



# 2SB1412

## PNP SILICON TRANSISTOR

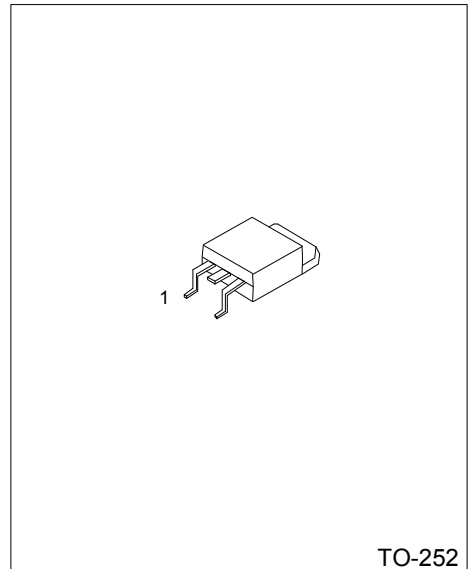
### HIGH VOLTAGE SWITCHING TRANSISTOR

■ DESCRIPTION

The UTC **2SB1412** is an epitaxial planar type PNP silicon transistor.

■ FEATURES

- \* Excellent DC current gain characteristics
- \* Low  $V_{CE(SAT)}$   
 $V_{CE(SAT)} = -0.35V$  (Typ)  
 $(I_C/I_B = -4A/-0.1A)$



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SB1412L-x-TN3-R	2SB1412G-x-TN3-R	TO-252	B	C	E	Tape Reel

<p>2SB1412L-x-TN3-R</p> <p>(1)Packing Type          (2)Package Type          (3)Rank          (4)Lead Free</p>	<p>(1) R: Tape Reel          (2) TN3: TO-252          (3) reference to Classification of <math>h_{FE1}</math>          (4) G: Halogen Free, L: Lead Free</p>
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## PNP SILICON TRANSISTOR

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	-30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-20	V
Emitter-Base Voltage	V <sub>EBO</sub>	-6	V
Collector Current(DC)	I <sub>C</sub>	-5	A
Collector Current(PULSE) Single pulse, Pw=10ms	I <sub>CP</sub>	-10	A
Collector Power Dissipation	P <sub>D</sub>	1	W
Collector Power Dissipation (note2)	P <sub>D</sub>	10(T <sub>C</sub> =25°C)	W
Junction Temperature	T <sub>J</sub>	+150	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°C

Note 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. When mounted on a 40\*40\*0.7mm ceramic board.

