



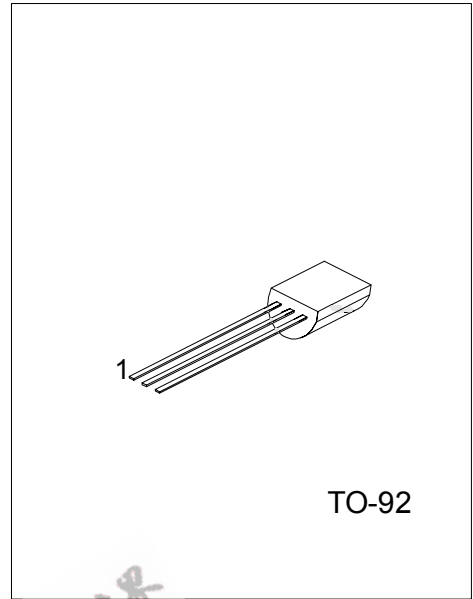
## 2SC1815

## NPN EPITAXIAL SILICON TRANSISTOR

### AUDIO FREQUENCY AMPLIFIER HIGH FREQUENCY OSC NPN TRANSISTOR

#### FEATURES

- \* Collector-Emitter voltage:  
BV<sub>CEO</sub>=50V
- \* Collector current up to 150mA
- \* High h<sub>FE</sub> linearity
- \* Complimentary to UTC 2SA1015



\*Pb-free plating product number: 2SC1815L

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SC1815-x-T92-A-B	2SC1815L-x-T92-A-B	TO-92	E	C	B	Tape Box
2SC1815-x-T92-A-K	2SC1815L-x-T92-A-K	TO-92	E	C	B	Bulk

<p>2SC1815L-x-T92-A-B</p>	<p>(1)Packing Type (2)Pin Assignment (3)Package Type (4)Rank (5)Lead Plating</p> <p>(1) B: Tape Box, K: Bulk (2) refer to Pin Assignment (3) T92: TO-92 (4) x: refer to Classification of h<sub>FE1</sub> (5) L: Lead Free Plating, Blank: Pb/Sn</p>
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# 2SC1815

## NPN EPITAXIAL SILICON TRANSISTOR

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-base voltage	V <sub>CBO</sub>	60	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	150	mA
Base current	I <sub>B</sub>	50	mA
Collector dissipation(Ta=25°C)	P <sub>C</sub>	400	mW
Junction Temperature	T <sub>J</sub>	+125	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +125	°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.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0			100	nA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			100	nA
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		0.1	0.25	V
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA			1.0	V
DC Current Gain(note)	h <sub>FE1</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =2mA	120		700	
	h <sub>FE2</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =150mA	25			
Current Gain Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =50mA	80			MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		2.0	3.0	pF
Noise Figure	NF	I <sub>C</sub> =-0.1mA, V <sub>CE</sub> =6V R <sub>G</sub> =10kΩ, f=100Hz		1.0	1.0	dB

