



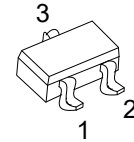
MMBTA144

NPN SILICON TRANSISTOR

HIGH VOLTAGE TRANSISTOR

■ FEATURES

- * Collector-Emitter Voltage:
- * $V_{CE0}=500V$
- * Collector Current up to 300mA

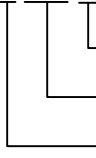


SOT-23
(JEDEC TO-236)

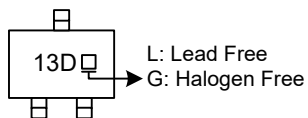
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBTA144L-AE3-R	MMBTA144G-AE3-R	SOT-23	B	E	C	Tape Reel

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

MMBTA144G-AE3-R	
	(1) Packing Type
	(2) Package Type
	(3) Green Package
	(1) R: Tape Reel
	(2) AE3: SOT-23
	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	500	V
Collector-Emitter Voltage	V_{CEO}	500	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	300	mA
Collector Dissipation($T_A=25^{\circ}\text{C}$)	P_C	350	mW
Operating Junction Temperature	T_J	-40 ~ +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150	$^{\circ}\text{C}$

Note: 1. 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.

2. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	357	$^{\circ}\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ 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}	$I_C=1\text{mA}$, $I_B=0$	500			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}$, $I_C=0$	6			V
Collector-Base Cutoff Current	I_{CBO}	$V_{CB}=500\text{V}$, $I_E=0$			0.1	μA
Collector Cutoff Current	I_{CES}	$V_{CE}=500\text{V}$, $I_B=0$			0.5	μA
Emitter-Base Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0$			0.1	μA

