



UNISONIC TECHNOLOGIES CO., LTD

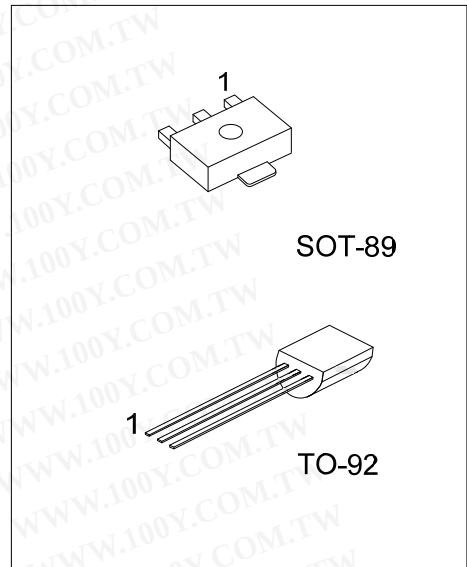
PN2907A

PNP SILICON TRANSISTOR

PNP GENERAL PURPOSE AMPLIFIER

DESCRIPTION

This UTC **PN2907A** is designed for use as a general purpose amplifier and switch requiring collector currents to 500 mA.



ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free Plating	Halogen Free		1	2	3	
PN2907A-AB3-R	PN2907AL-AB3-R	PN2907AG-AB3-R	SOT-89	B	C	E	Tape Reel
PN2907A-T92-B	PN2907AL-T92-B	PN2907AG-T92-B	TO-92	E	B	C	Tape Box
PN2907A-T92-K	PN2907AL-T92-K	PN2907AG-T92-K	TO-92	E	B	C	Bulk

PN2907AL-AB3-R	(1)Packing Type	(1) B: Tape Box, K: Bulk, R: Tape Reel
	(2)Package Type	(2) AB3: SOT-89, T92: TO-92
	(3)Lead Plating	(3) G: Halogen Free, L: Lead Free Plating, Blank: Pb/Sn

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

PN2907A

PNP SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage		V_{CEO}	-60	V
Collector-Base Voltage		V_{CBO}	-60	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current-Continuous		I_C	-800	mA
Power Dissipation	SOT-89	P_D	350	mW
	TO-92		625	mW
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-40 ~ +150	°C

Note: 1. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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	RATINGS	UNIT
Thermal resistance, junction to Ambient	SOT-89	θ_{JA}	104	°C/W
	TO-92		200	°C/W

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -10\text{mA}$, $I_B = 0$	-60			V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -10\mu\text{A}$, $I_E = 0$	-60			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu\text{A}$, $I_C = 0$	-5			V
Base Cutoff Current	I_B	$V_{CB} = -30\text{V}$, $V_{EB} = -0.5\text{V}$			-50	nA
Collector Cutoff Current	I_{CEX}	$V_{CE} = -30\text{V}$, $V_{BE} = -0.5\text{V}$			-50	nA
Collector Cutoff Current	I_{CBO}	$V_{CB} = -50\text{V}$, $I_E = 0$ $V_{CB} = -50\text{V}$, $I_E = 0$, $T_a = 150^\circ\text{C}$			-0.02 -20	μA μA
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	$I_C = -0.1\text{mA}$, $V_{CE} = -10\text{V}$	75			
		$I_C = -1.0\text{mA}$, $V_{CE} = -10\text{V}$	100			
		$I_C = -10\text{mA}$, $V_{CE} = -10\text{V}$	100			
		$I_C = -150\text{mA}$, $V_{CE} = -10\text{V}$ (Note)	100		300	
		$I_C = -500\text{mA}$, $V_{CE} = -10\text{V}$ (Note)	50			
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C = -150\text{mA}$, $I_B = -15\text{mA}$ $I_C = -500\text{mA}$, $I_B = -50\text{mA}$			-0.4 -1.6	V V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -150\text{mA}$, $I_B = -15\text{mA}$ (Note) $I_C = -500\text{mA}$, $I_B = -50\text{mA}$			-1.3 -2.6	V V
SMALL SIGNAL CHARACTERISTICS						
Current Gain – Bandwidth Product	f_T	$I_C = -50\text{mA}$, $V_{CE} = -20\text{V}$, $f = 100\text{MHz}$	200			MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $I_E = 0$, $f = 100\text{kHz}$			8	pF
Input Capacitance	C_{ib}	$V_{EB} = -2\text{V}$, $I_C = 0$, $f = 100\text{kHz}$			30	pF
SWITCHING CHARACTERISTICS						
Turn-on Time	t_{ON}	$V_{CC} = -30\text{V}$, $I_C = -150\text{mA}$ $I_{B1} = -15\text{mA}$			45	ns
Delay Time	t_{DLY}				10	ns
Rise Time	t_R	$V_{CC} = -6\text{V}$, $I_C = -150\text{mA}$ $I_{B1} = I_{B2} = -15\text{mA}$			40	ns
Turn-off Time	t_{OFF}				100	ns
Storage Time	t_S				80	ns
Fall Time	t_F				30	ns