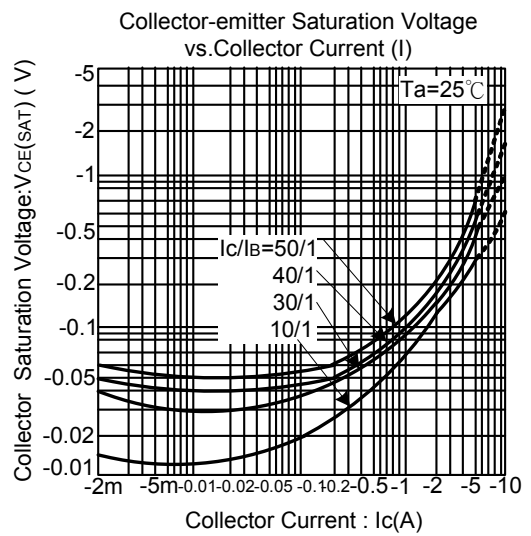
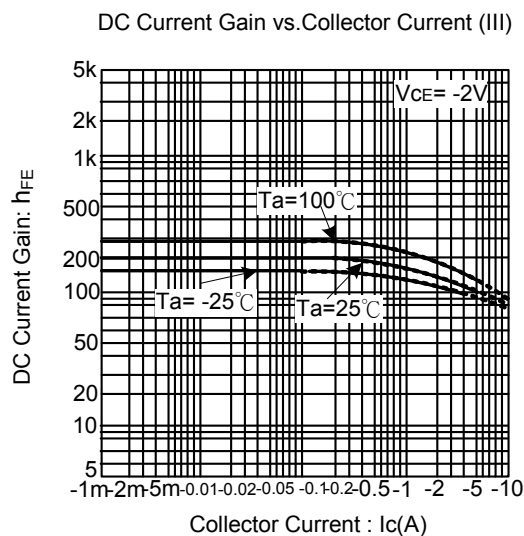
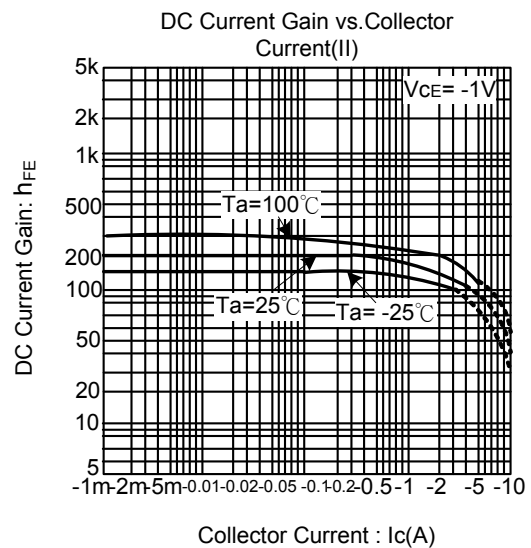
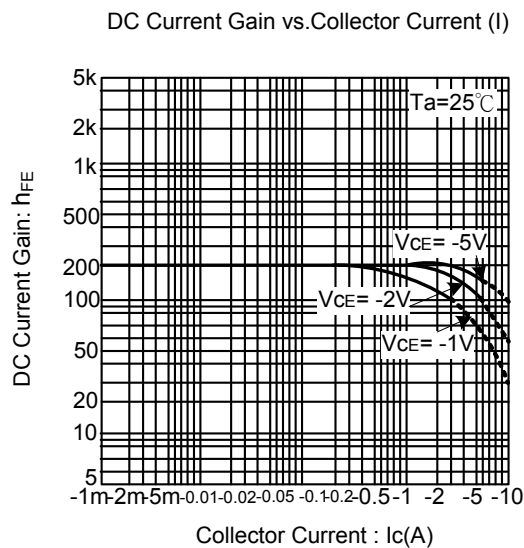
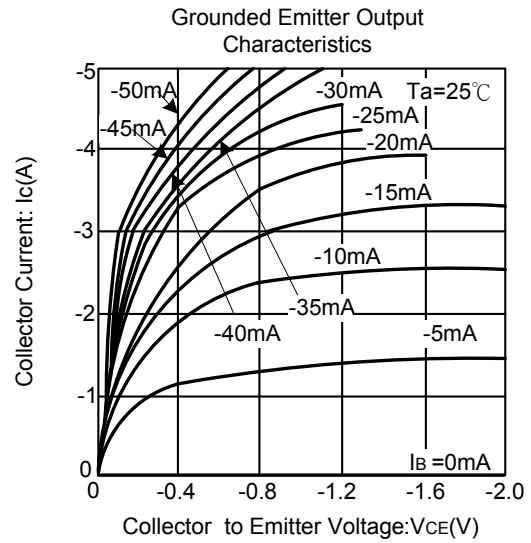
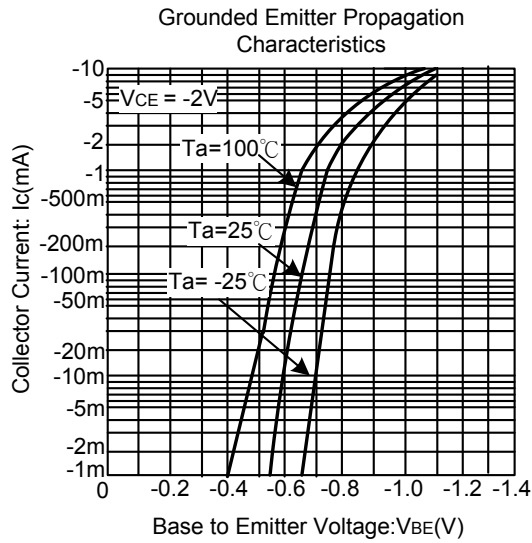
### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> = -50μA	-30			V
Collector Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> = -1mA	-20			V
Emitter Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> = -50μA	-6			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> = -20V			-0.5	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V			-0.5	μA
DC Current Transfer Ratio	h <sub>FE</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -0.5A	82		390	
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> /I <sub>B</sub> = -4A/-0.1A			-1.0	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = -6V, I <sub>E</sub> = 50 mA, f=30MHz		120		MHz
Output Capacitance	C <sub>OB</sub>	V <sub>CB</sub> = -20V, I <sub>E</sub> = 0 A, f=1MHz		60		pF

