



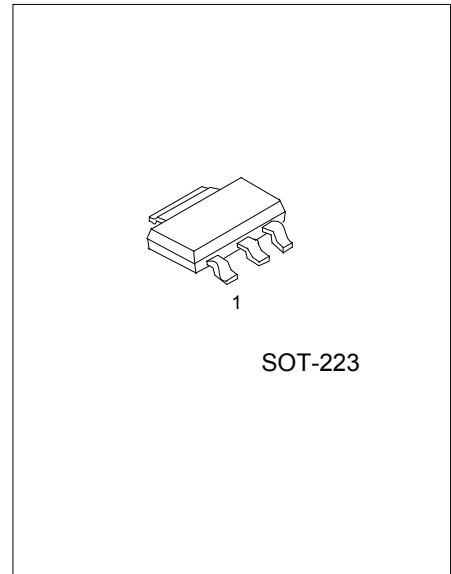
UP1851

PNP SILICON TRANSISTOR

HIGH CURRENT (HIGH PERFORMANCE) TRANSISTORS

■ FEATURES

- * 5 A continuous current , up to 15 A peak current
- * Very low saturation voltages
- * Excellent gain characteristics specified up to 10A
- * $P_D = 3W$



■ ORDERING INFORMATION

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|---------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| UP1851L-AA3-R | UP1851G-AA3-R | SOT-223 | B | C | E | Tape Reel |

| | |
|--|--|
| <p>UP1851L-AA3-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Free</p> | <p>(1) R: Tape Reel (2) AA3: SOT-223 (3) G: Halogen Free, L: Lead Free</p> |
|--|--|

■ ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|-----------|------------|------------------|
| Collector-Base Voltage | V_{CBO} | -100 | V |
| Collector-Emitter Voltage | V_{CEO} | -60 | V |
| Emitter-Base Voltage | V_{EBO} | -6 | V |
| Peak Pulse Current | I_{CM} | -15 | A |
| Continuous Collector Current | I_C | -5 | A |
| Power Dissipation ($T_A=25^\circ\text{C}$) | P_D | 3 | W |
| Junction Temperature | T_J | +150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^\circ\text{C}$ |

