



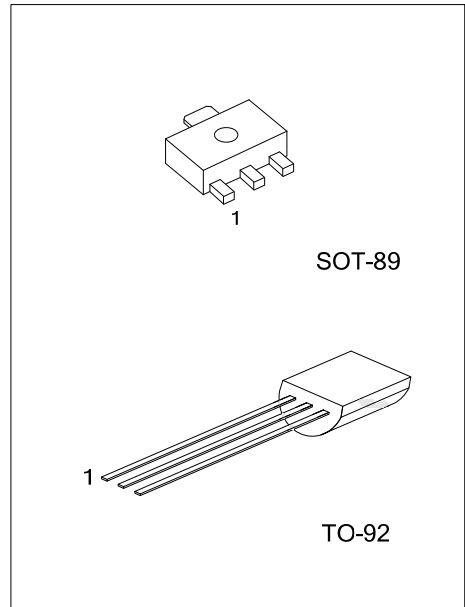
2N5401

PNP SILICON TRANSISTOR

HIGH VOLTAGE SWITCHING TRANSISTOR

■ FEATURES

- * Collector-emitter voltage:
V_{CEO} = -150V
- * High current gain,



■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-------------------|-------------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| - | 2N5401G-x-AB3-R | SOT-89 | B | C | E | Tape Reel |
| 2N5401L-x-T92-B | 2N5401G-x-T92-B | TO-92 | E | B | C | Tape Box |
| 2N5401L-x-T92-K | 2N5401G-x-T92-K | TO-92 | E | B | C | Bulk |
| 2N5401L-x-T92-A-B | 2N5401G-x-T92-A-B | TO-92 | E | C | B | Tape Box |
| 2N5401L-x-T92-A-K | 2N5401G-x-T92-A-K | TO-92 | E | C | B | Bulk |

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

| | | |
|--------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2N5401L-x-T92-A-B</p> | <p>(1)Packing Type (2)Pin Assignment (3)Package Type (4)Rank (5)Green Package</p> | <p>(1) B: Tape Box, K: Bulk, R: Tape Reel (2) refer to Pin Assignment (3) AB3: SOT-89, T92: TO-92 (4) x: refer to Classification of h_{FE2} (5) L: Lead Free, G: Halogen Free and Lead Free</p> |
|--------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

■ MARKING

| SOT-89 | TO-92 |
|--------|-------|
| | |

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

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|---------------------------|--------|-----------|------------|--------------------|
| Collector-Base Voltage | | V_{CBO} | -160 | V |
| Collector-Emitter Voltage | | V_{CEO} | -150 | V |
| Emitter-Base Voltage | | V_{EBO} | -5 | V |
| Collector Current | | I_C | -600 | mA |
| Collector Dissipation | SOT-89 | P_C | 500 | mW |
| | TO-92 | | 625 | mW |
| Junction Temperature | | T_J | +150 | $^{\circ}\text{C}$ |
| Storage Temperature | | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

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.

