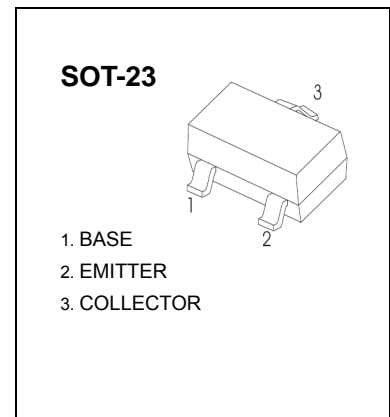


SOT-23 Plastic-Encapsulate Transistors

S9012 TRANSISTOR (PNP)**FEATURES**

- High Collector Current
- Complementary To S9013
- Excellent h_{FE} Linearity

MARKING: 2T1**MAXIMUM RATINGS** ($T_a=25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Unit |
|-----------------|---|----------|---------------------------|
| V_{CBO} | Collector-Base Voltage | -40 | V |
| V_{CEO} | Collector-Emitter Voltage | -25 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current | -500 | mA |
| P_C | Collector Power Dissipation | 300 | mW |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 416 | $^\circ\text{C}/\text{W}$ |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55~+150 | $^\circ\text{C}$ |

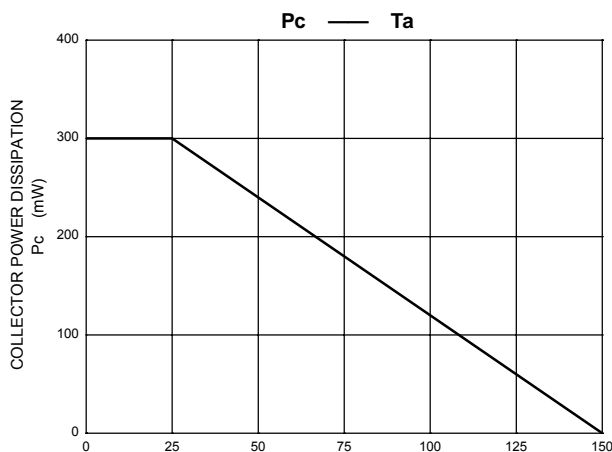
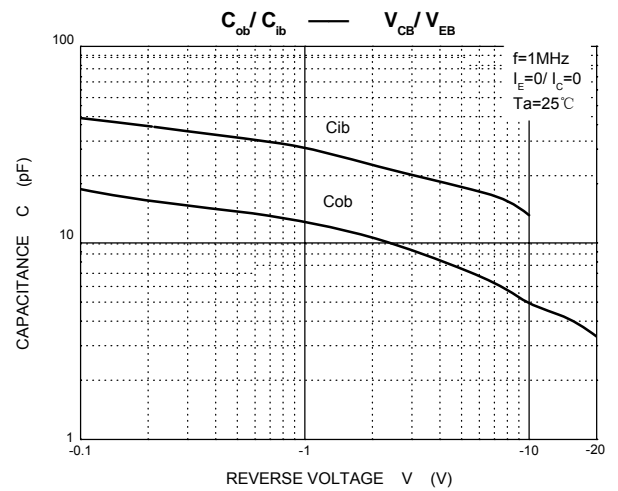
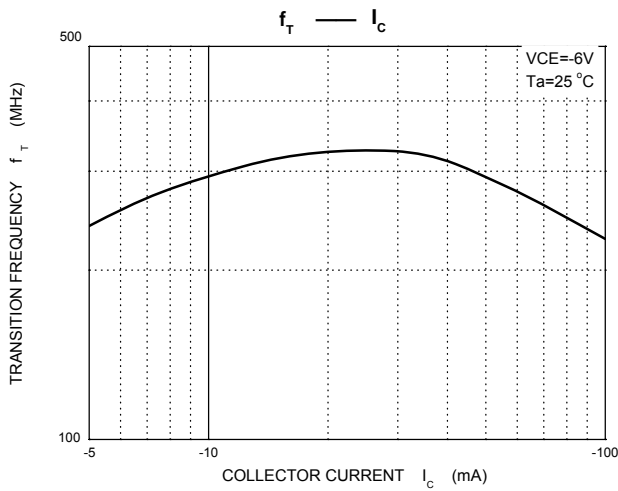
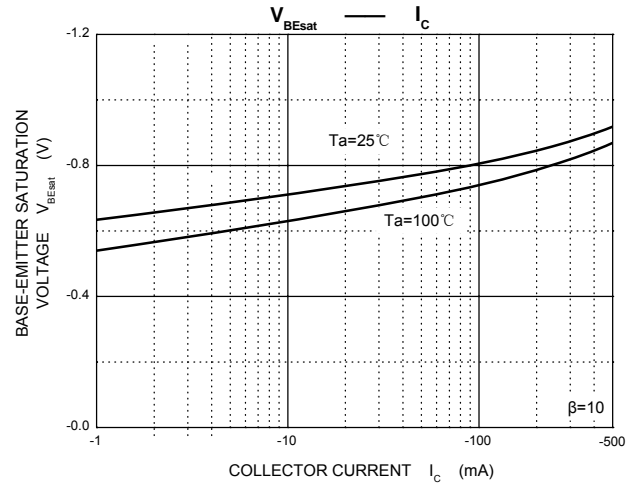
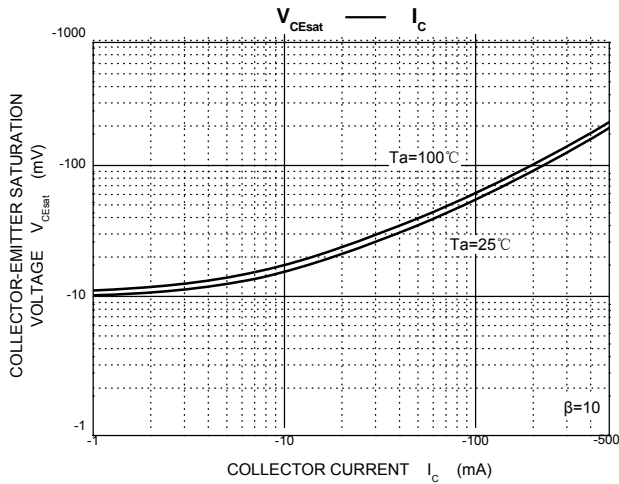
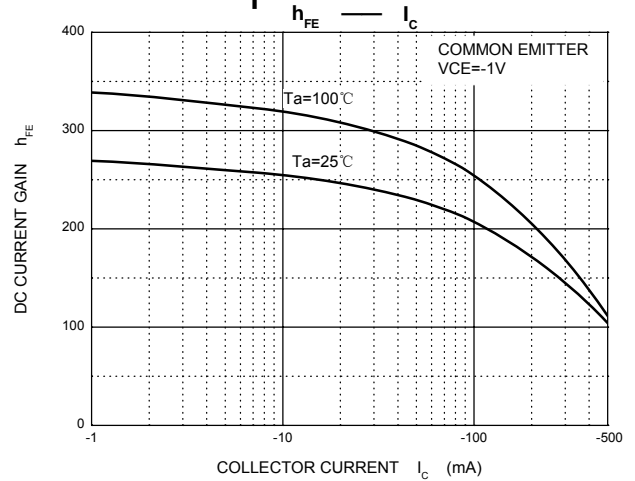
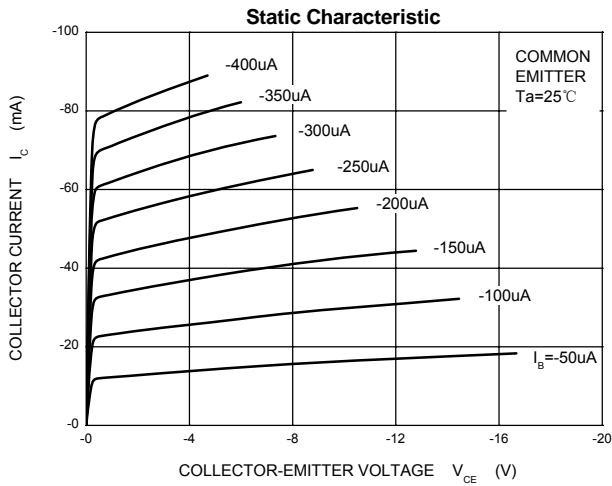
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|------|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=-0.1\text{mA}, I_E=0$ | -40 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=-1\text{mA}, I_B=0$ | -25 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=-0.1\text{mA}, I_C=0$ | -5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=-40\text{V}, I_E=0$ | | | -0.1 | μA |
| Collector cut-off current | I_{CEO} | $V_{CE}=-20\text{V}, I_B=0$ | | | -0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=-5\text{V}, I_C=0$ | | | -0.1 | μA |
| DC current gain | h_{FE} | $V_{CE}=-1\text{V}, I_C=-50\text{mA}$ | 120 | | 400 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=-500\text{mA}, I_B=-50\text{mA}$ | | | -0.6 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C=-500\text{mA}, I_B=-50\text{mA}$ | | | -1.2 | V |
| Transition frequency | f_T | $V_{CE}=-6\text{V}, I_C=-20\text{mA}, f=30\text{MHz}$ | 150 | | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$ | | | 5 | pF |

