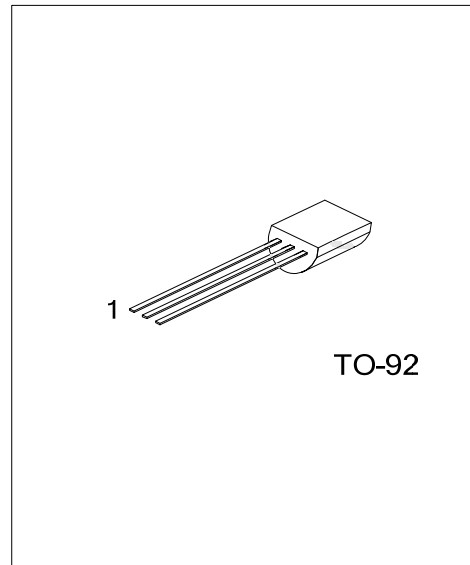




2SC1815

NPN SILICON TRANSISTOR

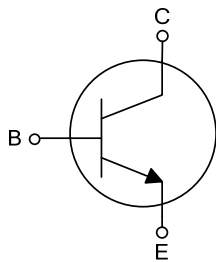
AUDIO FREQUENCY
 AMPLIFIER HIGH
 FREQUENCY OSC NPN
 TRANSISTOR



■ FEATURES

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

■ SYMBOL



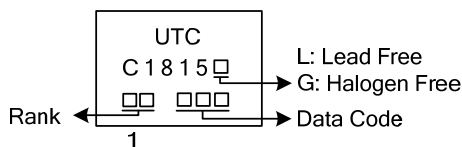
■ ORDERING INFORMATION

| 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>2SC1815L-xx-T92-B</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Green Package</p> | <p>(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) xx: Refer to Classification of h_{FE1} (4) L: Lead Free, G: Halogen Free and Lead Free</p> |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

■ MARKING



■ ABSOLUTE MAXIMUM RATING ($T_A=25^\circ\text{C}$, 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 |
| Power Dissipation ($T_A=25^\circ\text{C}$) | P_D | 625 | mW |
| Junction Temperature | T_J | +125 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +125 | $^\circ\text{C}$ |

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.

■ THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|------------------|---------------|---------|--------------------|
| Junction to Case | θ_{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