Note: Pulse Test: Pulse Width $\leq 300\text{ms}$, Duty Cycle $\leq 2.0\%$



■ TEST CIRCUITS

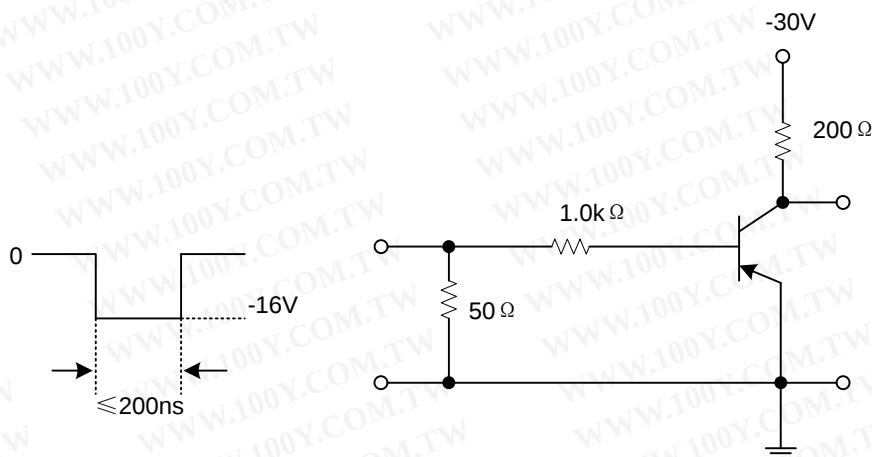


Fig. 1 Saturated Turn-On Switching Time Test Circuit

NOTE: $BV_{EBO} = -5.0V$

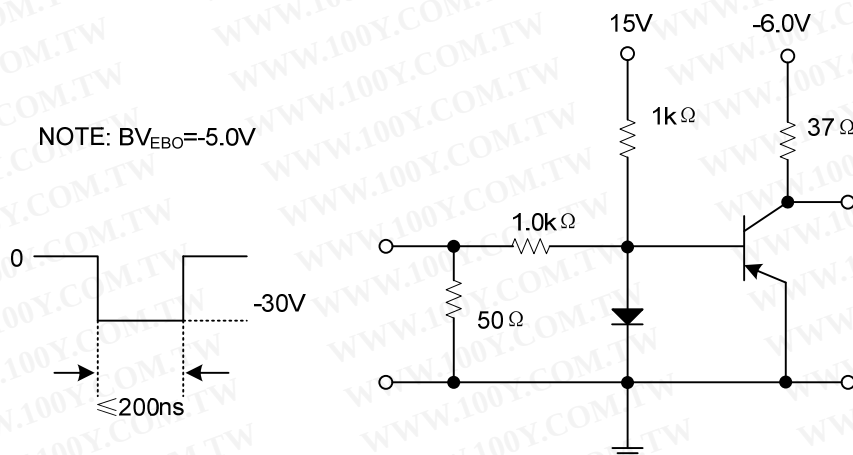
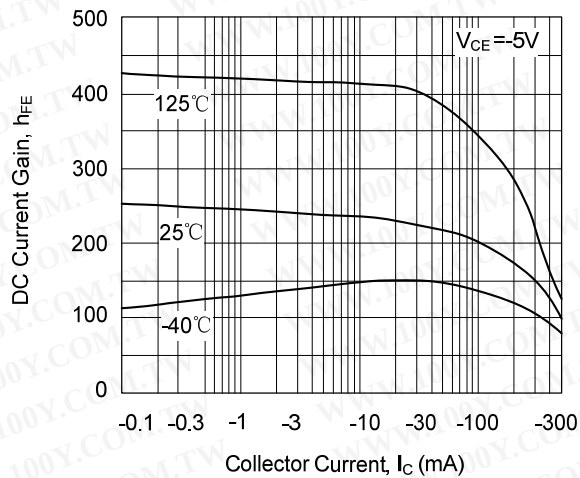