CLASSIFICATION OF h_{FE}

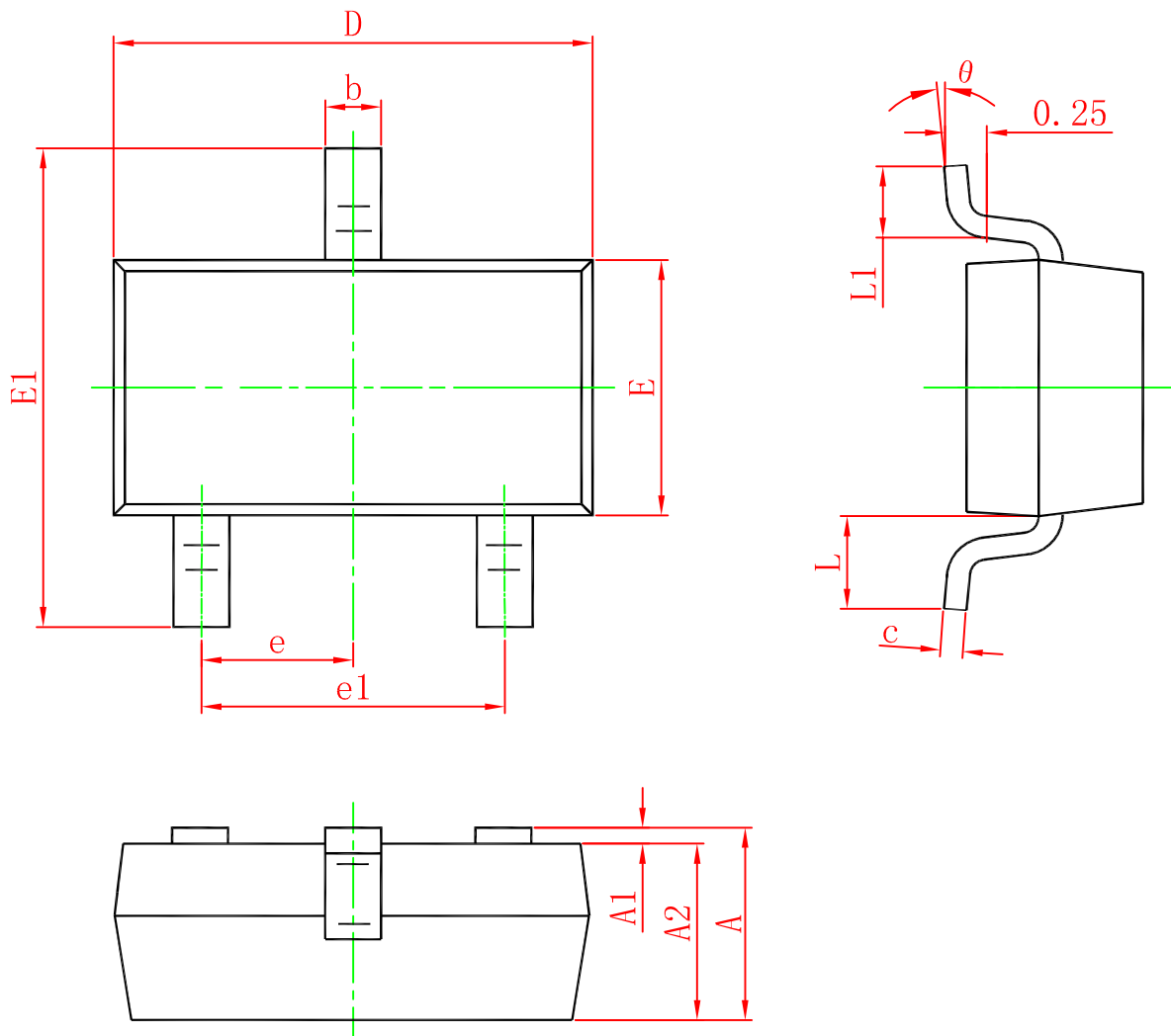
| RANK | L | H | J |
|-------|---------|---------|---------|
| RANGE | 120-200 | 200-350 | 300-400 |

SOT-23 Plastic-Encapsulate Transistors



SOT-23 Plastic-Encapsulate Transistors

SOT-23 PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |