



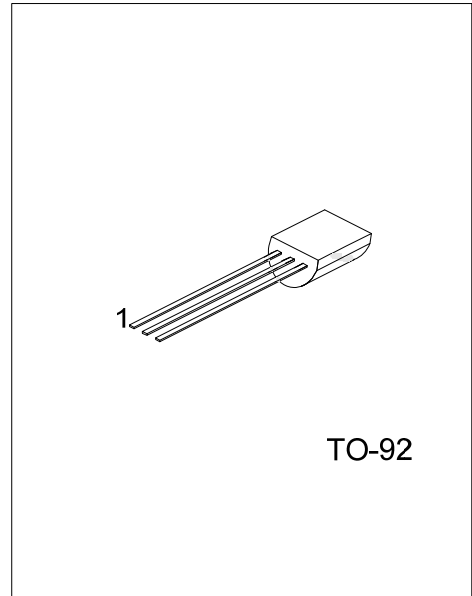
2SB1116/A

PNP SILICON TRANSISTOR

PNP EPITAXIAL SILICON TRANSISTOR

■ DESCRIPTION

Complement to UTC **2SD1616/A**



■ ORDERING INFORMATION

| Ordering Number | | | Package | Pin Assignment | | | Packing |
|------------------|-------------------|-------------------|---------|----------------|---|---|----------|
| Normal | Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SB1116-x-T92-B | 2SB1116L-x-T92-B | 2SB1116G-x-T92-B | TO-92 | E | C | B | Tape Box |
| 2SB1116-x-T92-K | 2SB1116L-x-T92-K | 2SB1116G-x-T92-K | TO-92 | E | C | B | Bulk |
| 2SB1116A-x-T92-B | 2SB1116AL-x-T92-B | 2SB1116AG-x-T92-B | TO-92 | E | C | B | Tape Box |
| 2SB1116A-x-T92-K | 2SB1116AL-x-T92-K | 2SB1116AG-x-T92-K | TO-92 | E | C | B | Bulk |

| | |
|--|---|
| <p>2SB1116L-x-T92-B</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Plating</p> | <p>(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) x: refer to Classification of h_{FE1} (4) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p> |
|--|---|

2SB1116/A

PNP SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (T_a=25°C, unless otherwise specified)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|------------------------------|--------------|------------------|------------|------|
| Collector to Base Voltage | 2SB1116 | V _{CBO} | -60 | V |
| | 2SB1116A | | -80 | |
| Collector to Emitter Voltage | 2SB1116 | V _{CEO} | -50 | V |
| | 2SB1116A | | -60 | |
| Emitter to Base Voltage | | V _{EBO} | -6 | V |
| Collector Current | DC | I _C | -1 | A |
| | Pulse(Note2) | I _{CM} | -2 | A |
| Total Power Dissipation | | P _C | 0.75 | mW |
| Junction Temperature | | T _J | +150 | °C |
| Operating Temperature | | T _{OPR} | -20 ~ +85 | °C |
| Storage Temperature | | T _{STG} | -55 ~ +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. Pulse width ≤ 10ms, Duty cycle ≤ 50%

■ ELECTRICAL CHARACTERISTICS (T_a=25°C, unless otherwise specified.)