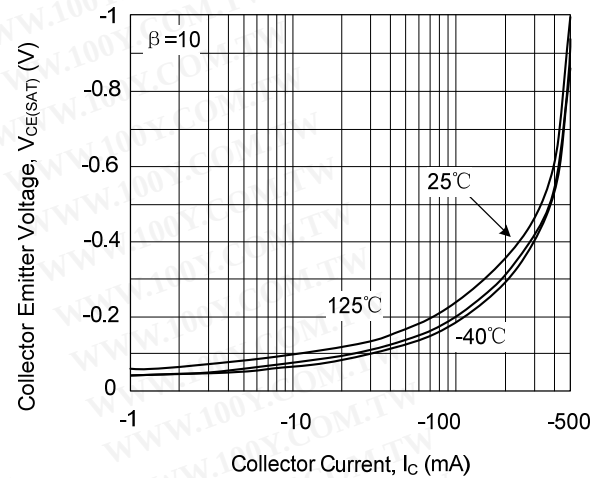
Fig. 2 Saturated Turn-Off Switching Time Test Circuit

TYPICAL CHARACTERISTICS

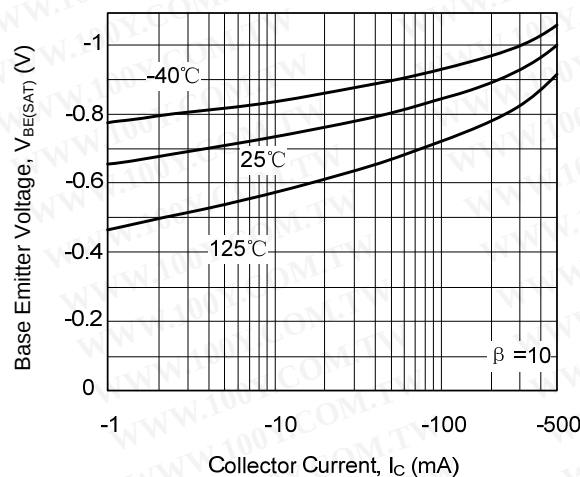
Typical Pulsed Current Gain vs. Collector Current



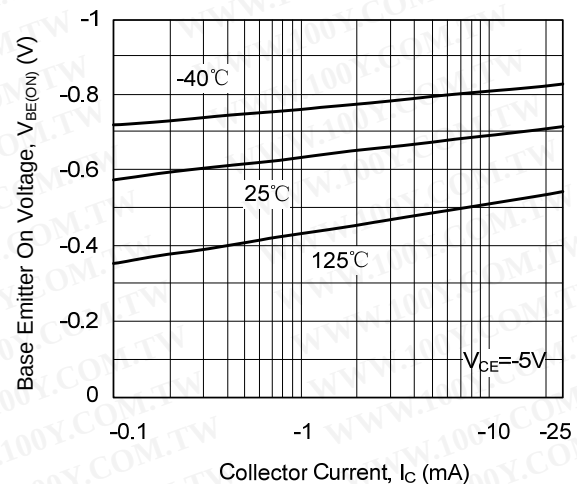
Collector-Emitter Saturation Voltage vs. Collector Current



