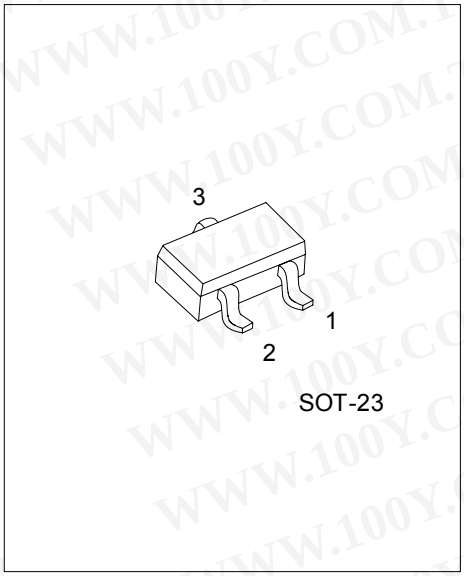
MMBTA56

PNP SILICON TRANSISTOR

AMPLIFIER TRANSISTOR



*Pb-free plating product number: MMBTA56L

■ FEATURES

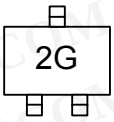
* Collector-Emitter Voltage: V_{CEO}=-80V
* Collector Dissipation: P_D=350mW

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MMBTA56-AE3-R	MMBTA56L-AE3-R	SOT-23	E	B	C	Tape Reel

MMBTA56L-AE3-R (1)Packing Type (2)Package Type (3)Lead Plating	(1) R: Tape Reel (2) AE3: SOT-23 (3) L: Lead Free Plating, Blank: Pb/Sn

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25℃)

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 1) Derate Above 25℃	P_D	350 2.8	mW mW/℃
Junction Temperature	T_J	+150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Note 1. Device mounted on FR-4=1.6×1.6×0.06 in

2. 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	MAX	UNIT
Thermal Resistance, Junction to Ambient	θ_{JA}	357	℃/W

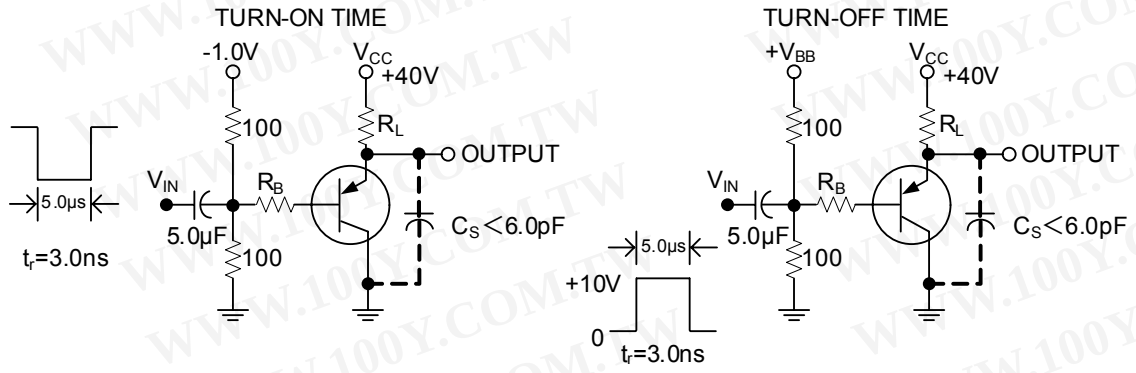
■ ELECTRICAL CHARACTERISTICS (Ta=25℃, unless otherwise specified)

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

Note 1: Pulse test: PW≤300μs, Duty Cycle≤2%

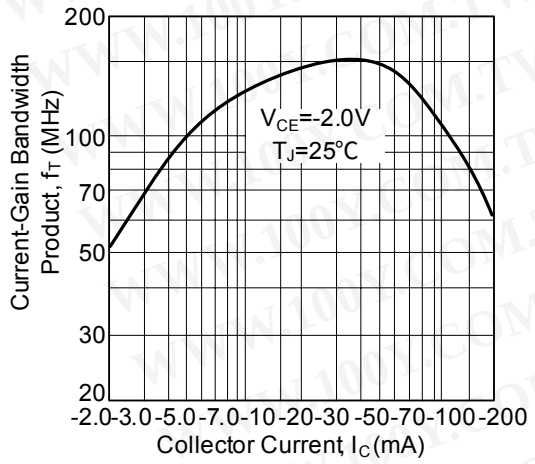
2: f_T is defined as the frequency at which |hfe| extrapolates to unity.

■ SWITCHING TIME TEST CIRCUITS

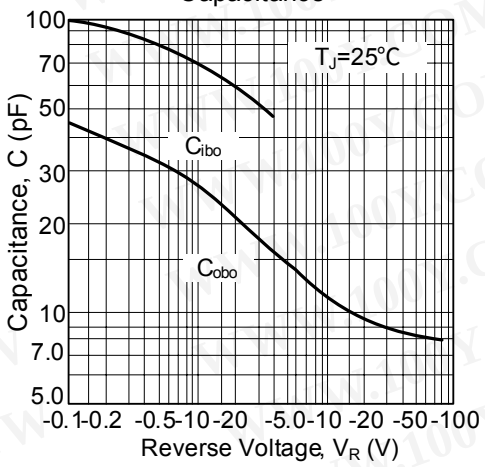


■ TYPICAL CHARACTERISTICS

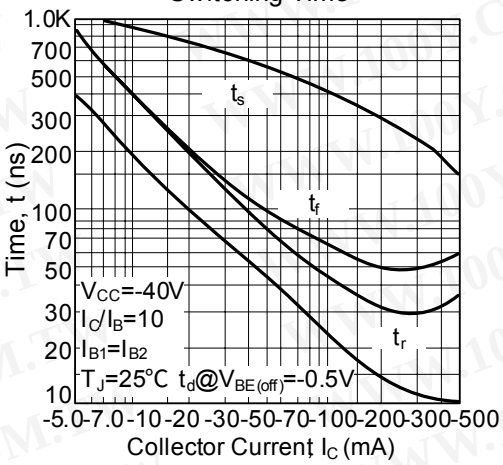
Current-Gain Bandwidth Product



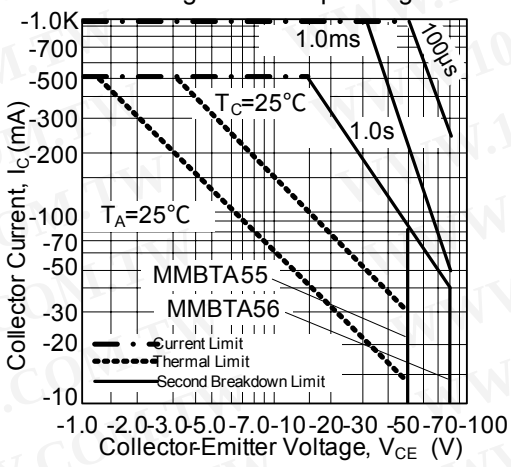
Capacitance



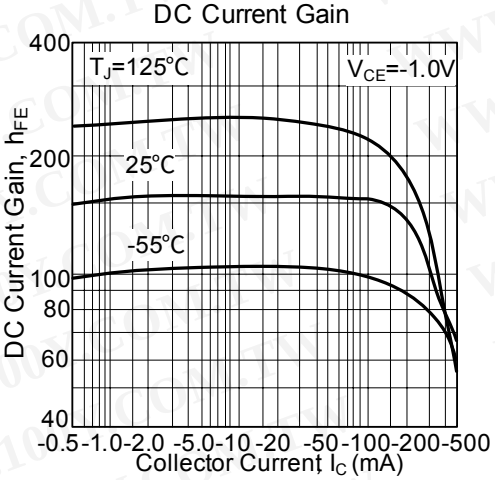
Switching Time



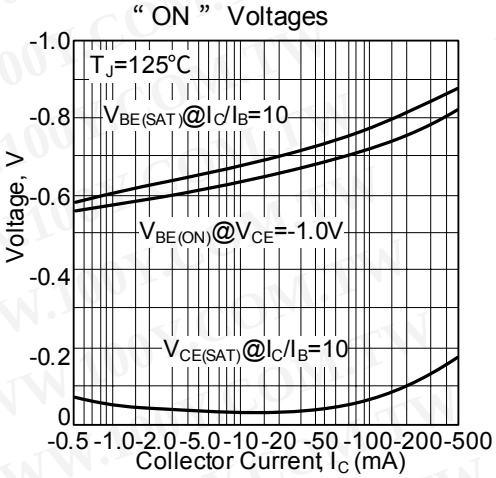
Active-Region Safe Operating Area



DC Current Gain

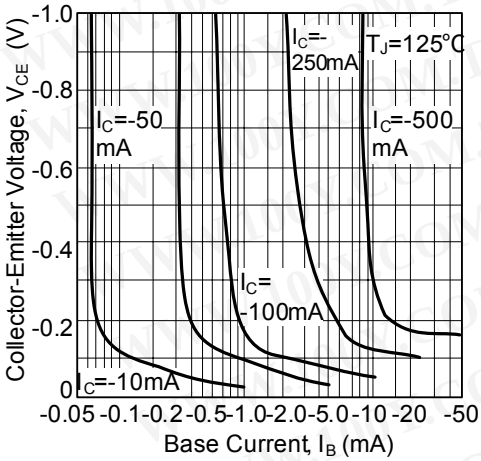


" ON " Voltages



■ TYPICAL CHARACTERISTICS(Cont.)

Collector Saturation Region



Base-Emitter Temperature Coefficient