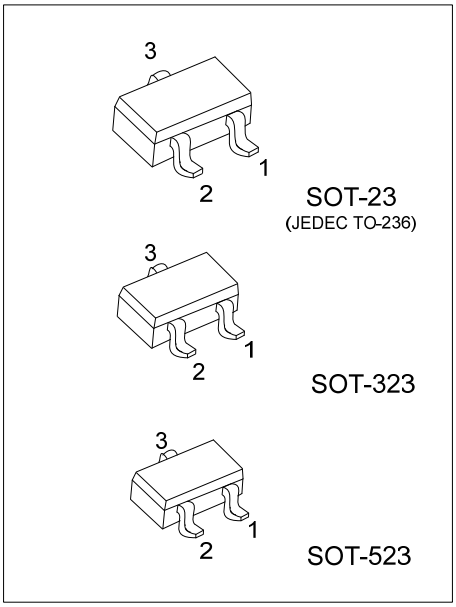
MMBT3906

PNP SILICON TRANSISTOR

GENERAL PURPOSE APPLIATION



■ FEATURES

* Collector-Emitter Voltage: V_{CEO}=40V
* Complementary to UTC MMBT3904

■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT3906L-AE3-R	MMBT3906G-AE3-R	SOT-23	E	B	C	Tape Reel
MMBT3906L-AL3-R	MMBT3906G-AL3-R	SOT-323	E	B	C	Tape Reel
MMBT3906L-AN3-R	MMBT3906G-AN3-R	SOT-523	E	B	C	Tape Reel

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

MMBT3906G-AE3-R

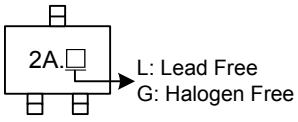
(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel

(2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523

(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



Copyright © 2017 Unisonic Technologies Co., Ltd

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector Base Voltage		V_{CBO}	-40	V
Collector Emitter Voltage		V_{CEO}	-40	V
Emitter Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-200	mA
Base Current		I_B	-50	mA
Collector Dissipation	SOT-23	P_C	0.35	W
	SOT-323		0.3	W
	SOT-523		0.27	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +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.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-23	θ_{JA}	360	°C/W
	SOT-323		420	°C/W
	SOT-523		450	°C/W

Note: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.

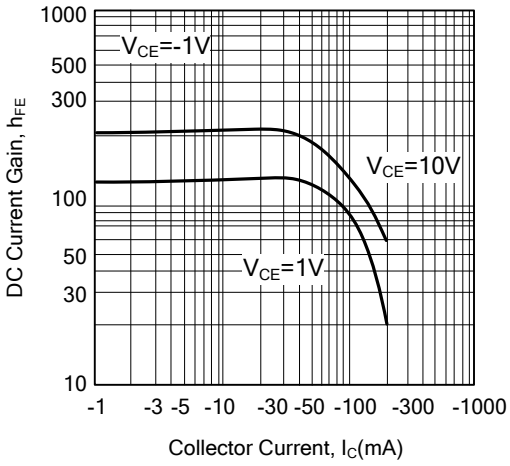
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	I_{CEX}	V_{CE}=-30V, V_{EB}=-3V			-50	nA
Base Cut-off Current	I_{BL}	V_{CE}=-30V, V_{EB}=-3V			-50	nA
Collector-Base Breakdown Voltage	V_{CBO}	I_C=-10μA,I_E=0	-40			V
Collector-Emitter Breakdown Voltage (Note)	V_{CEO}	I_C=-1mA, I_B=0	-40			V
Emitter-Base Breakdown Voltage	V_{EBO}	I_E=-10μA, I_C=0	-5			V
DC Current Gain (Note)	h_{FE1}	V_{CE}=-1V, I_C=-0.1mA	60			
	h_{FE2}	V_{CE}=-1V, I_C=-1mA	80			
	h_{FE3}	V_{CE}=-1V, I_C=-10mA	100		300	
	h_{FE4}	V_{CE}=-1V, I_C=-50mA	60			
	h_{FE5}	V_{CE}=-1V, I_C=-100mA	30			
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}1$	I_C=-10mA, I_B=-1mA			-0.25	V
	$V_{CE(SAT)}2$	I_C=-50mA, I_B=-5mA			-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}1$	I_C=-10mA, I_B=-1mA	-0.65		-0.85	V
	$V_{BE(SAT)}2$	I_C=-50mA, I_B=-5mA			-0.95	V
Transition Voltage	f_T	V_{CE}=-20V, I_C=-10mA, f=100MHz	250			MHz
Output Capacitance	C_{ob}	V_{CB}=-5V,I_E=0, f=1MHz			4.5	pF
Turn on Time	t_{ON}	V_{CC}=-3V, V_{BE}=-0.5V, I_C=-10mA, I_{B1}=-1mA			70	ns
Turn off Time	t_{OFF}	I_{B1}=1_{B2}=-1mA			300	ns

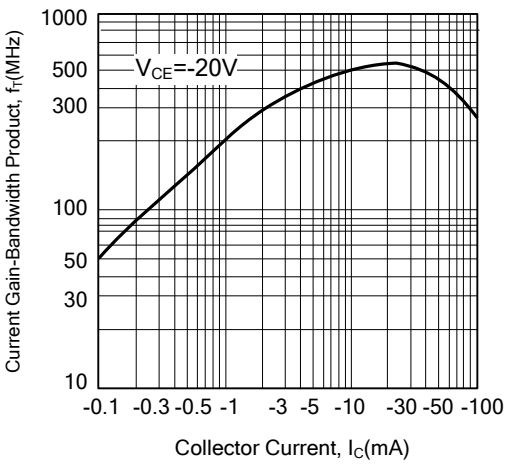
Note: Pulse test: PW≦300μs, Duty Cycle≦2%

■ TYPICAL CHARACTERISTICS

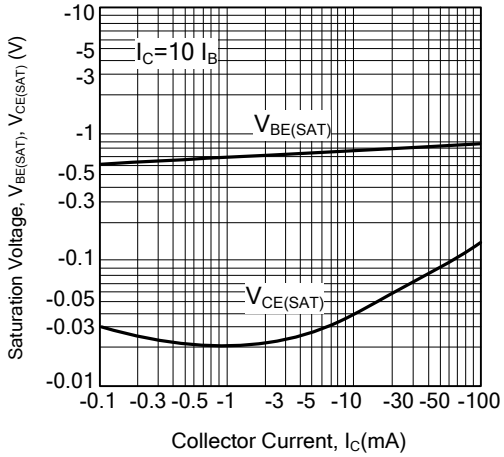
DC Current Gain



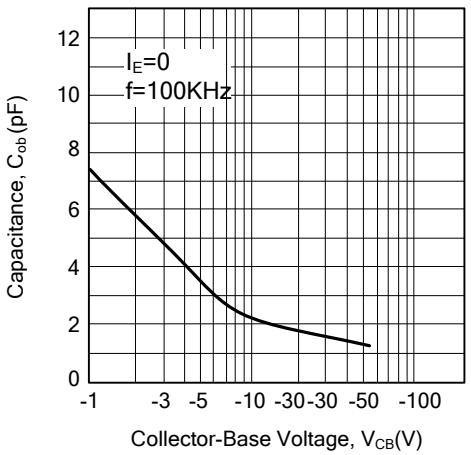
Current Gain-Bandwidth Product



Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Output Capacitance



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.