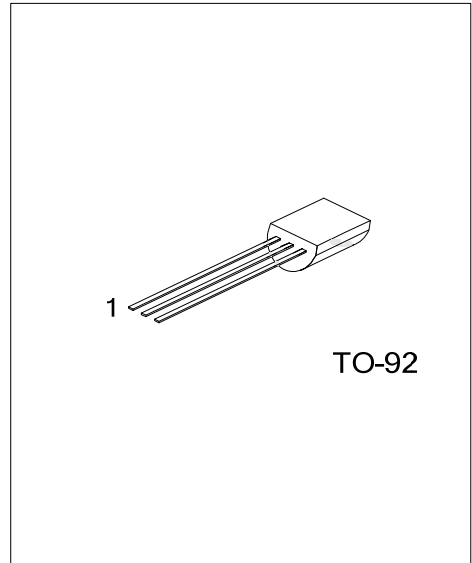




# 2SC1815

## NPN SILICON TRANSISTOR

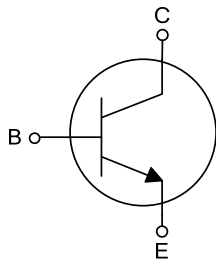
AUDIO FREQUENCY  
AMPLIFIER HIGH  
FREQUENCY OSC NPN  
TRANSISTOR



### FEATURES

- \* Collector-Emitter voltage:  $BV_{CE0}=50V$
- \* Collector current up to 150mA
- \* High  $h_{FE}$  linearity
- \* Complimentary to UTC 2SA1015

### SYMBOL



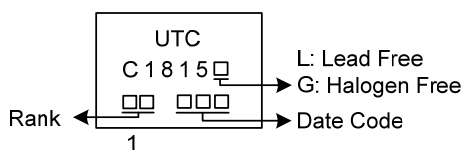
### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2SC1815L-xx-T92-B	2SC1815G-xx-T92-B	TO-92	E	C	B	Tape Box
2SC1815L-xx-T92-K	2SC1815G-xx-T92-K	TO-92	E	C	B	Bulk

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

<p>2SC1815G-xx-T92-B</p>	<p>(1) B: Tape Box, K: Bulk  (2) T92: TO-92  (3) xx: Refer to Classification of <math>h_{FE1}</math>  (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING



■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified )

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CB0}$	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 Power Dissipation ( $T_A=25^{\circ}\text{C}$ )	$P_D$	625	mW
Junction Temperature (Note 2)	$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 ~ +150	$^{\circ}\text{C}$

Notes: 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. It is guarantee by design, not 100% be tested.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	$\theta_{JC}$	80	$^{\circ}\text{C/W}$

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=60\text{V}, I_E=0$			100	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		0.1	0.25	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			1.0	V
DC Current Gain	$h_{FE1}$	$V_{CE}=6\text{V}, I_C=2\text{mA}$	70		700	
	$h_{FE2}$	$V_{CE}=6\text{V}, I_C=150\text{mA}$	25			
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}$	80			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		2.0	3.0	pF