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

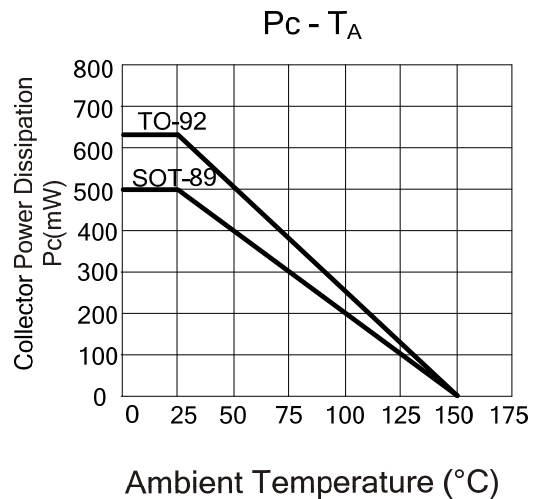
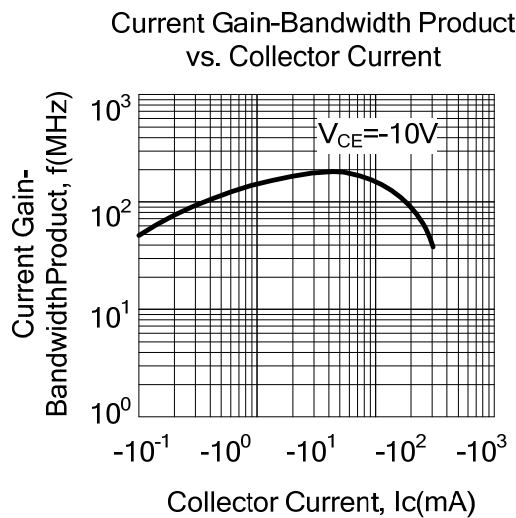
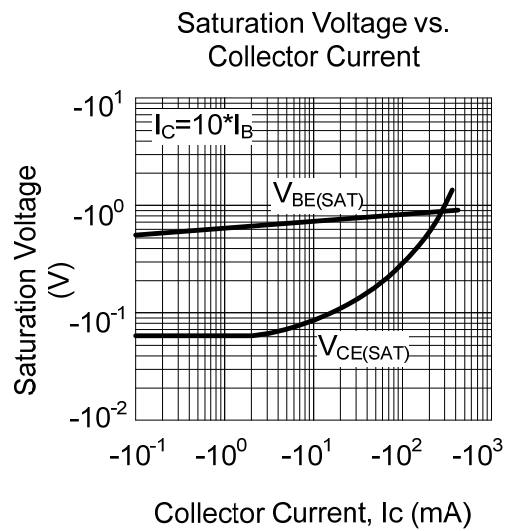
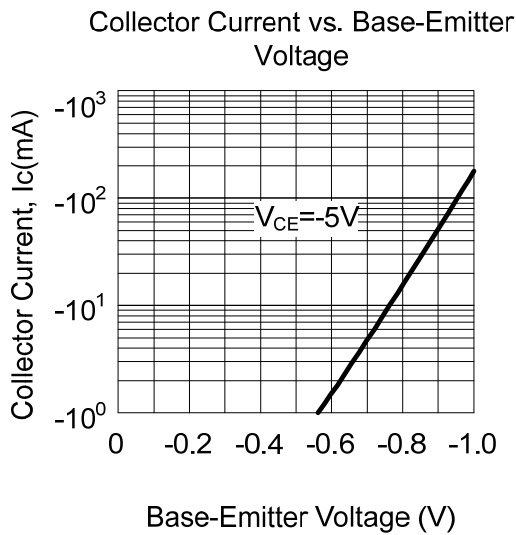
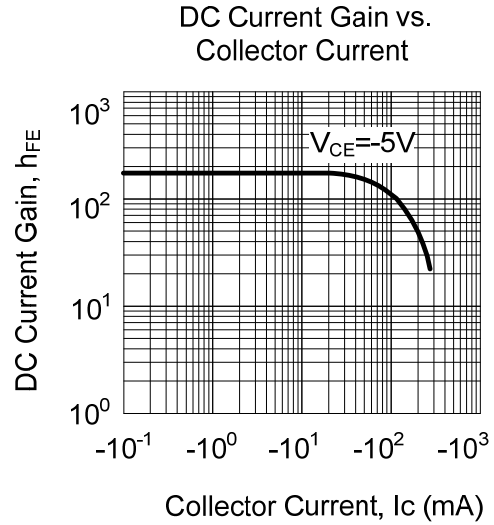
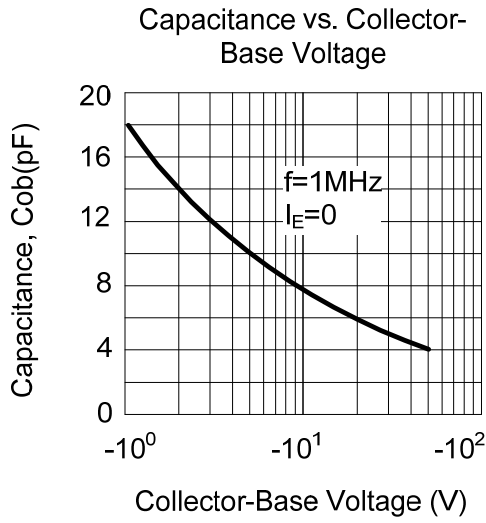
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------|------|-----|------|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = -100\mu\text{A}, I_E = 0$ | -160 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = -1\text{mA}, I_B = 0$ | -150 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = -10\mu\text{A}, I_C = 0$ | -5 | | | V |
| Collector Cut-off Current | I_{CBO} | $V_{CB} = -120\text{V}, I_E = 0$ | | | -50 | nA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = -3\text{V}, I_C = 0$ | | | -50 | nA |
| DC Current Gain (Note) | h_{FE1} | $V_{CE} = -5\text{V}, I_C = -1\text{mA}$ | 80 | | | |
| | h_{FE2} | $V_{CE} = -5\text{V}, I_C = -10\text{mA}$ | 80 | | 400 | |
| | h_{FE3} | $V_{CE} = -5\text{V}, I_C = -50\text{mA}$ | 80 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | $I_C = -10\text{mA}, I_B = -1\text{mA}$ | | | -0.2 | V |
| | | $I_C = -50\text{mA}, I_B = -5\text{mA}$ | | | -0.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C = -10\text{mA}, I_B = -1\text{mA}$ | | | -1 | V |
| | | $I_C = -50\text{mA}, I_B = -5\text{mA}$ | | | -1 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE} = -10\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$ | 100 | | 400 | MHz |
| Output Capacitance | C_{OB} | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$ | | | 6.0 | pF |
| Noise Figure | NF | $I_C = -0.25\text{mA}, V_{CE} = -5\text{V}$ $R_S = 1\text{k}\Omega, f = 10\text{Hz} \sim 15.7\text{kHz}$ | | | 8 | dB |

Note: Pulse test: $P_W < 300\mu\text{s}$, Duty Cycle $< 2\%$.

■ CLASSIFICATION OF h_{FE2}

| RANK | A | B | C |
|-------|--------|---------|---------|
| RANGE | 80-170 | 150-240 | 200-400 |

■ TYPICAL CHARACTERISTICS



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