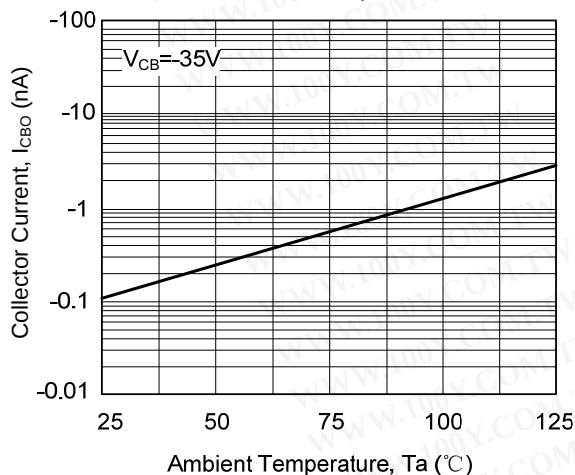
Base-Emitter Saturation Voltage vs. Collector Current



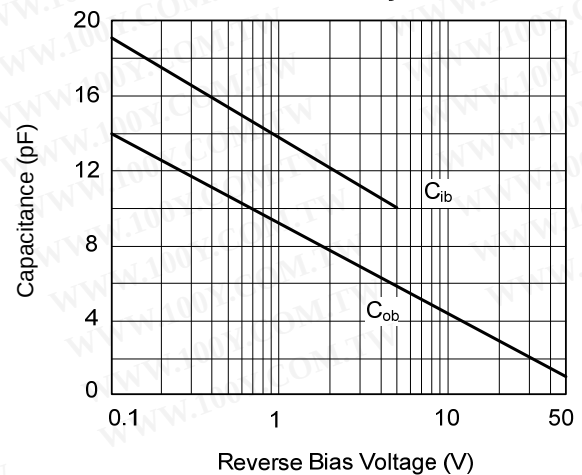
Base Emitter ON Voltage vs. Collector Current



Collector-Cutoff Current vs. Ambient Temperature

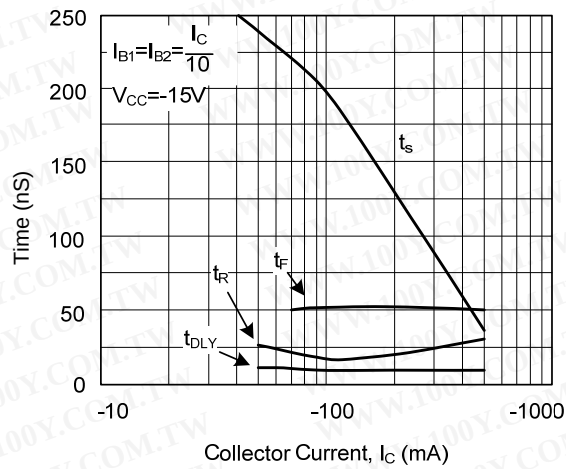


Input and Output Capacitance vs. Reverse Bias Voltage

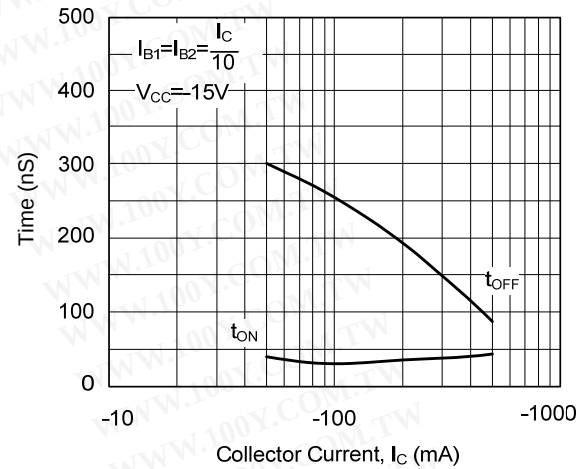


■ TYPICAL CHARACTERISTICS(Cont.)

