



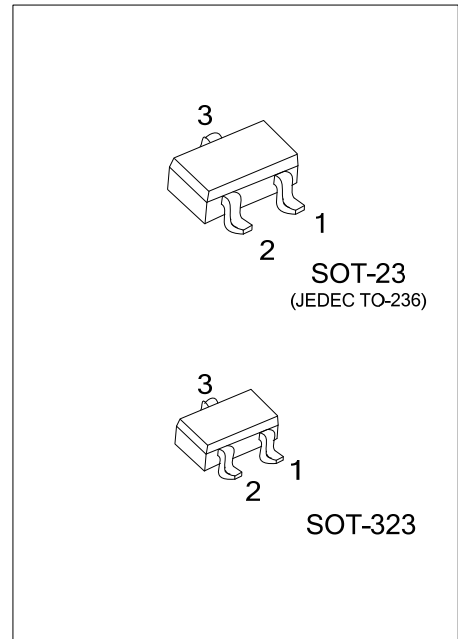
# MMBT2907A

## PNP SILICON TRANSISTOR

### PNP GENERAL PURPOSE AMPLIFIER

#### DESCRIPTION

This UTC **MMBT2907A** is designed for use as a general purpose amplifier and switch requiring collector currents to 600 mA.



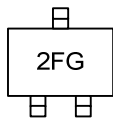
#### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
MMBT2907AG-AE3-R	SOT-23	E	B	C	Tape Reel
MMBT2907AG-AL3-R	SOT-323	E	B	C	Tape Reel

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

<p>MMBT2907AG-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323 (3) G: Halogen Free and Lead Free</p>
--	---

#### MARKING



# MMBT2907A

## PNP SILICON TRANSISTOR

### ■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V <sub>CEO</sub>	-60	V
Collector-Base Voltage	V <sub>CBO</sub>	-60	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current Continuous	I <sub>C</sub>	-600	mA
Power Dissipation	SOT-23	350	mW
	SOT-323	275	mW
Junction Temperature	T <sub>J</sub>	+150	°C
Operating Temperature	T <sub>OPR</sub>	-40 ~ +150	°C
Storage Temperature	T <sub>STG</sub>	-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 Case	SOT-23	357	°C/W
	SOT-323	455	°C/W

### ■ ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Collector-Emitter Breakdown Voltage (Note)	BV <sub>CEO</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-60			V
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =-10μA, I <sub>E</sub> =0	-60			V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0	-5			V
Base Cutoff Current	I <sub>B</sub>	V <sub>CB</sub> =-30V, V <sub>BE</sub> =-0.5V			-50	nA
Collector Cutoff Current	I <sub>CEX</sub>	V <sub>CE</sub> =-30V, V <sub>BE</sub> =-0.5V			-50	nA
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0			-0.02	μA
		V <sub>CB</sub> =-50V, I <sub>E</sub> =0, T <sub>A</sub> =150°C			-20	μA
<b>ON CHARACTERISTICS</b>						
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> =-0.1mA, V <sub>CE</sub> =-10V	75			
		I <sub>C</sub> =-1.0 mA, V <sub>CE</sub> =-10V	100			
		I <sub>C</sub> =-10 mA, V <sub>CE</sub> =-10V	100			
		I <sub>C</sub> =-150 mA, V <sub>CE</sub> =-10V (Note)	100		300	
		I <sub>C</sub> =-500 mA, V <sub>CE</sub> =-10V (Note)	50			
Collector-Emitter Saturation Voltage (Note)	V <sub>CE(SAT)</sub>	I <sub>C</sub> =-150 mA, I <sub>B</sub> =-15mA			-0.4	V
		I <sub>C</sub> =-500 mA, I <sub>B</sub> =-50mA			-1.6	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =-150 mA, I <sub>B</sub> =-15mA (Note)			-1.3	V
		I <sub>C</sub> =-500 mA, I <sub>B</sub> =-50mA			-2.6	V
<b>SMALL SIGNAL CHARACTERISTICS</b>						
Current Gain – Bandwidth Product	f <sub>T</sub>	I <sub>C</sub> =-50mA, V <sub>CE</sub> =-20V, f=100MHz	200			MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=100kHz			8	pF
Input Capacitance	C <sub>ib</sub>	V <sub>EB</sub> =-2V, I <sub>C</sub> =0, f=100kHz			30	pF
<b>SWITCHING CHARACTERISTICS</b>						
Turn-on Time	t <sub>ON</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =-15mA			45	ns
Delay Time	t <sub>DLY</sub>				10	ns
Rise Time	t <sub>R</sub>				40	ns
Turn-off Time	t <sub>OFF</sub>	V <sub>CC</sub> =6V, I <sub>C</sub> =-150mA, I <sub>B1</sub> = I <sub>B2</sub> =-15mA			100	ns
Storage Time	t <sub>S</sub>				80	ns
Fall Time	t <sub>F</sub>				30	ns

