



MMBTA56

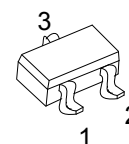
PNP SILICON TRANSISTOR

AMPLIFIER TRANSISTOR

■ FEATURES

* Collector-Emitter Voltage: $V_{CEO} = -80V$

* Collector Dissipation: $P_D = 350mW$



SOT-23
(JEDEC TO-236)

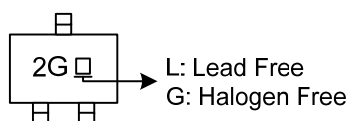
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBTA56L-AE3-R	MMBTA56G-AE3-R	SOT-23	B	E	C	Tape Reel

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

MMBTA56G-AE3-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) AE3: SOT-23
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-80	V
Emitter-Base Voltage	V_{EBO}	-4	V
Collector Current - Continuous	I_C	-500	mA
Total Device Dissipation (Note 2)	P_D	350	mW
Derate Above 25°C		2.8	mW/ $^{\circ}\text{C}$
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Notes: 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=1.6×1.6×0.06 in.

■ THERMAL DATA

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

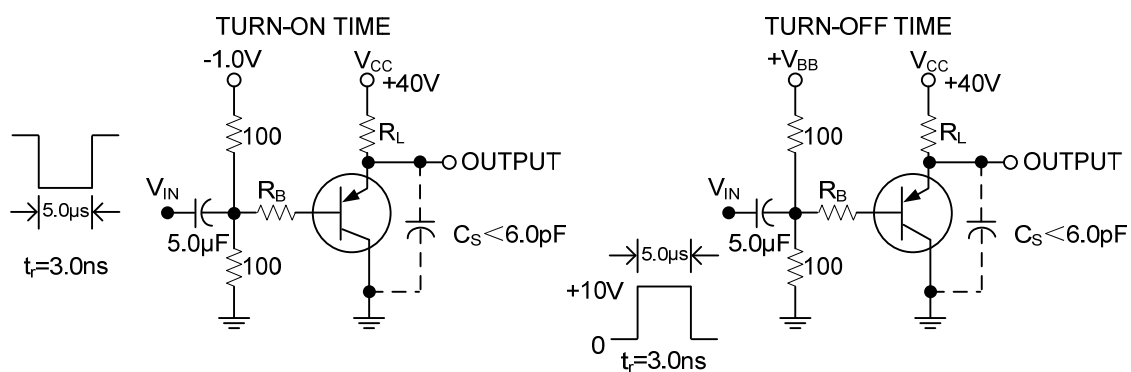
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (Note 1)	BV_{CEO}	$I_C = -1.0\text{mA}$, $I_B = 0$	-80			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -100\mu\text{A}$, $I_C = 0$	-4			V
Collector Cutoff Current	I_{CES}	$V_{CE} = -60\text{V}$, $I_B = 0$			-0.1	μA
Collector Cutoff Current	I_{CBO}	$V_{CB} = -80\text{V}$, $I_E = 0$			-0.1	μA
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	$I_C = -10\text{mA}$, $V_{CE} = -1\text{V}$ $I_C = -100\text{mA}$, $V_{CE} = -1\text{V}$	100 100			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -100\text{mA}$, $I_B = -10\text{mA}$			-0.25	V
Base-Emitter on Voltage	$V_{BE(ON)}$	$I_C = -100\text{mA}$, $V_{CE} = -1\text{V}$			-1.2	V
SMALL-SIGNAL CHARACTERISTICS						
Current Gain Bandwidth Product (Note2)	f_T	$I_C = -10\text{mA}$, $V_{CE} = -2\text{V}$, $f = 100\text{MHz}$	100			MHz