ON CHARACTERISTICS

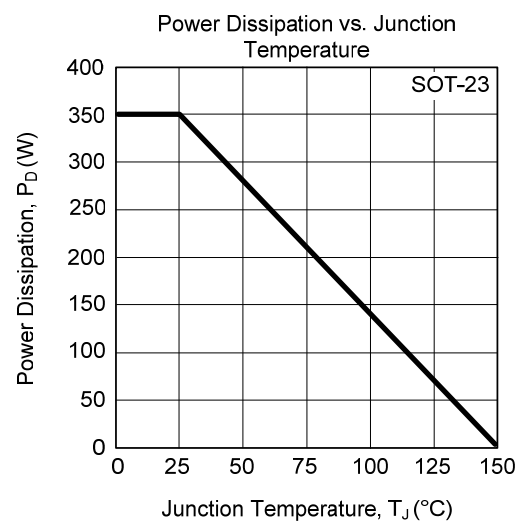
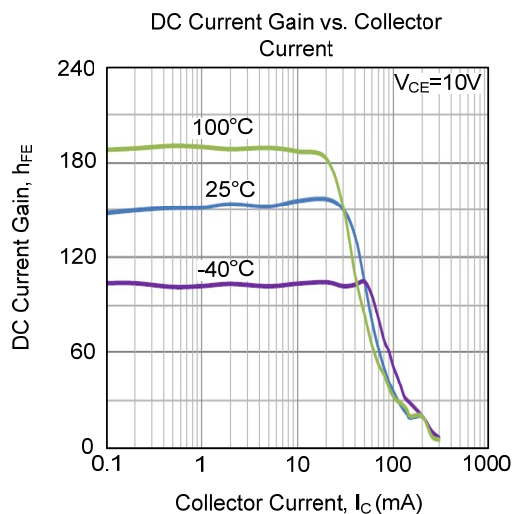
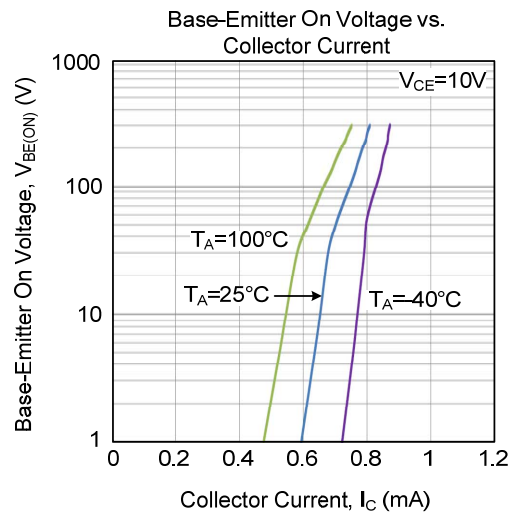
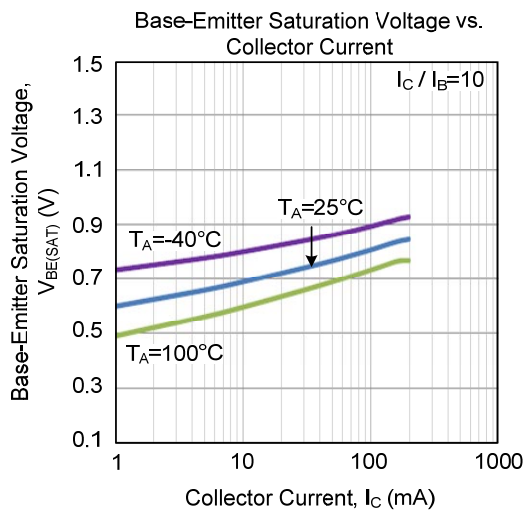
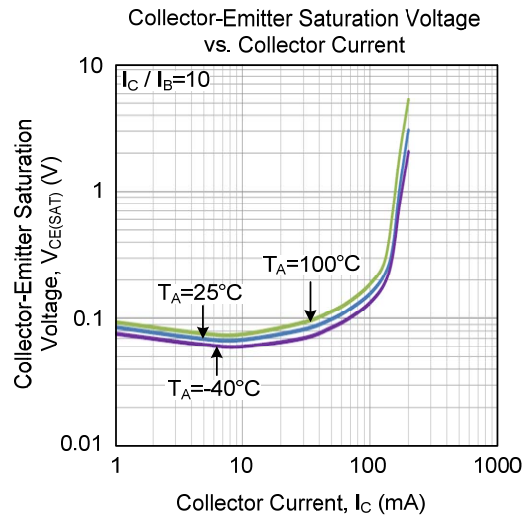
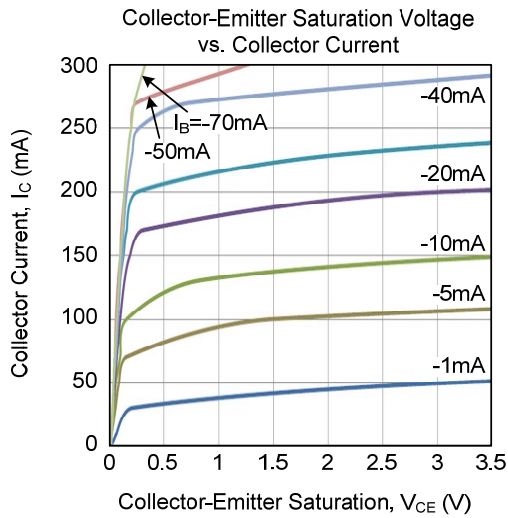
DC Current Gain (Note)	h_{FE}	$V_{CE}=10\text{V}$, $I_C=1\text{mA}$	80			
		$V_{CE}=10\text{V}$, $I_C=10\text{mA}$	82			
		$V_{CE}=10\text{V}$, $I_C=50\text{mA}$	45			
		$V_{CE}=10\text{V}$, $I_C=100\text{mA}$	20			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=1\text{mA}$, $I_B=0.1\text{mA}$			0.4	V
		$I_C=10\text{mA}$, $I_B=1\text{mA}$			0.5	V
		$I_C=50\text{mA}$, $I_B=5\text{mA}$			0.75	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10\text{mA}$, $I_B=1\text{mA}$			0.75	V

SMALL-SIGNAL CHARACTERISTICS

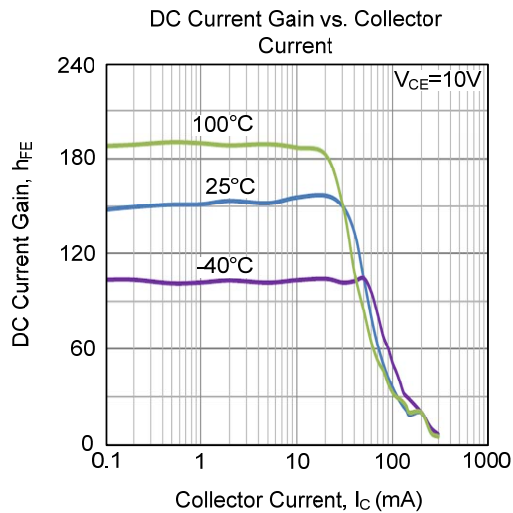
Current Gain Bandwidth Product	f_T	$V_{CE}=20\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$	50			MHz
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Note: Pulse test: $PW < 300\mu\text{s}$, Duty Cycle $< 2\%$

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



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