$			-100	nA
Collector Cut-off Current	$I_{CES}$	$V_{CB} = -400\text{V}, V_{BE}=0$			-1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = -4\text{V}, I_C=0$			100	nA
DC Current Gain (Note)	$h_{FE}$	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	60			
		$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	70		300	
		$V_{CE} = -10\text{V}, I_C = -50\text{mA}$	70			
		$V_{CE} = -10\text{V}, I_C = -100\text{mA}$	40			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$			-0.20	V
		$I_C = -50\text{mA}, I_B = -5\text{mA}$			-0.5	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$			-0.75	V
Output Capacitance	$C_{ob}$	$V_{CB} = -20\text{V}, I_E=0, f = 1\text{MHz}$			7	pF

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

### TYPICAL CHARACTERISTICS



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