

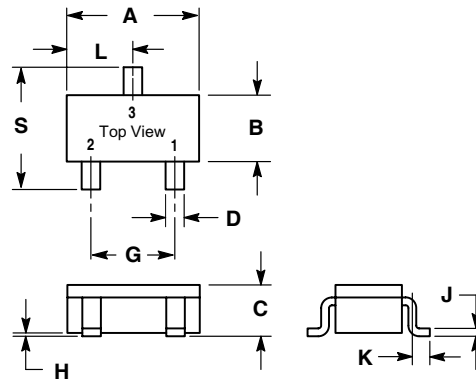
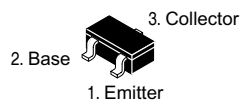
RoHS Compliant Product

FEATURES

- High Collector Current
- Low $V_{CE(sat)} - V_{CE(sat)} \leq -250\text{mV}$ at $I_C = -200\text{mA}/I_B = -10\text{mA}$

MARKING CODE

BW



| SOT-523 | | |
|---------------------|------|------|
| Dim | Min | Max |
| A | 1.50 | 1.70 |
| B | 0.78 | 0.82 |
| C | 0.80 | 0.82 |
| D | 0.28 | 0.32 |
| G | 0.90 | 1.10 |
| H | 0.00 | 0.10 |
| J | 0.10 | 0.20 |
| K | 0.35 | 0.41 |
| L | 0.49 | 0.51 |
| S | 1.50 | 1.70 |
| All Dimension in mm | | |

Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Limits | Unit |
|--------------------------------|-----------|----------|------------------|
| Collector-base voltage | V_{CB0} | -15 | V |
| Collector-emitter voltage | V_{CEO} | -12 | V |
| Emitter-base voltage | V_{EB0} | -6 | V |
| Collector current (Continuous) | I_C | -0.5 | A |
| Collector power dissipation | P_C | 0.15 | W |
| Junction temperature | T_j | -55~+150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55~+150 | $^\circ\text{C}$ |

Electrical Characteristics ($T_{amb} = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|--------------------------------------|---------------|------|------|-------|---------------|--|
| Collector-base breakdown voltage | BV_{CB0} | -15 | | | V | $I_C = -10\ \mu\text{A}$, $I_E = 0$ |
| Collector-emitter breakdown voltage | BV_{CEO} | -12 | | | V | $I_C = -1\text{mA}$, $I_B = 0$ |
| Emitter-base breakdown voltage | BV_{EB0} | -6 | | | V | $I_E = -10\ \mu\text{A}$, $I_C = 0$ |
| Collector cutoff current | I_{CB0} | | | -0.1 | μA | $V_{CB} = -15\text{V}$, $I_E = 0$ |
| Emitter cutoff current | I_{EB0} | | | -0.1 | μA | $V_{EB} = -6\text{V}$, $I_C = 0$ |
| DC current gain | h_{FE} | 270 | | 680 | | $V_{CE} = -2\text{V}$, $I_C = -10\text{mA}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | | | -0.25 | V | $I_C = -200\text{mA}$, $I_B = -10\text{mA}$ |
| Transition frequency | f_r | | 260 | | MHz | $V_{CE} = -2\text{V}$, $I_C = -10\text{mA}$, $f = 100\text{MHz}$ |
| Collector Output capacitance | C_{ob} | | 6.5 | | pF | $V_{CB} = -10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$ |

