



2SA1507

PNP SILICON TRANSISTOR

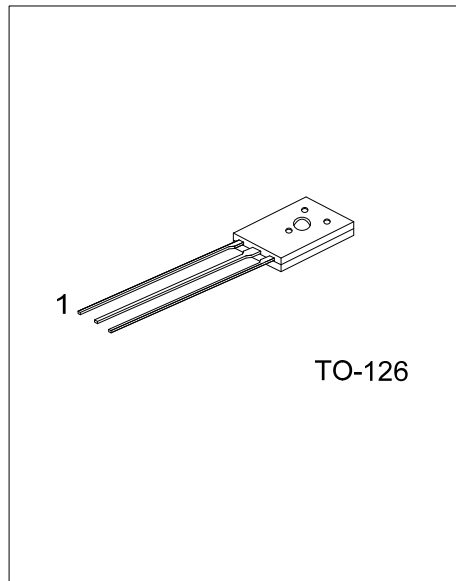
SWITCHING TRANSISTOR

■ APPLICATIONS

* Color TV audio output, converters, inverters

■ FEATURES

- * High breakdown voltage
- * Large current capacitance
- * High-speed switching



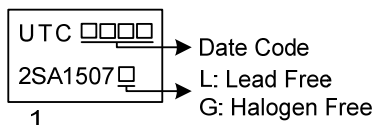
■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|----------------|---------|----------------|---|---|---------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| 2SA1507L-T60-K | 2SA1507G-T60-K | TO-126 | E | C | B | Bulk |

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

| | |
|--|--|
| <p>2SA1507G-T60-K</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p> | <p>(1) K: Bulk (2) T60: TO-126 (3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|--|--|

■ MARKING



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

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|-----------|------------|------------------|
| Collector-Base Voltage | V_{CBO} | -180 | V |
| Collector-emitter voltage | V_{CEO} | -160 | V |
| Emitter-Base Voltage | V_{EBO} | -6 | V |
| Collector Current | I_C | -1.5 | A |
| Collector Current (Peak) | I_{CP} | -2.5 | A |
| Collector Dissipation | P_C | 1.5 | W |
| Collector Dissipation ($T_C=25^\circ\text{C}$) | | 10 | 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 ($T_A=25^\circ\text{C}$, unless otherwise specified)

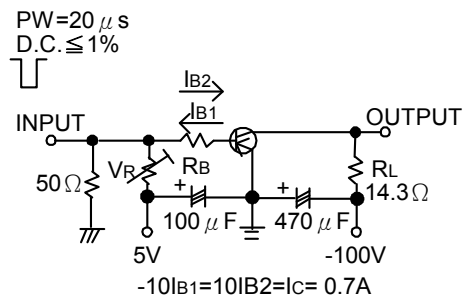
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|------|-------|------|---------------|
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=-10\mu\text{A}$, $I_E=0$ | -180 | | | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=-1\text{mA}$, $R_{BE}=\infty$ | -160 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_C=0$, $I_E=-10\mu\text{A}$ | -6 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=-120\text{V}$, $I_E=0$ | | | -0.1 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=-4\text{V}$, $I_C=0$ | | | -0.1 | μA |
| DC Current Gain | h_{FE1} | $V_{CE}=-5\text{V}$, $I_C=-100\text{mA}$ | 100 | | 400 | |
| | h_{FE2} | $V_{CE}=-5\text{V}$, $I_C=-10\text{mA}$ | 90 | | | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-500\text{mA}$, $I_B=-50\text{mA}$ | | -0.2 | -0.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=-500\text{mA}$, $I_B=-50\text{mA}$ | | -0.83 | -1.2 | V |
| Gain Bandwidth Product | f_T | $V_{CE}=-10\text{V}$, $I_C=-50\text{mA}$ | | 120 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=-10\text{V}$, $f=1\text{MHz}$ | | 22 | | pF |
| Turn-On Time | t_{on} | See specified Test Circuit | | 0.04 | | μs |
| Storage Time | T_{STG} | See specified Test Circuit | | 0.7 | | μs |
| Fall Time | t_f | See specified Test Circuit | | 0.04 | | μs |