■ CLASSIFICATION OF  $h_{FE1}$

RANK	O	Y	GR	BL
RANGE	70~140	120~240	200~400	350~700

■ TYPICAL CHARACTERISTICS

Fig.1 Static characteristics

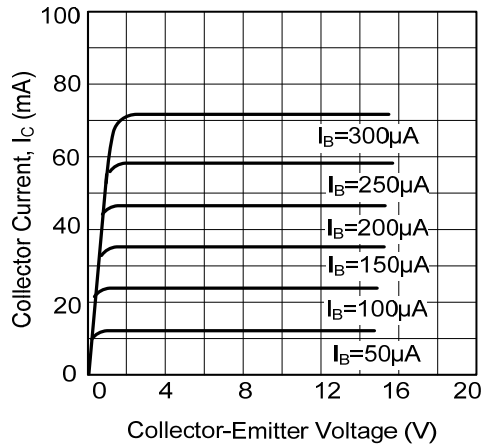


Fig.2 DC current Gain

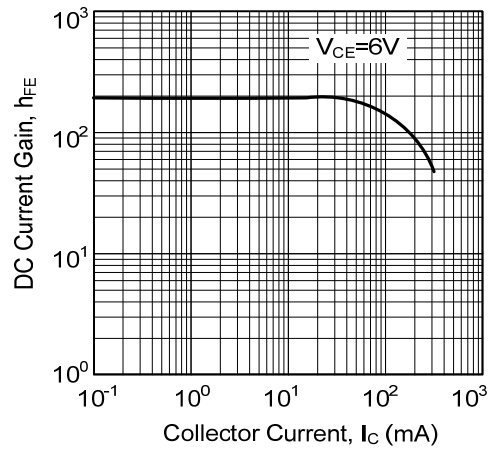


Fig.3 Base-Emitter on Voltage

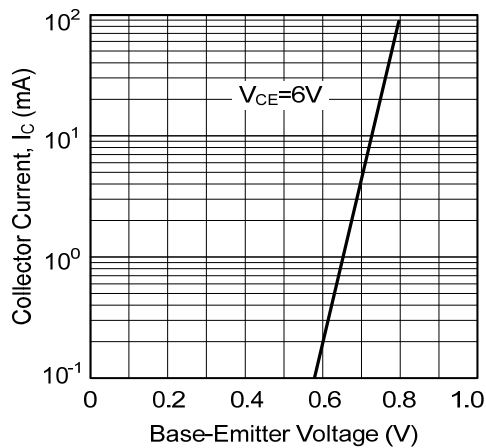


Fig.4 Saturation Voltage

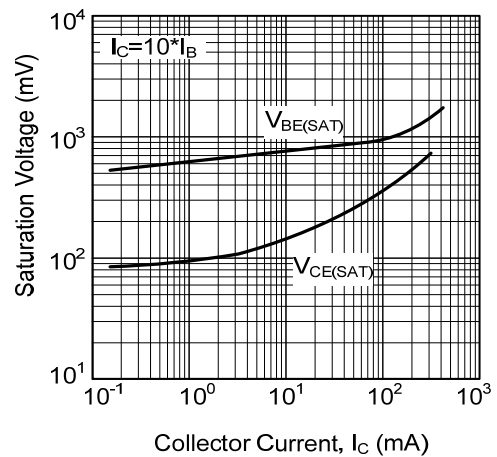


Fig.5 Current Gain-Bandwidth Product

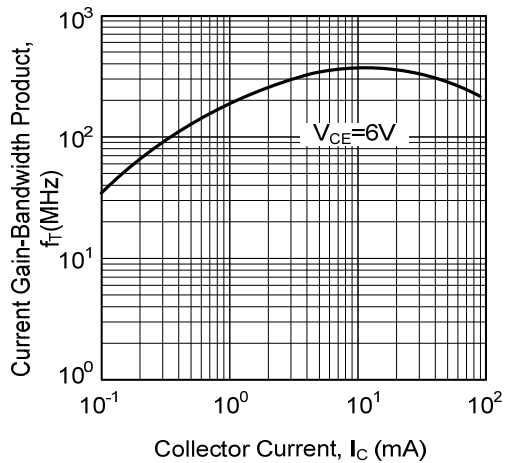
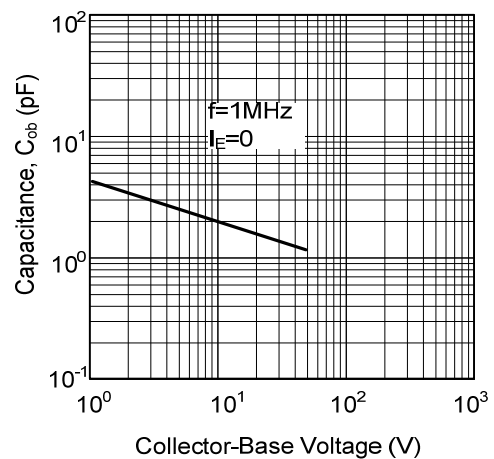
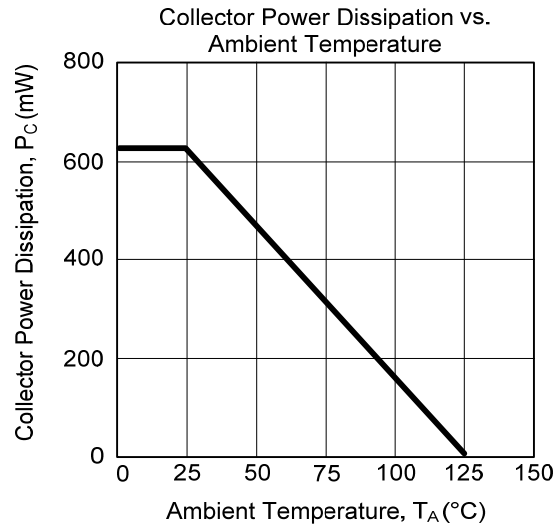
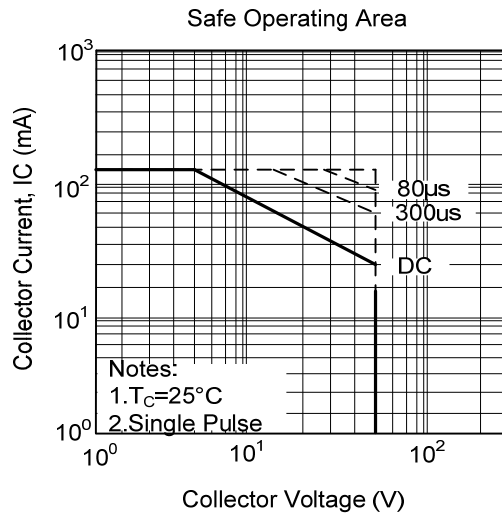


Fig.6 Collector Output Capacitance



■ TYPICAL CHARACTERISTICS (Cont.)



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