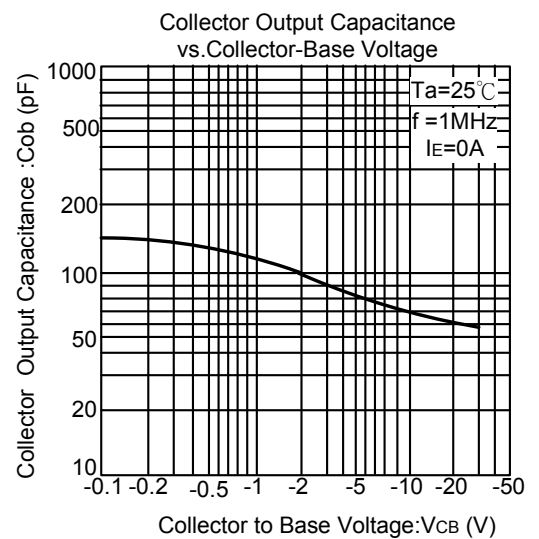
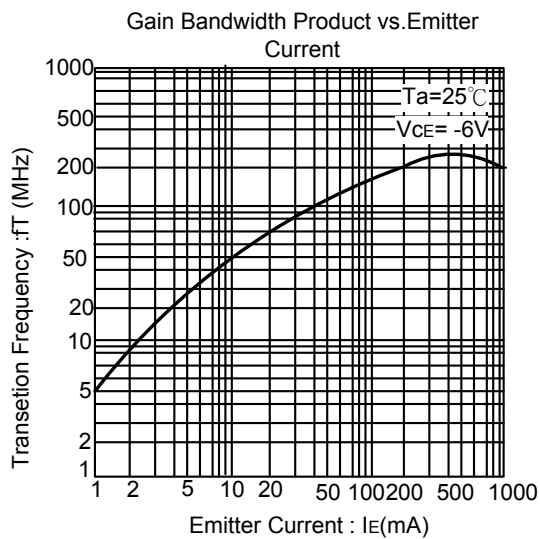
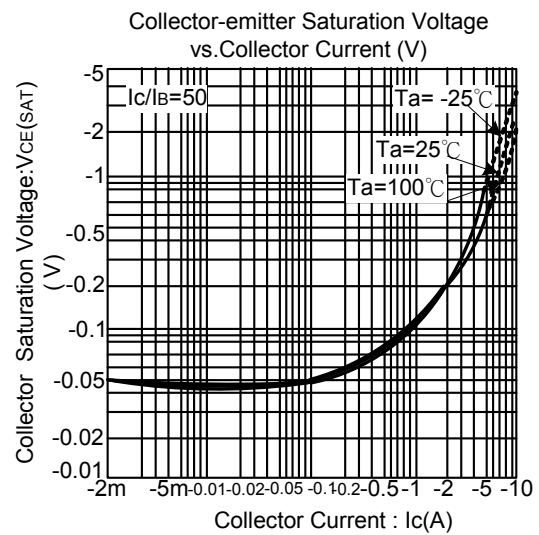
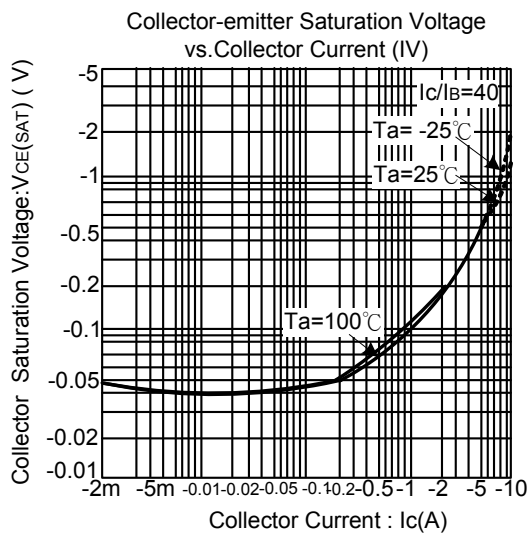
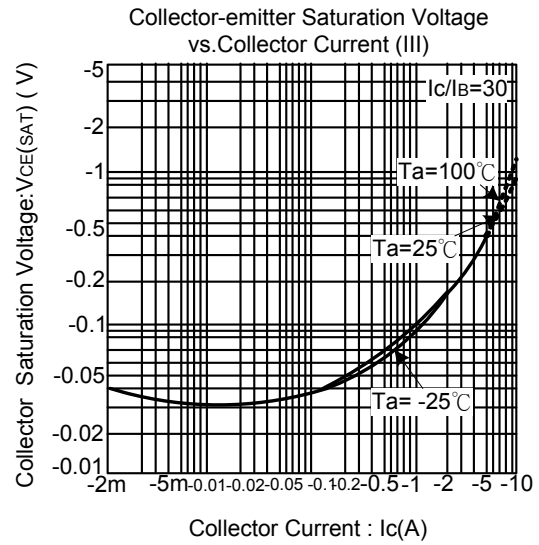
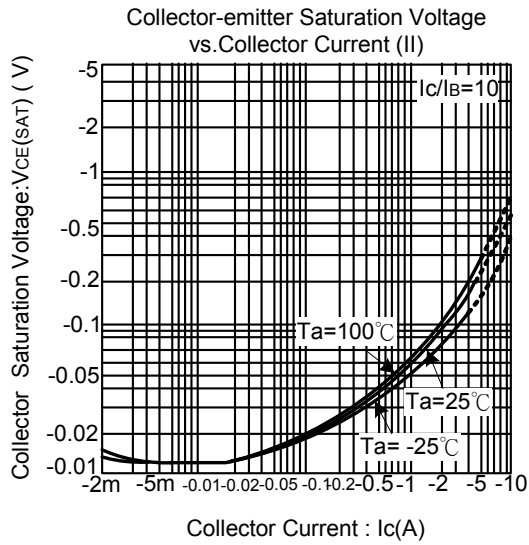
### ■ CLASSIFICATION OF h<sub>FE</sub>

RANK	P	Q	R
RANGE	82-180	120-270	180-390

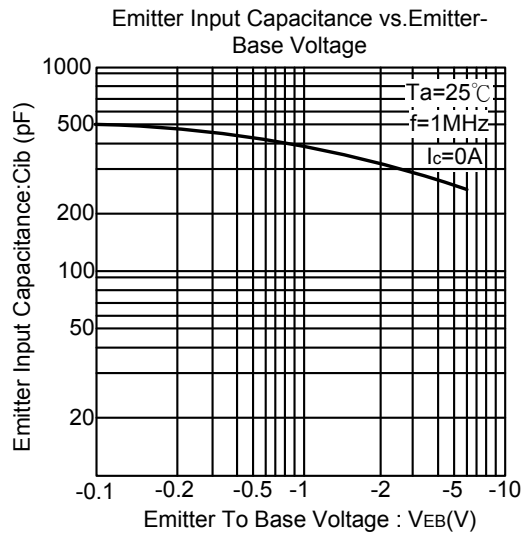
## TYPICAL CHARACTERISTICS



## TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



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