



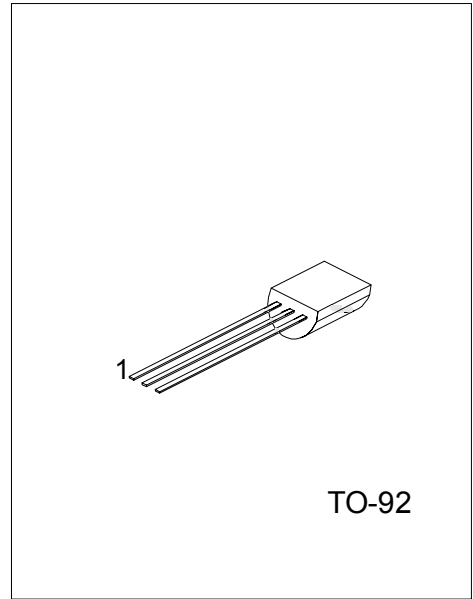
## 2SC1815

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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-base voltage	$V_{CBO}$	60	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	150	mA
Base current	$I_B$	50	mA
Collector dissipation(Ta=25°C)	$P_C$	400	mW
Junction Temperature	$T_J$	+125	°C
Storage Temperature	$T_{STG}$	-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	$I_{CBO}$	$V_{CB}=60V, I_E=0$			100	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100mA, I_B=10mA$		0.1	0.25	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=100mA, I_B=10mA$			1.0	V
DC Current Gain(note)	$h_{FE1}$	$V_{CE}=6V, I_C=2mA$	120		700	
	$h_{FE2}$	$V_{CE}=6V, I_C=150mA$	25			
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=50mA$	80			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		2.0	3.0	pF
Noise Figure	NF	$I_C=-0.1mA, V_{CE}=6V$ $R_G=10k\Omega, f=100Hz$		1.0	1.0	dB

■ **CLASSIFICATION OF  $h_{FE1}$**

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

## ■ TYPICAL CHARACTERISTICS

Fig.1 Static characteristics

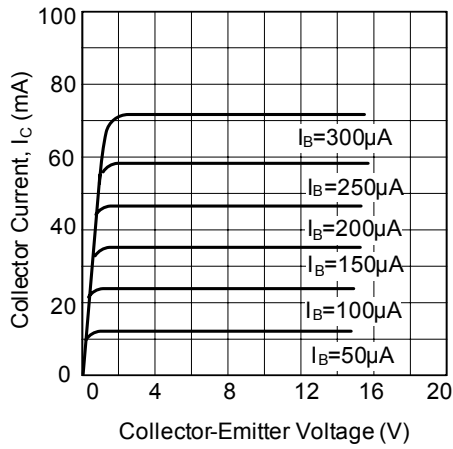


Fig.2 DC current Gain

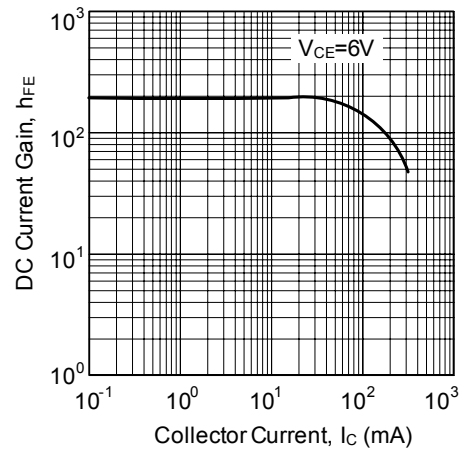


Fig.3 Base-Emitter on Voltage

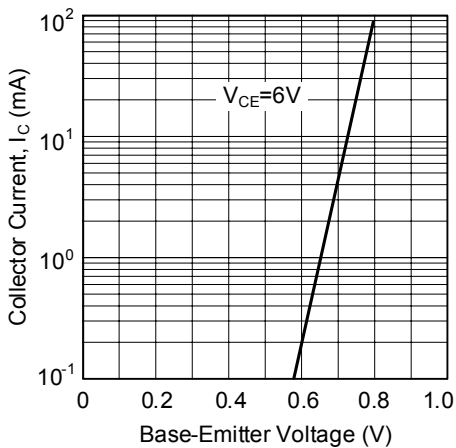


Fig.4 Saturation Voltage

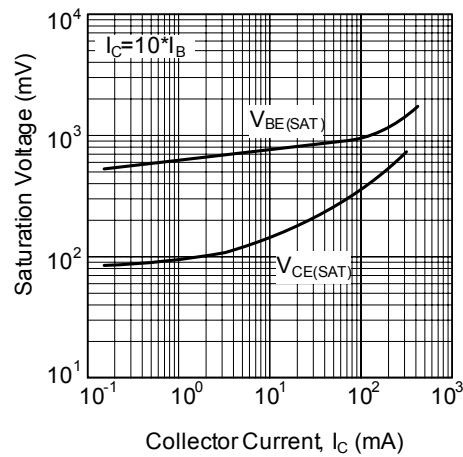


Fig.5 Current Gain-Bandwidth Product

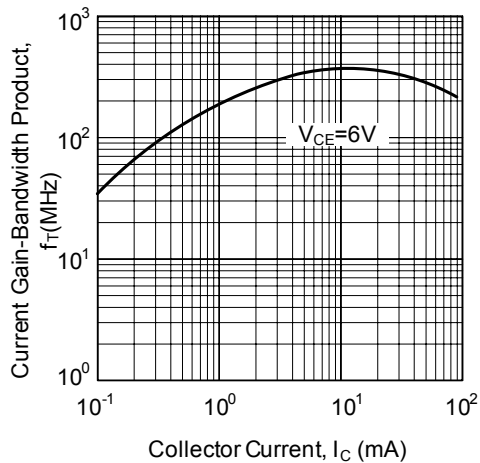
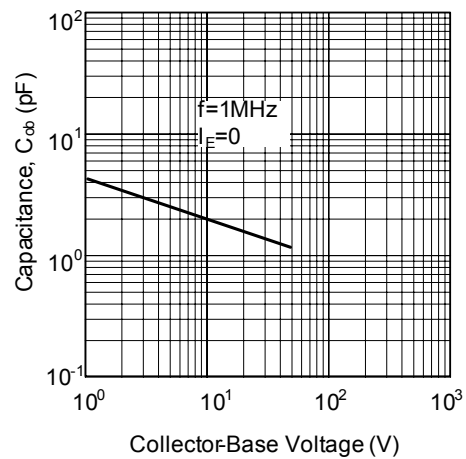


Fig.6 Collector Output Capacitance



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