Note: Pulse test: Pulse width=300 μs , Duty Cycle $\leq 2\%$

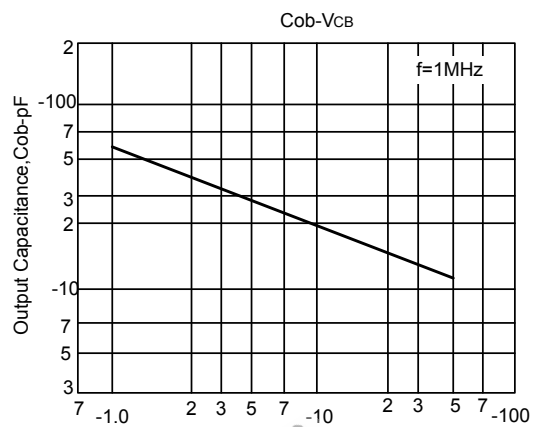
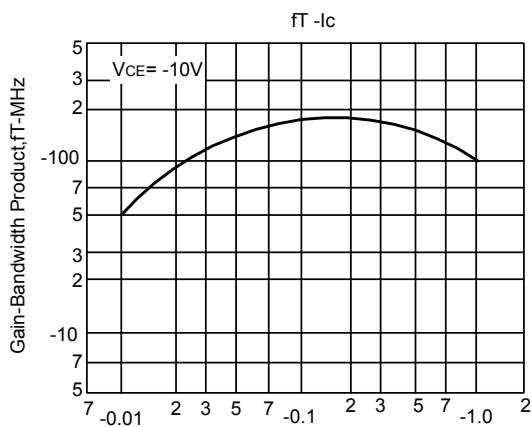
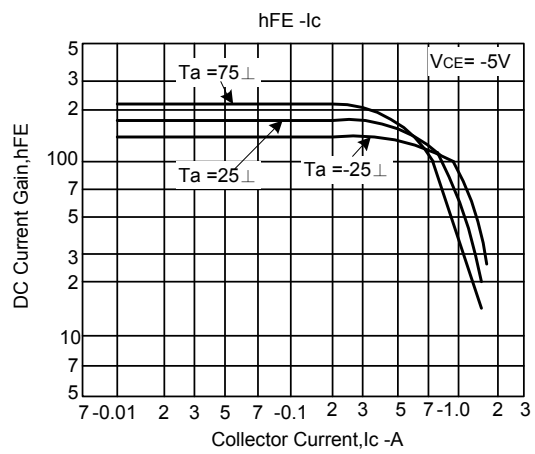
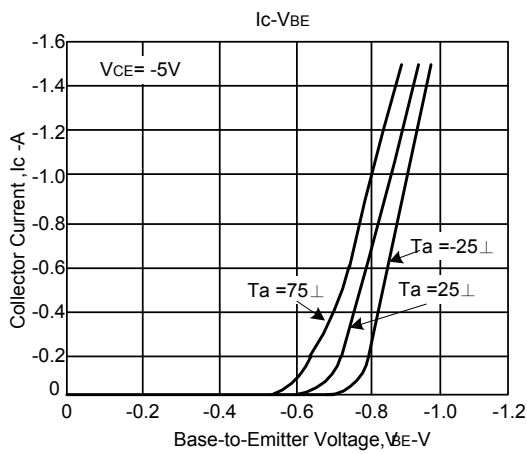
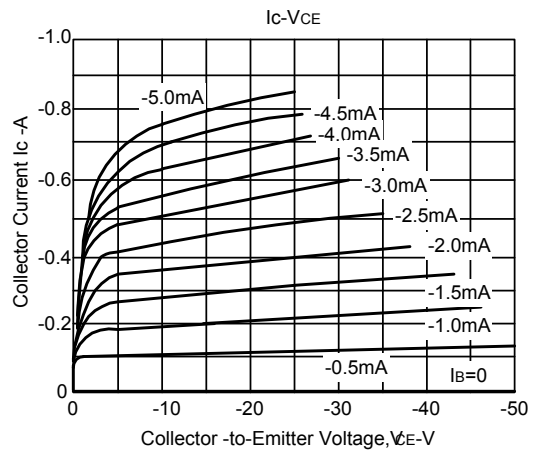
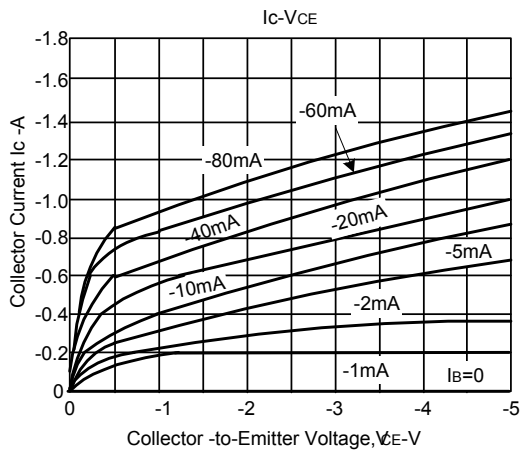
■ CLASSIFICATION OF h_{FE}