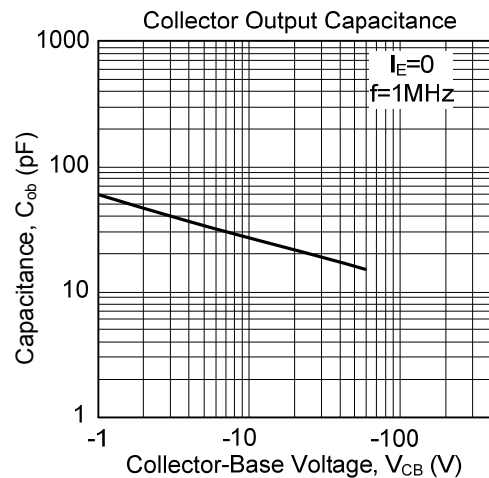
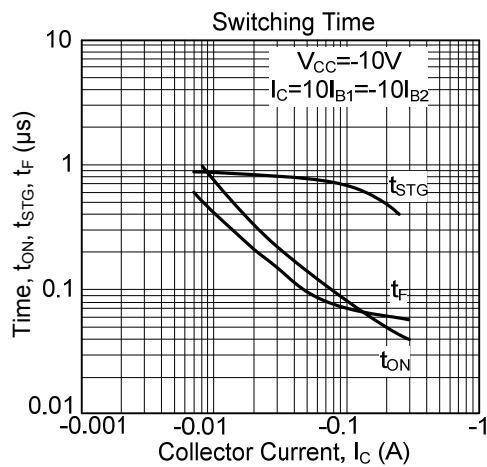
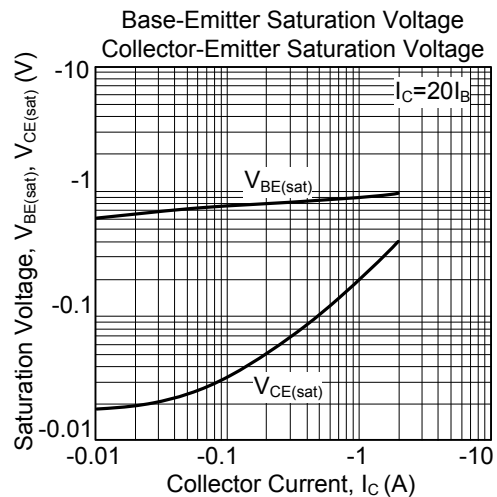
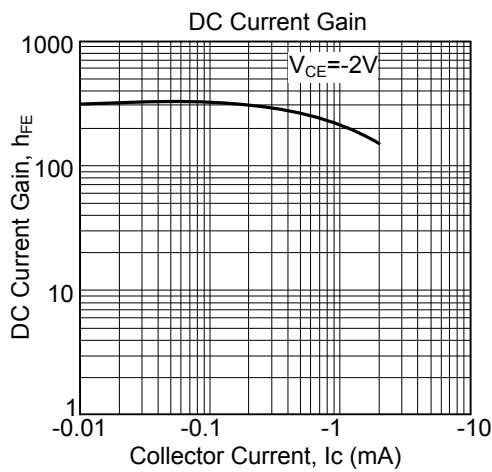
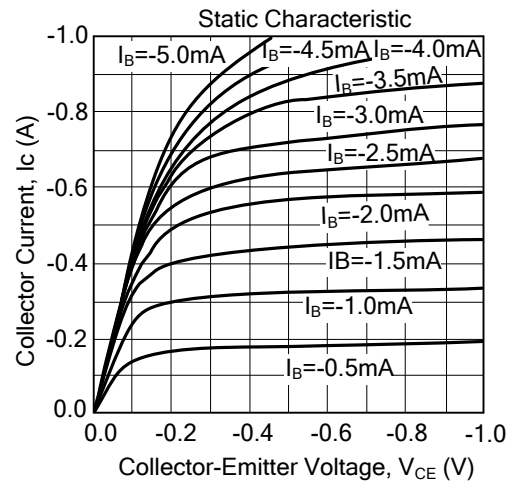
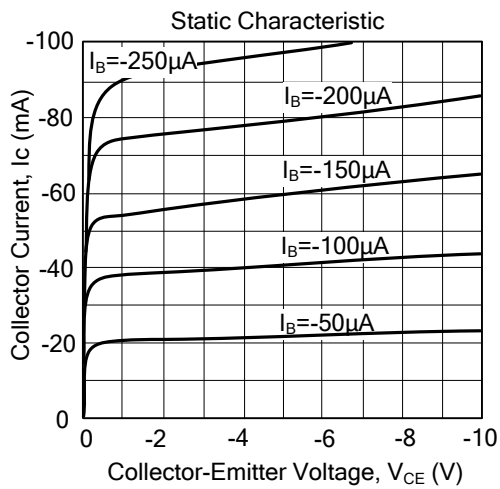
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|----------------------|---|----------|------|------|------|
| Collector-Emitter Saturation Voltage(Note) | V _{CE(SAT)} | I _C =-1A, I _B =-50mA | | -0.2 | | V |
| Base-Emitter Saturation Voltage(Note) | V _{BE(SAT)} | I _C =-1A, I _B =-50mA | | -0.9 | -1.2 | V |
| Base Emitter On Voltage(Note) | V _{BE(ON)} | V _{CE} =-2V, I _C =-50mA | -600 | -650 | -700 | mV |
| Collector Cut-Off Current | I _{CBO} | V _{CB} =-60V, I _E =0 | | | -100 | nA |
| Emitter Cut-Off Current | I _{EBO} | V _{EB} =-6V, I _C =0 | | | -100 | nA |
| DC Current Gain(Note) | h _{FE1} | V _{CE} =-2V, I _C =-100mA | 2SB1116 | 135 | 600 | |
| | | | 2SB1116A | 135 | 400 | |
| | h _{FE2} | V _{CE} =-2V, I _C =-1A | 81 | | | |
| Transition Frequency | f _T | V _{CE} =-2V, I _C =-100mA | 70 | 120 | | MHz |
| Output Capacitance | C _{ob} | V _{CB} =-10V, I _E =0, f=1MHz | | 25 | | pF |
| Turn On Time | t _{ON} | V _{CC} =-10V, I _C =-100mA I _{B1} =-I _{B2} =-10mA, V _{BE(OFF)} =2 ~ 3V | | 0.07 | | μs |
| Storage Time | t _{STG} | | | 0.7 | | μs |
| Fall Time | t _F | | | 0.07 | | μs |