### ■ CLASSIFICATION OF h<sub>FE1</sub>

RANK	Y	GR	BL
RANGE	120-240	200-400	350-700

## ■ TYPICAL CHARACTERISTICS

Fig.1 Static characteristics

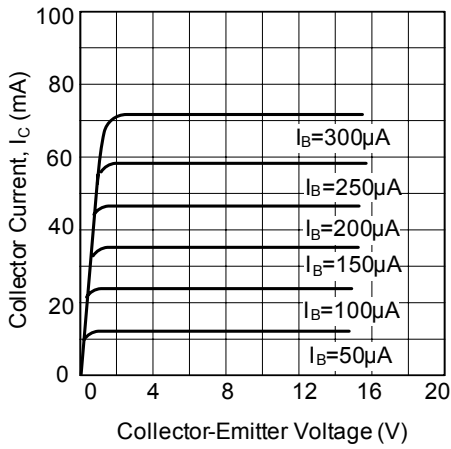


Fig.2 DC current Gain

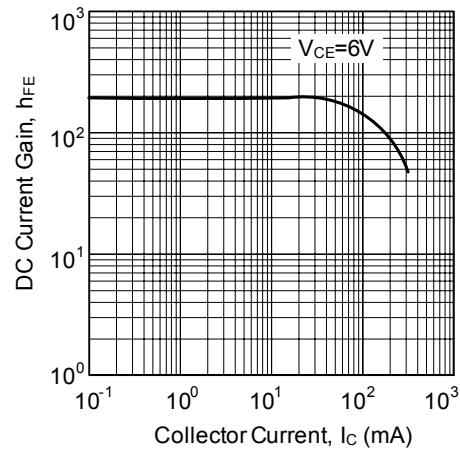


Fig.3 Base-Emitter on Voltage

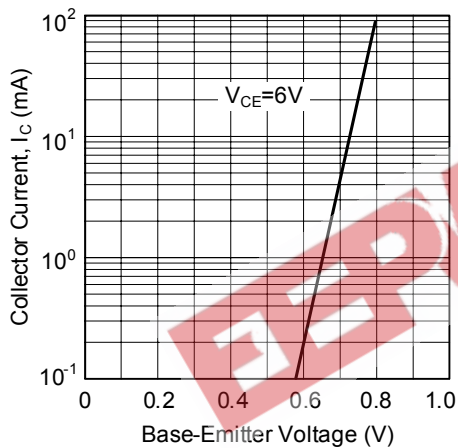


Fig.4 Saturation Voltage

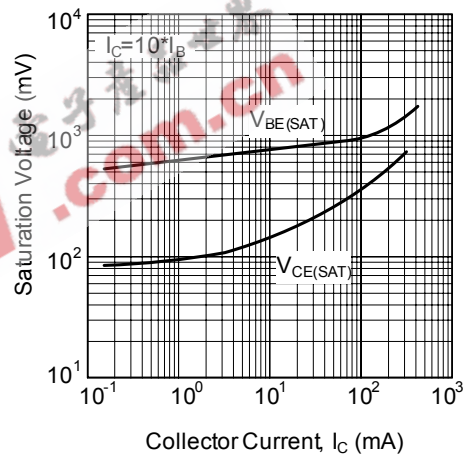


Fig.5 Current Gain-Bandwidth Product

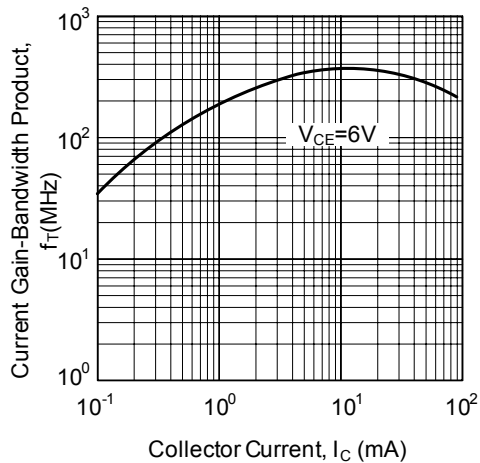
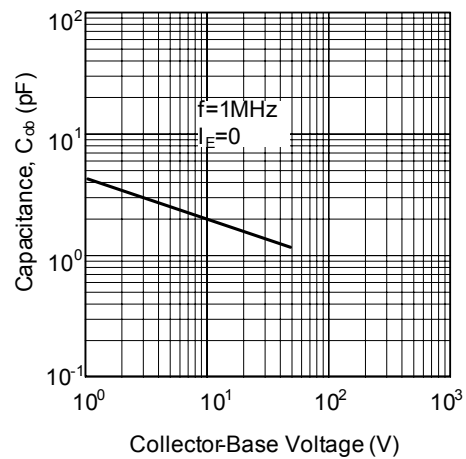


Fig.6 Collector Output Capacitance



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