



2SA1013

PNP EPITAXIAL SILICON TRANSISTOR

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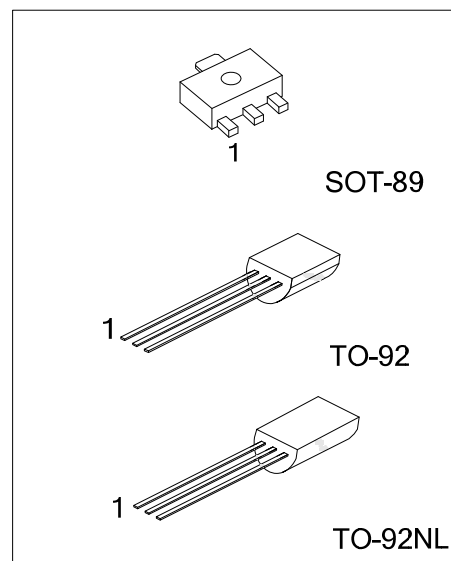
DESCRIPTION

The UTC **2SA1013** is a PNP epitaxial silicon transistor, it uses UTC's advanced technology to provide the customers with high BV_{CEO} and high DC current gain, etc.

The UTC **2SA1013** is suitable for power switching and color TV vertical deflection output, etc.

FEATURES

- * High BV_{CEO}
- * High DC current gain
- * Large continuous collector current capability



ORDERING INFORMATION

| Ordering Number | | Package | Pin assignment | | | Packing |
|------------------|------------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SA1013L-x-AB3-R | 2SA1013G-x-AB3-R | SOT-89 | B | C | E | Tape Reel |
| 2SA1013L-x-T92-B | 2SA1013G-x-T92-B | TO-92 | B | C | E | Tape Box |
| 2SA1013L-x-T92-K | 2SA1013G-x-T92-K | TO-92 | B | C | E | Bulk |
| 2SA1013L-x-T9N-B | 2SA1013G-x-T9N-B | TO-92NL | B | C | E | Tape Box |
| 2SA1013L-x-T9N-K | 2SA1013G-x-T9N-K | TO-92NL | B | C | E | Bulk |

| | | |
|------------------|-----------------|---|
| 2SA1013L-x-AB3-R | (1)Packing Type | (1) R: Tape Reel, B: Tape Box |
| | (2)Package Type | (2) AB3: SOT-89, T92: TO-92, T9N: TO-92NL |
| | (3)Rank | (3) refer to Classification of h_{FE} |
| | (4)Lead Free | (4) L: Lead Free, G: Halogen Free |

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|-----------------------------|---------------|-----------|----------|------------------|
| Collector-Base Voltage | | V_{CBO} | -160 | V |
| Collector-Emitter Voltage | | V_{CEO} | -160 | V |
| Emitter-Base Voltage | | V_{EBO} | -6 | V |
| Collector Current | | I_C | -1 | A |
| Base Current | | I_B | -0.5 | A |
| Collector Power Dissipation | SOT-89 | P_C | 500 | W |
| | TO-92/TO-92NL | | 900 | W |
| 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.

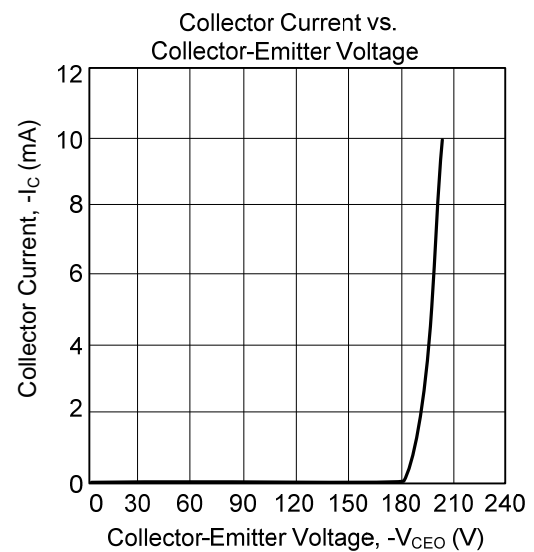
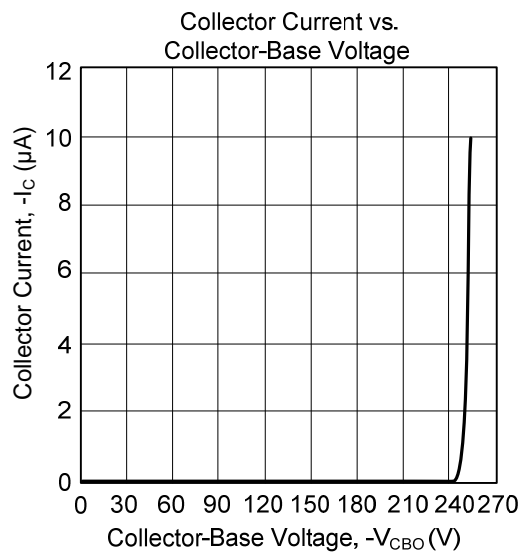
■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-------|-----|-------|---------------|
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=-150\text{V}, I_E=0$ | | | -1.0 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=-6\text{V}, I_C=0$ | | | -1.0 | μA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=-10\text{mA}, I_B=0$ | -160 | | | V |
| DC Current Gain | h_{FE} | $V_{CE}=-5\text{V}, I_C=-200\text{mA}$ | 60 | | 320 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-500\text{mA}, I_B=-50\text{mA}$ | | | -1.5 | V |
| Base-Emitter Voltage | V_{BE} | $V_{CE}=-5\text{V}, I_C=-5\text{mA}$ | -0.45 | | -0.75 | V |
| Transition Frequency | f_T | $V_{CE}=-5\text{V}, I_C=-200\text{mA}$ | 15 | 50 | | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=-10\text{V}, f=1\text{MHz}, I_E=0$ | | | 35 | pF |

■ CLASSIFICATION OF h_{FE}

| RANK | R | O | P |
|-------|--------|---------|---------|
| RANGE | 60~120 | 100~200 | 160~320 |

■ TYPICAL CHARACTERISTICS



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