

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

FEATURES

Power dissipation

$$P_{CM} : 0.2 \text{ W}$$

Collector Current

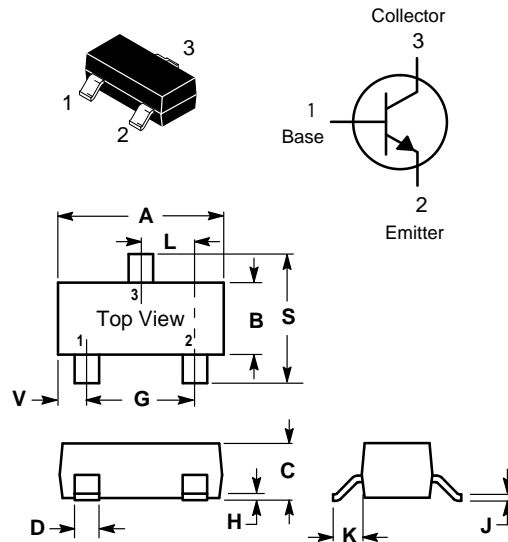
$$I_{CM} : 0.1 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 50 \text{ V}$$

Operating & storage junction temperature

$$T_j, T_{stg} : -55^\circ\text{C} \sim +150^\circ\text{C}$$



| SOT-23 | | |
|---------------------|-------|-------|
| Dim | Min | Max |
| A | 2.800 | 3.040 |
| B | 1.200 | 1.400 |
| C | 0.890 | 1.110 |
| D | 0.370 | 0.500 |
| G | 1.780 | 2.040 |
| H | 0.013 | 0.100 |
| J | 0.085 | 0.177 |
| K | 0.450 | 0.600 |
| L | 0.890 | 1.020 |
| S | 2.100 | 2.500 |
| V | 0.450 | 0.600 |
| All Dimension in mm | | |

ELECTRICAL CHARACTERISTICS (Tamp.=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|------|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 100 \mu\text{A}, I_E = 0$ | 50 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 0.1\text{mA}, I_B = 0$ | 45 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 100 \mu\text{A}, I_C = 0$ | 5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = 50 \text{ V}, I_E = 0$ | | | 0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE} = 35 \text{ V}, I_B = 0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 3 \text{ V}, I_C = 0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$ | 200 | | 1000 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$ | | | 0.3 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$ $f = 30 \text{ MHz}$ | 150 | | | MHz |

CLASSIFICATION OF $h_{FE(1)}$

| Rank | L | H |
|-------|---------|----------|
| Range | 200-450 | 450-1000 |

DEVICE MARKING: S9014 =J6

Typical Characteristics

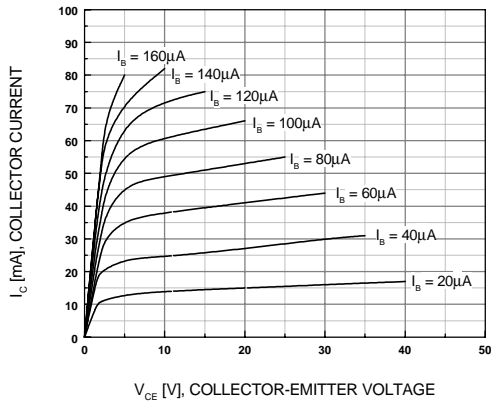


Figure 1. Static Characteristic

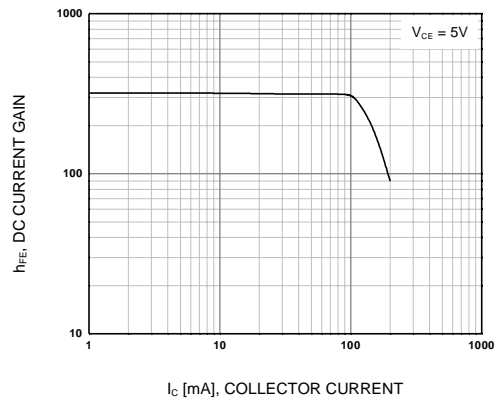
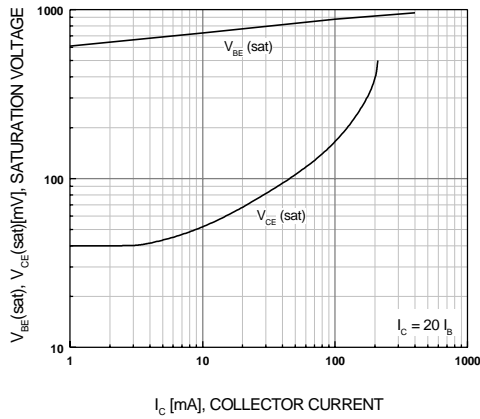


Figure 2. DC current Gain



**Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**

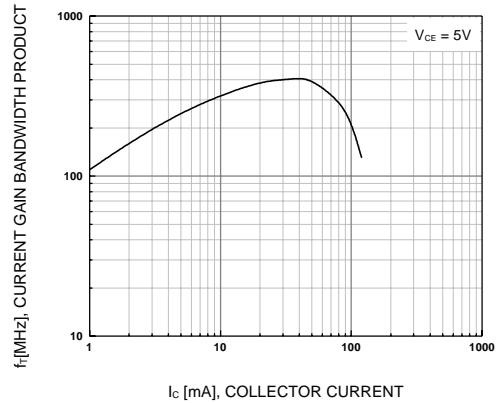


Figure 4. Current Gain Bandwidth Product