Note: Pulse Test: Pulse Width ≤ 300ms, Duty Cycle ≤ 2.0%



## ■ TEST CIRCUITS

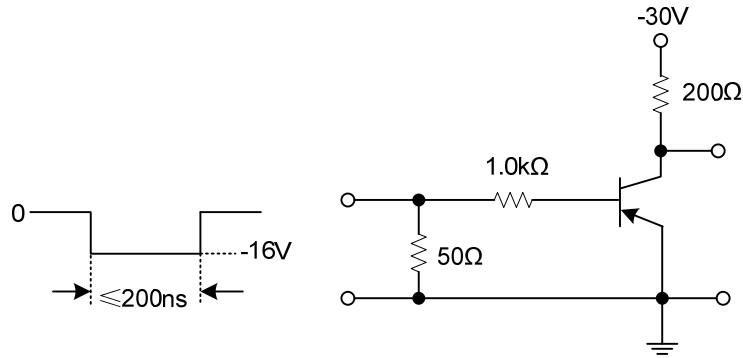


Fig 1. Saturated Turn-On Switching Time Test Circuit

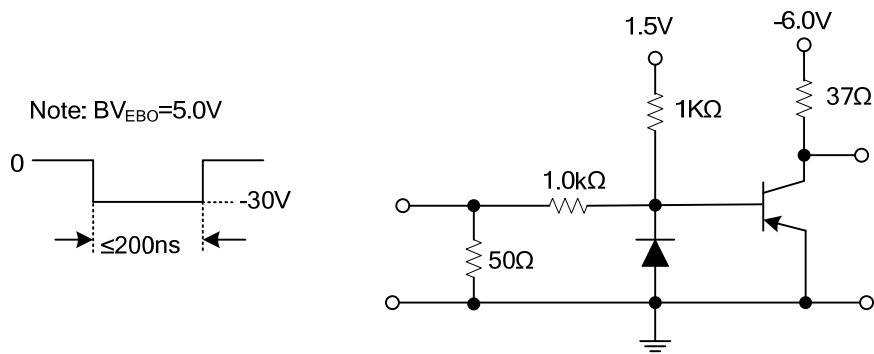
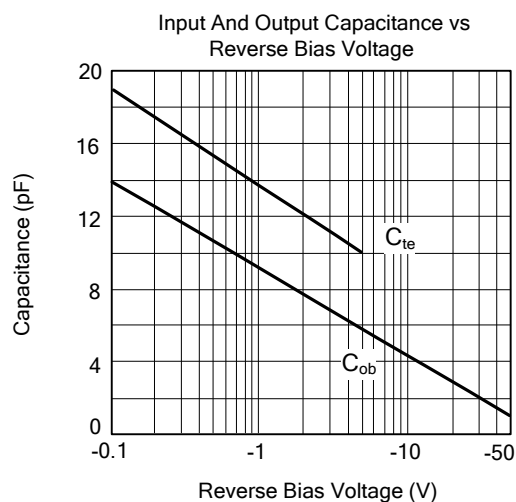
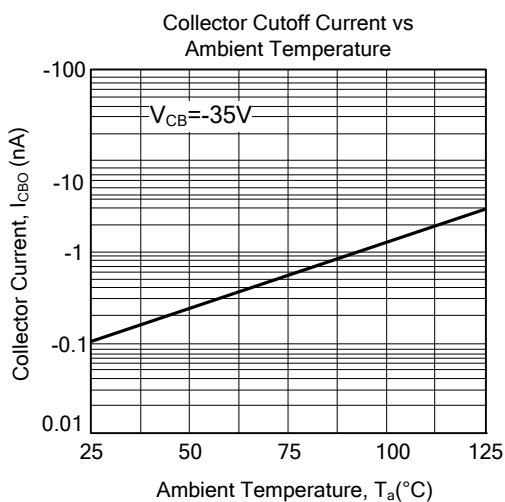