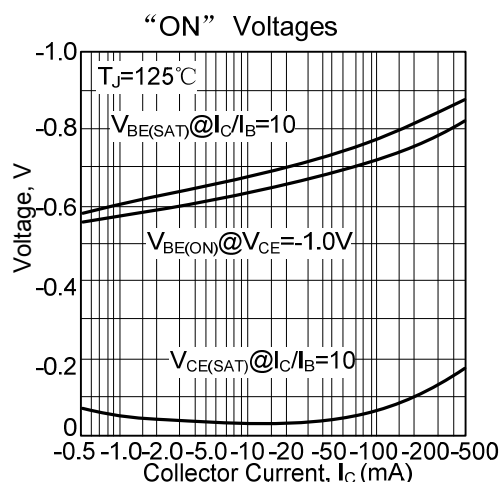
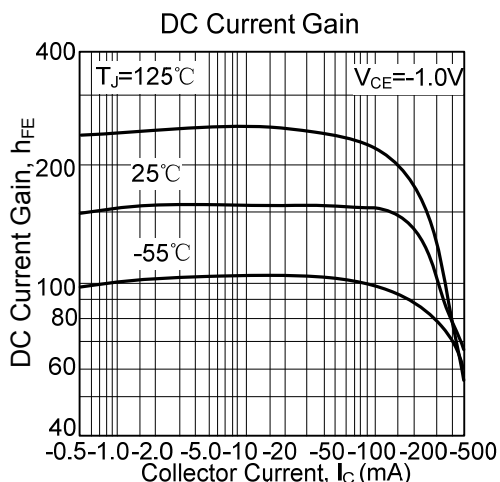
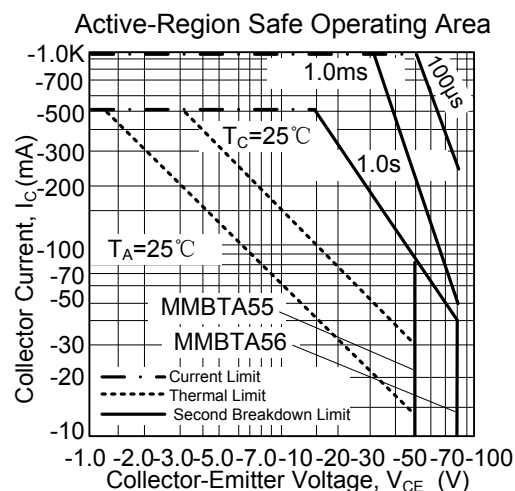
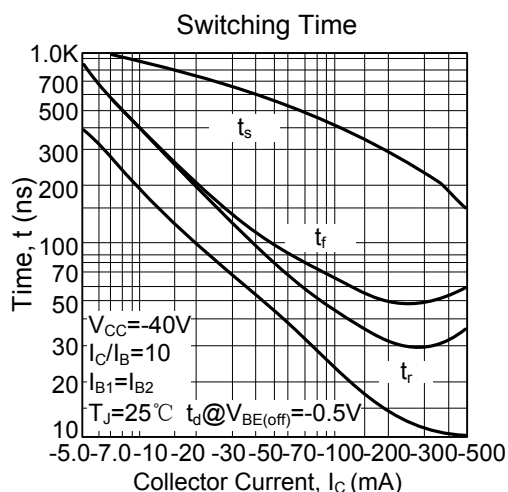
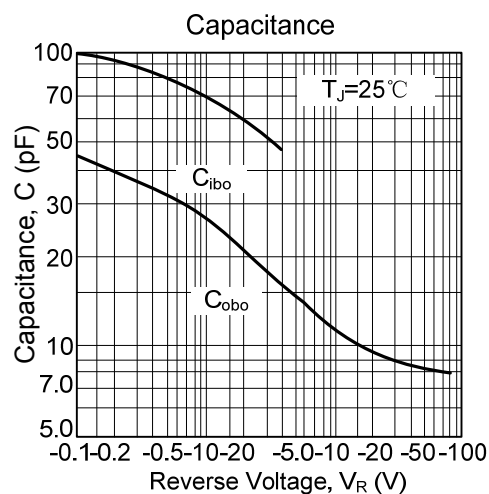
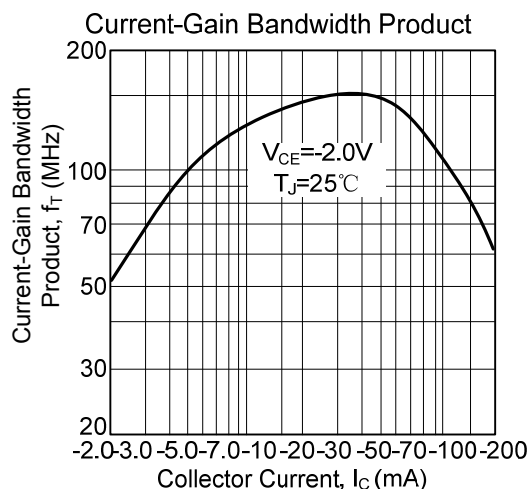
Notes: 1. Pulse test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

2. f_T is defined as the frequency at which I_{hfe} extrapolates to unity.

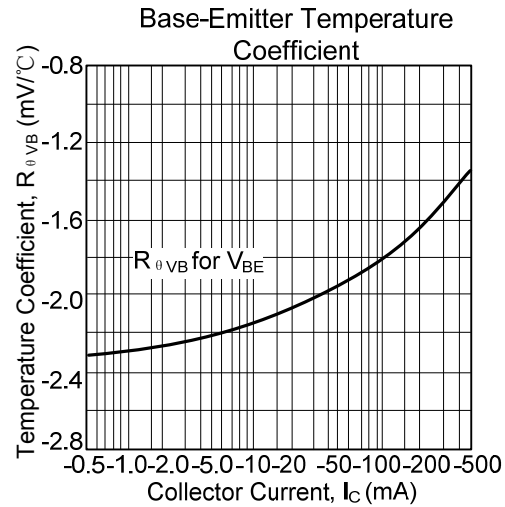
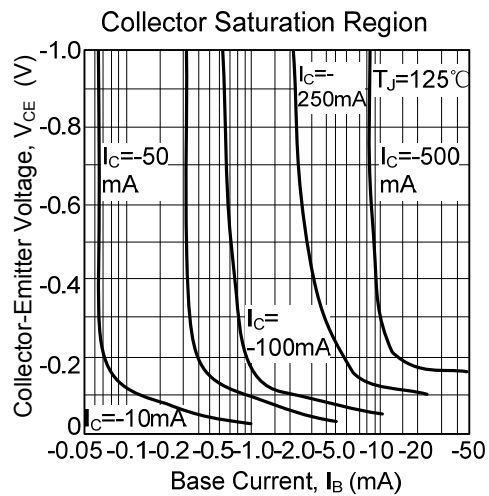
■ SWITCHING TIME TEST CIRCUITS



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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