Note: Pulse Test: Pulse width ≤ 350μs, Duty cycle ≤ 2%

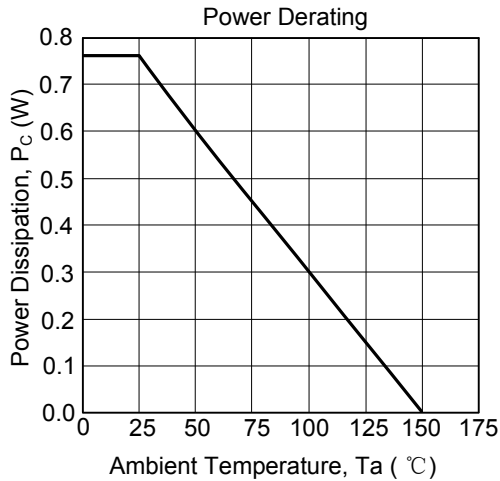
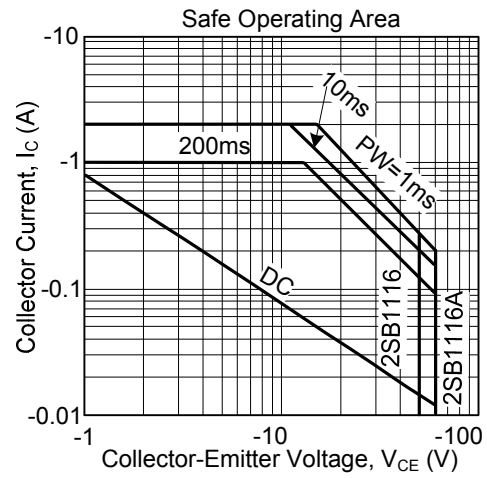
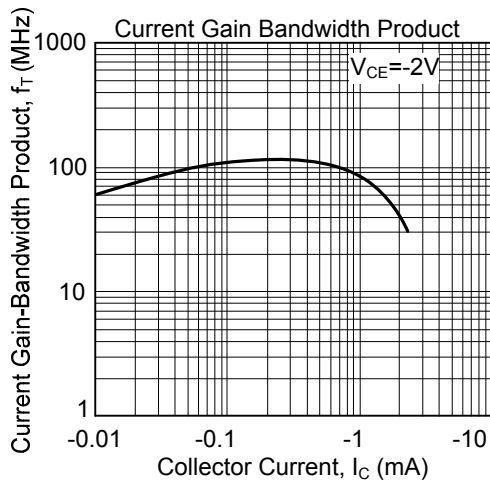
■ CLASSIFICATION OF h_{FE1}

| RANK | Y | G | L |
|------|-----------|-----------|-----------|
| hFE1 | 135 ~ 270 | 200 ~ 400 | 300 ~ 600 |

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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