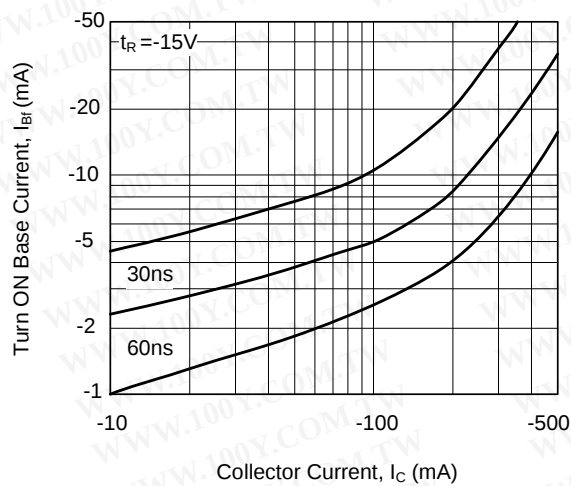
Switching Times vs. Collector Current



Turn On and Turn Off Times vs. Collector Current

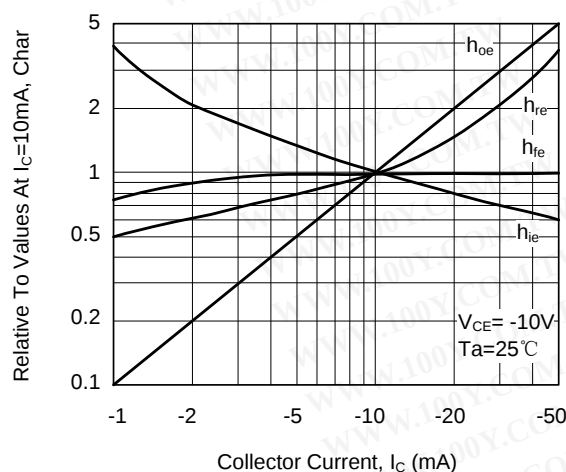


Rise Time vs Collector and Turn On Base Currents

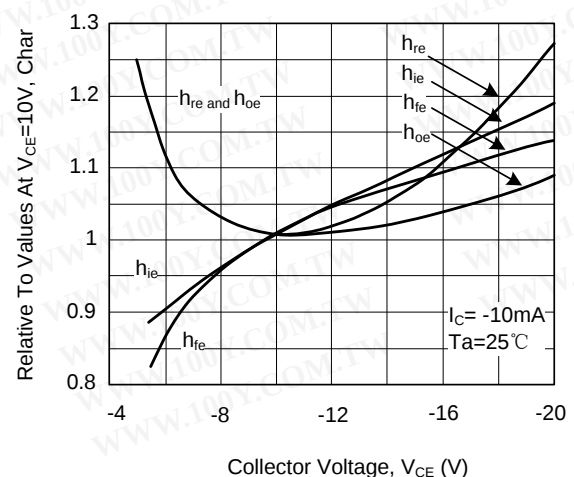


■ TYPICAL CHARACTERISTICS FOR COMMON EMITTER ($f=1kHz$)

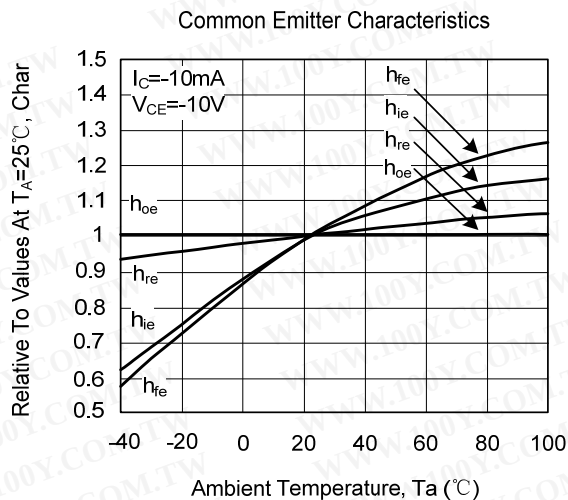
Common Emitter Characteristics



Common Emitter Characteristics



■ TYPICAL CHARACTERISTICS FOR COMMON EMITTER(Cont.)



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