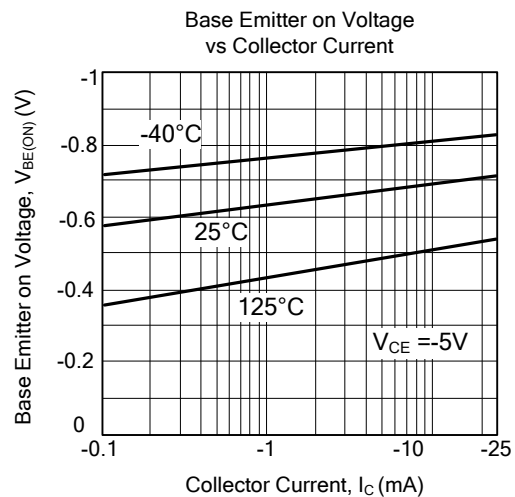
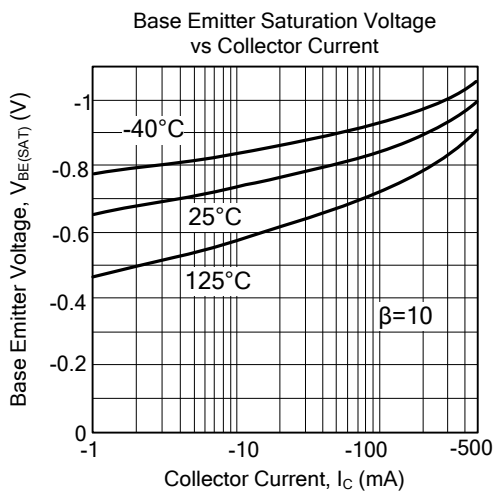
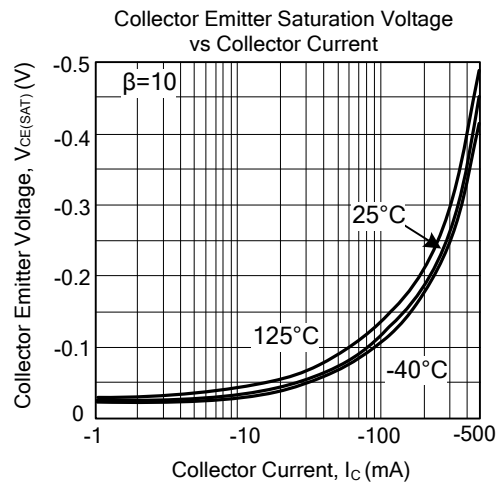
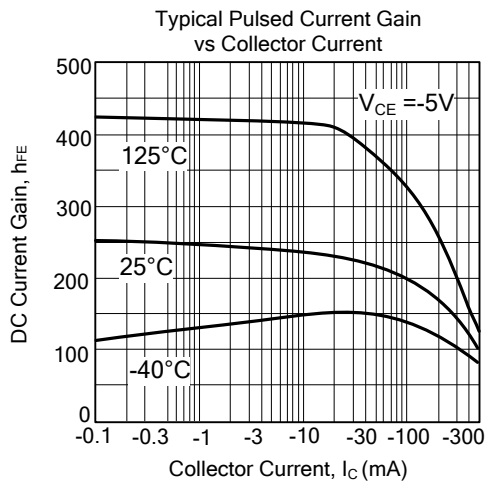
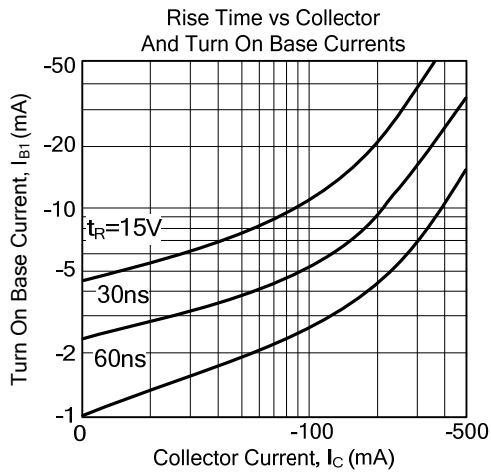
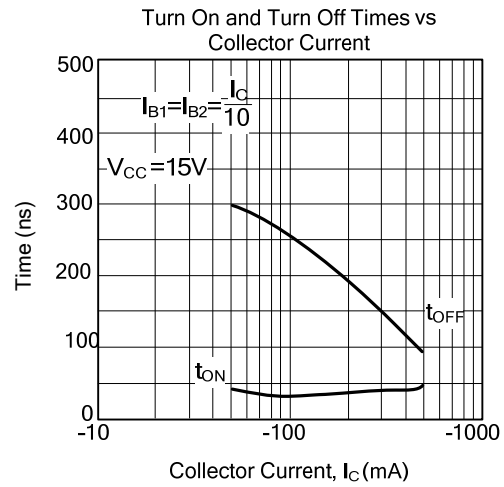
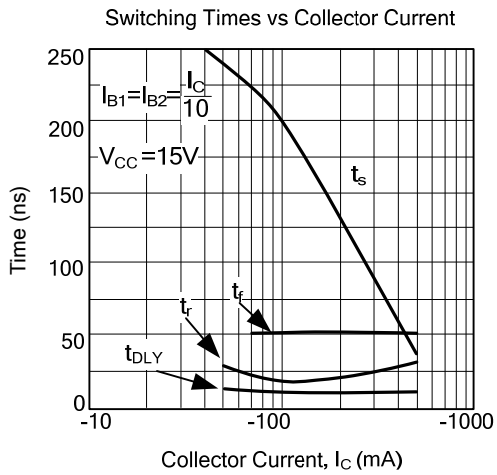