| RANK | R | S | T |
|-------|---------|---------|---------|
| RANGE | 100-200 | 140-280 | 200-400 |

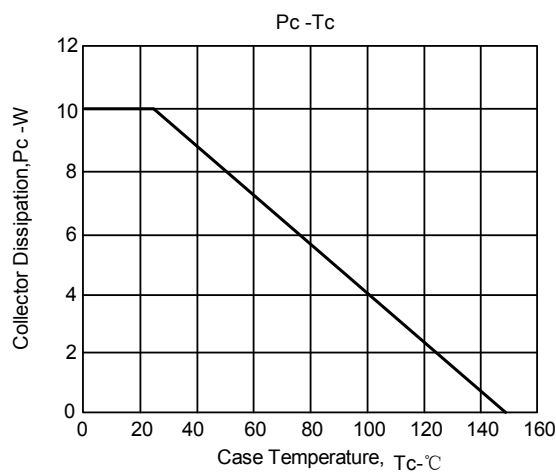
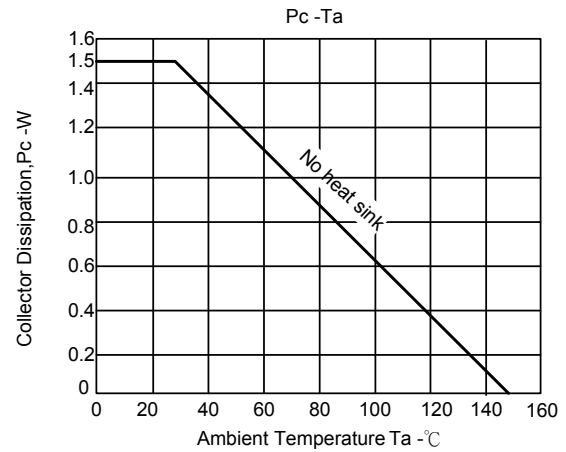
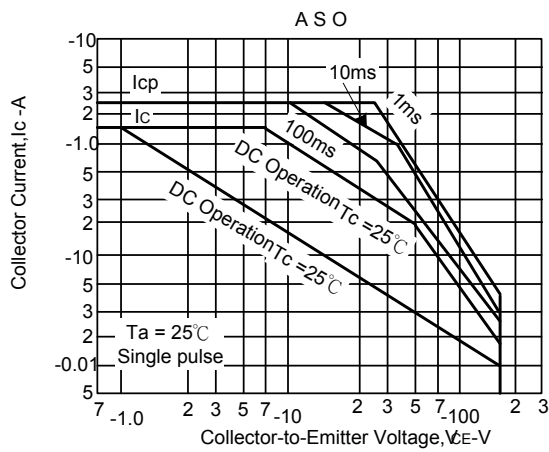
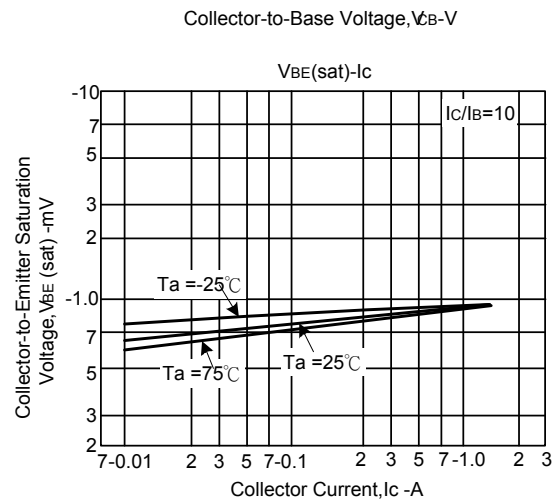
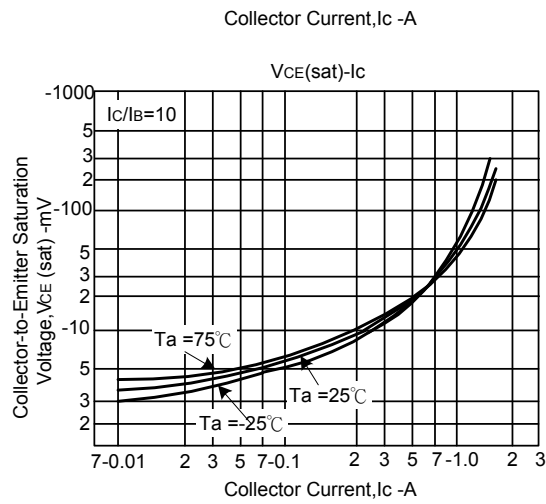
■ SWITCHING TIME TEST CIRCUIT



TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



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