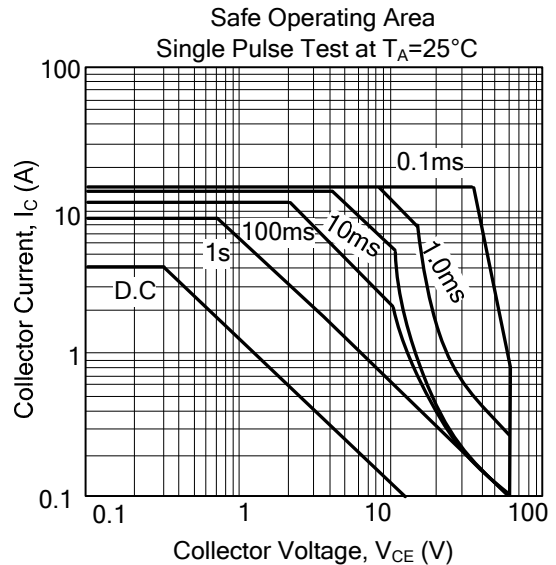
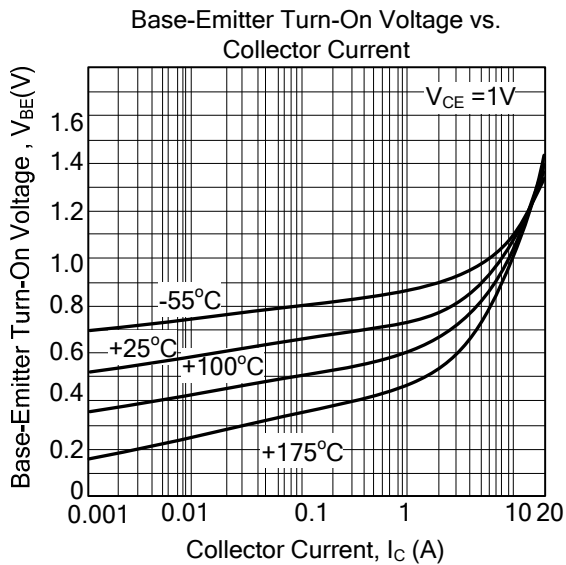
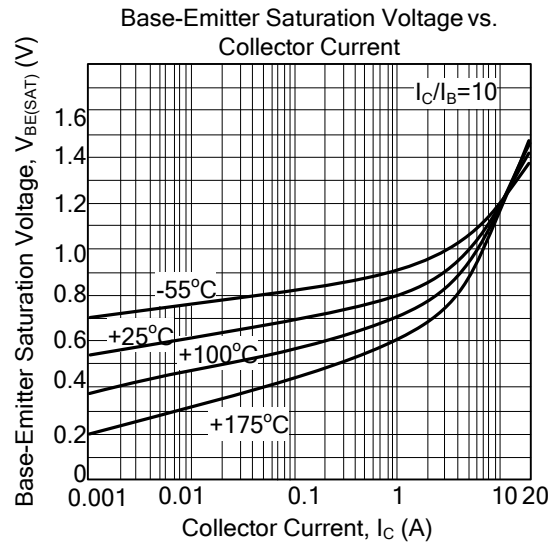
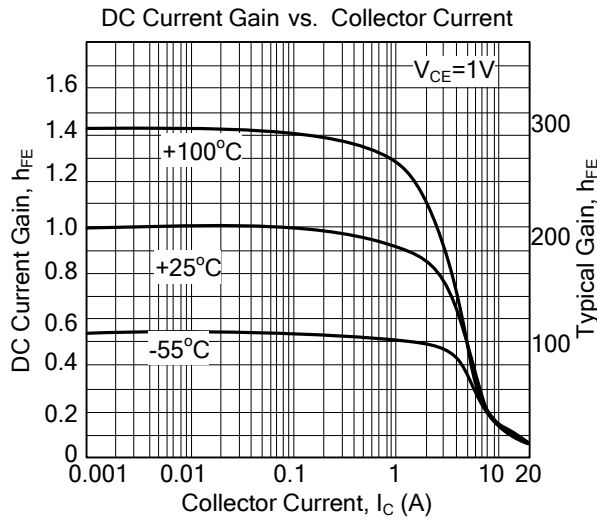
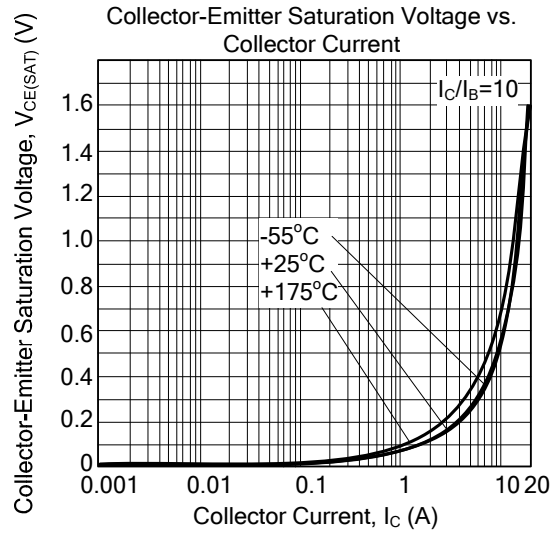
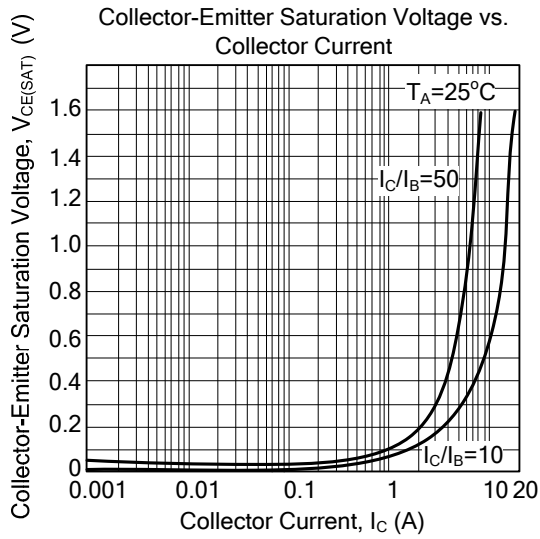
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---------------|---|------|-------|-------|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C=-100\mu\text{A}$ | -100 | -140 | | V |
| Collector-Emitter Breakdown Voltage | BV_{CER} | $I_C=-1\mu\text{A}$, $R_B \leq 1\text{K}\Omega$ | -100 | -140 | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C=-10\text{mA}$ (Note) | -60 | -90 | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E=-100\mu\text{A}$ | -6 | -8 | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB}=-80\text{V}$ | | | -150 | nA |
| Collector Cut-Off Current | I_{CER} | $V_{CB}=-80\text{V}$, $R_s \leq 1\text{k}\Omega$ | | | -150 | nA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB}=-6\text{V}$ | | | -50 | nA |
| Collector-Emitter Saturation Voltage (Note) | $V_{CE(SAT)}$ | $I_C=-100\text{mA}$, $I_B=-10\text{mA}$ | | -20 | -50 | mV |
| | | $I_C=-1\text{A}$, $I_B=-100\text{mA}$ | | -85 | -140 | |
| | | $I_C=-2\text{A}$, $I_B=-200\text{mA}$ | | -155 | -210 | |
| | | $I_C=-5\text{A}$, $I_B=-500\text{mA}$ | | -370 | -460 | |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | $I_C=-5\text{A}$, $I_B=-500\text{mA}$ (Note) | | -1080 | -1240 | mV |
| Base-Emitter Turn-On Voltage | $V_{BE(ON)}$ | $I_C=-5\text{A}$, $V_{CE}=-1\text{V}$ (Note) | | -935 | -1070 | mV |
| DC Current Gain (Note) | h_{FE} | $I_C=-10\text{mA}$, $V_{CE}=-1\text{V}$ | 100 | 200 | | |
| | | $I_C=-2\text{A}$, $V_{CE}=-1\text{V}$ | 100 | 200 | 300 | |
| | | $I_C=-5\text{A}$, $V_{CE}=-1\text{V}$ | 75 | 90 | | |
| | | $I_C=-10\text{A}$, $V_{CE}=-1\text{V}$ | 10 | 25 | | |
| Transition Frequency | f_T | $I_C=-100\text{mA}$, $V_{CE}=-10\text{V}$, $f=50\text{MHz}$ | | 120 | | MHz |
| Output Capacitance | C_{OBO} | $V_{CB}=-10\text{V}$, $f=1\text{MHz}$ | | 74 | | pF |
| Switching Times | t_{ON} | $I_C=-2\text{A}$, $I_{B1}=-200\text{mA}$ | | 82 | | ns |
| | t_{OFF} | $I_{B2}=200\text{mA}$, $V_{CC}=-10\text{V}$ | | 350 | | |

Note: Pulse width=300 μs . Duty cycle \leq 2%

■ TYPICAL CHARACTERISTICS



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