● **Electrical Characteristic Curves**

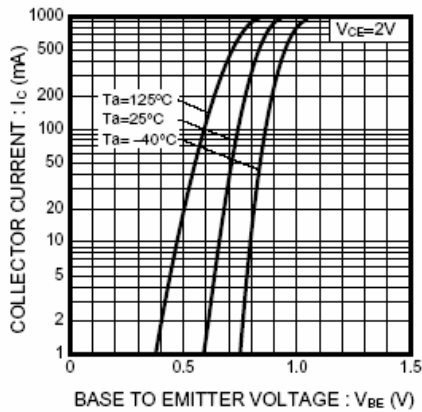


Fig.1 Grounded Emitter Propagation Characteristics

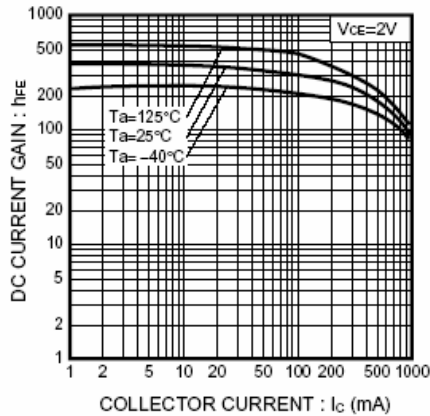


Fig.2 DC Current Gain vs. Collector Current

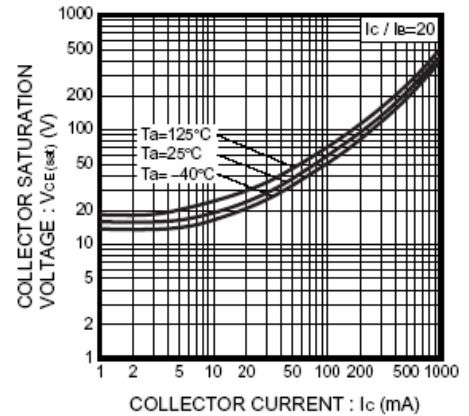


Fig.3 Collector-Emitter Saturation Voltage vs. Collector Current (I)

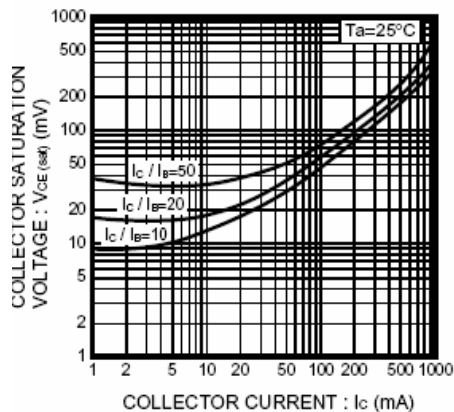


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current (II)

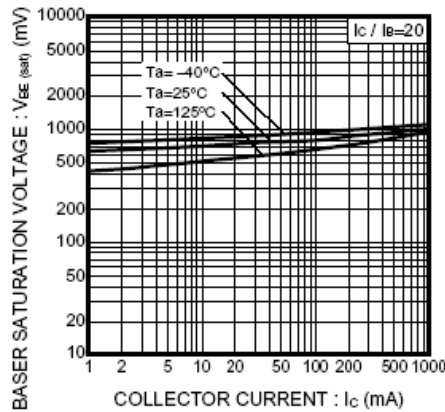


Fig.5 Base-Emitter Saturation Voltage vs. Collector Current

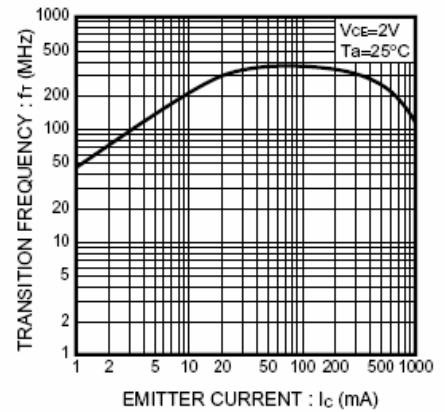


Fig.6 Gain Bandwidth Product vs. Emitter Current

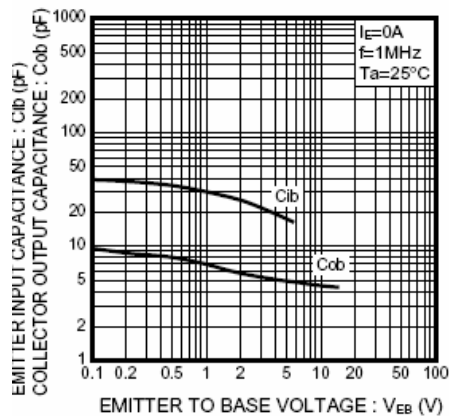


Fig.7 Collector Output Capacitance vs. Collector-Base Voltage
Emitter Input Capacitance vs. Emitter-Base Voltage