Fig 2. Saturated Turn-Off Switching Time Test Circuit

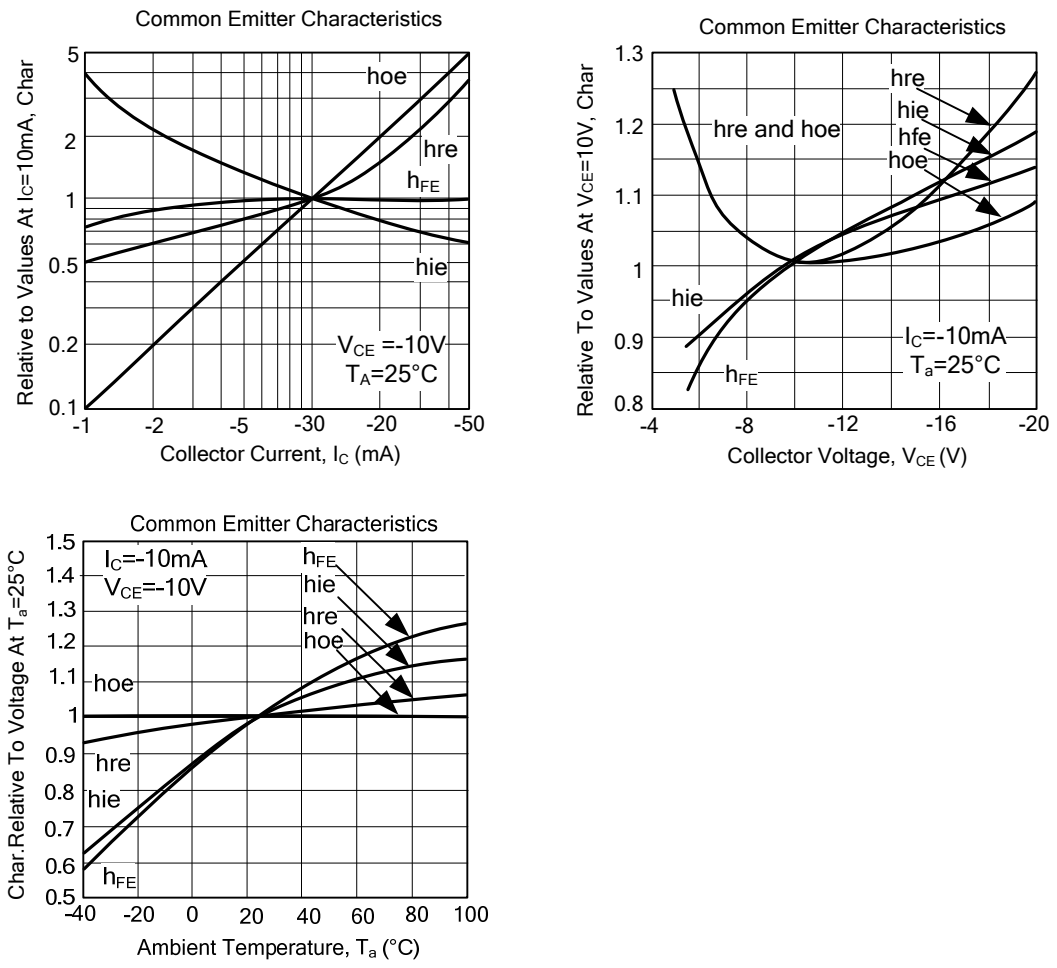
### TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL COMMON EMITTER CHARACTERISTICS (f=1kHz)



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. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.

单击下面可查看定价，库存，交付和生命周期等信息

[>>UTC\(友顺\)](#)