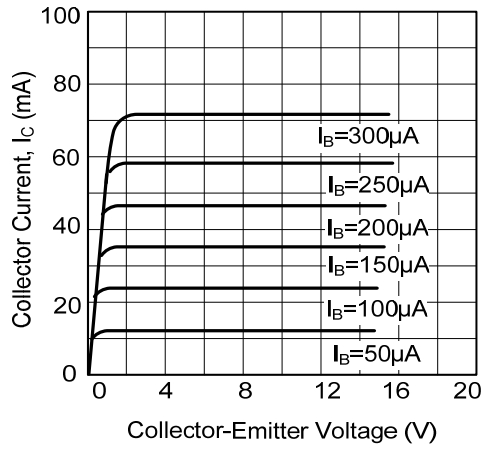


Fig.2 DC current Gain

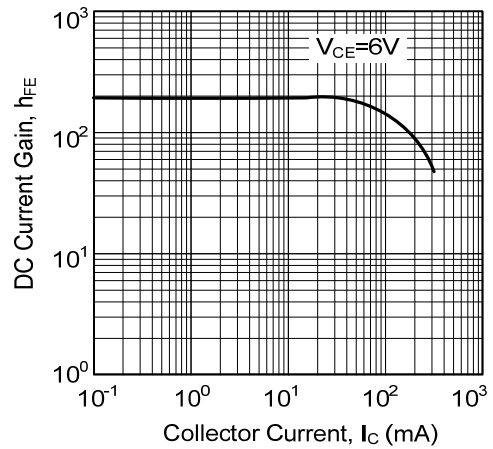


Fig.3 Base-Emitter on Voltage

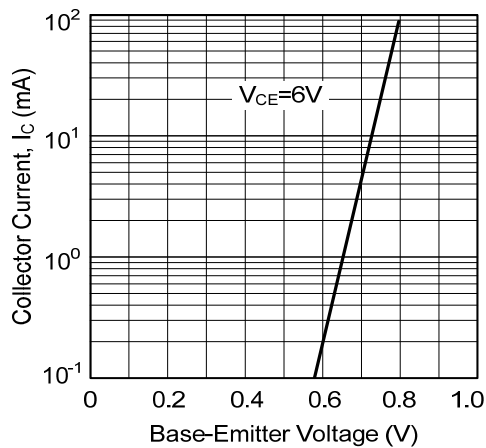


Fig.4 Saturation Voltage

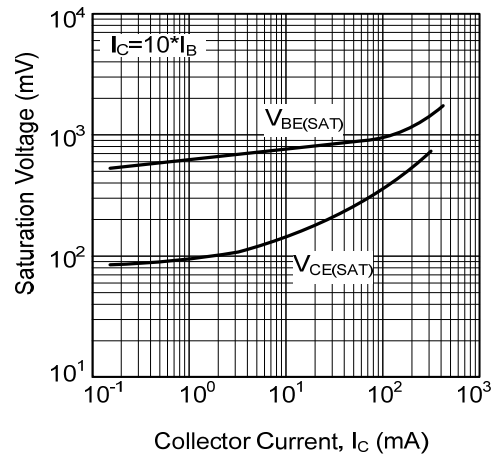


Fig.5 Current Gain-Bandwidth Product

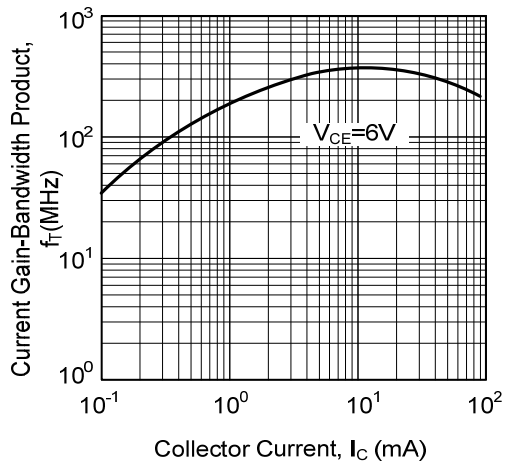
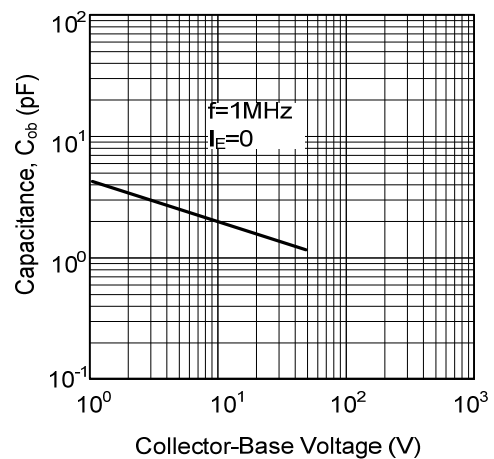
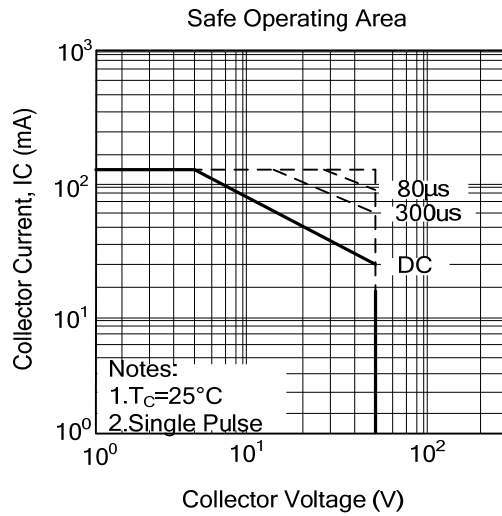


Fig.6 Collector Output Capacitance



■ TYPICAL CHARACTERISTICS(Cont.)



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