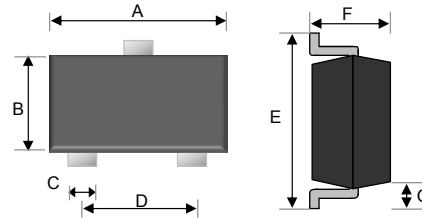
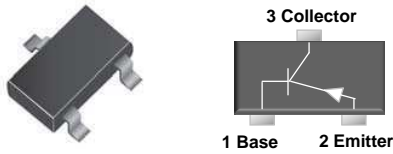


Small Signal Transistor

SOT-23



Features

- ↳ Epitaxial planar die construction
- ↳ Surface device type mounting
- ↳ Moisture sensitivity level 1
- ↳ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ↳ Pb free version and RoHS compliant
- ↳ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

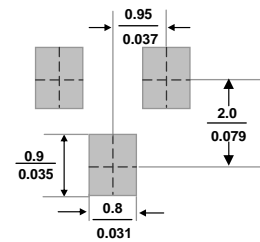
- ↳ Case : SOT- 23 small outline plastic package
- ↳ Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ↳ High temperature soldering guaranteed: 260°C/10s
- ↳ Weight : 0.008gram (approximately)
- ↳ Marking Code : 2F

| Dimensions | Unit (mm) | | Unit (inch) | |
|------------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 2.80 | 3.00 | 0.110 | 0.118 |
| B | 1.20 | 1.40 | 0.047 | 0.055 |
| C | 0.30 | 0.50 | 0.012 | 0.020 |
| D | 1.80 | 2.00 | 0.071 | 0.079 |
| E | 2.25 | 2.55 | 0.089 | 0.100 |
| F | 0.90 | 1.20 | 0.035 | 0.043 |
| G | 0.550 REF | | 0.022 REF | |

Ordering Information

| Package | Part No. | Packing | Marking |
|---------|---------------|--------------|---------|
| SOT-23 | MMBT2907A RF | 3K / 7" Reel | 2F |
| SOT-23 | MMBT2907A RFG | 3K / 7" Reel | 2F |

Suggested PAD Layout



Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

| Type Number | Symbol | Value | Units |
|--|----------------|--------------|-------|
| Power Dissipation | P_D | 350 | mW |
| Collector-Base Voltage | V_{CBO} | -60 | V |
| Collector-Emitter Voltage | V_{CEO} | -60 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -600 | mA |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55 to + 150 | °C |

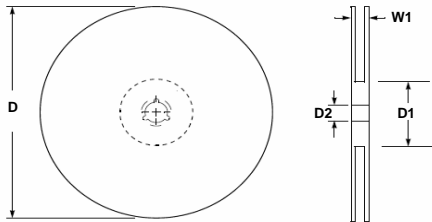
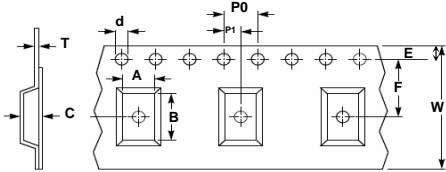
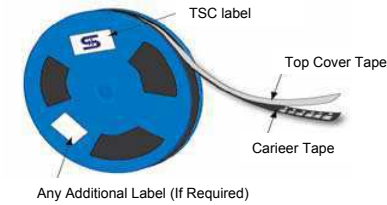
Notes:1. Valid provided that electrodes are kept at ambient temperature

Small Signal Transistor

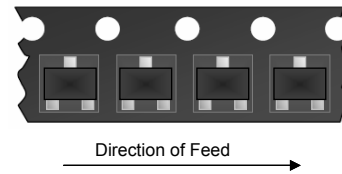
Electrical Characteristics

| Type Number | Symbol | Min | Max | Units |
|--------------------------------------|---------------|-----------------------------------|--------------|-------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -60 | - | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -60 | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | - | V |
| Collector Cut-off Current | I_{CBO} | - | -20 | nA |
| Collector Cut-off Current | I_{CEX} | - | -50 | nA |
| Base Cut-off Current | I_B | - | -50 | nA |
| DC current gain | h_{FE} | $V_{CE} = -10V$ $I_C = -0.1mA$ | 75 | - |
| | | $V_{CE} = -10V$ $I_C = -1mA$ | 100 | - |
| | | $V_{CE} = -10V$ $I_C = -10mA$ | 100 | - |
| | | $V_{CE} = -10V$ $I_C = -150mA$ | 100 | 300 |
| | | $V_{CE} = -10V$ $I_C = -500mA$ | 50 | - |
| Collector-Emitter saturation voltage | $V_{CE(sat)}$ | - | -0.4 -1.6 | V |
| Base-Emitter saturation voltage | $V_{BE(sat)}$ | - | -1.3 -2.6 | V |
| Transition frequency | f_T | 200 | - | MHz |
| Output Capacitance | C_{obo} | - | 8.0 | pF |
| Input Capacitance | C_{ibo} | - | 30 | pF |
| Delay time | t_d | - | 10 | nS |
| Rise time | t_r | - | 40 | nS |
| Storage time | t_s | - | 80 | nS |
| Fall time | t_f | - | 30 | nS |

Tape & Reel specification



| Item | Symbol | Dimension(mm) |
|------------------------|--------|---------------|
| Carrier width | A | 3.15 ±0.10 |
| Carrier length | B | 2.77 ±0.10 |
| Carrier depth | C | 1.22 ±0.10 |
| Sprocket hole | d | 1.50 ±0.10 |
| Reel outside diameter | D | 178 ± 1 |
| Reel inner diameter | D1 | 55 Min |
| Feed hole width | D2 | 13.0 ± 0.20 |
| Sprocket hole position | E | 1.75 ±0.10 |
| Punch hole position | F | 3.50 ±0.05 |
| Sprocket hole pitch | P0 | 4.00 ±0.10 |
| Embossment center | P1 | 2.00 ±0.05 |
| Overall tape thickness | T | 0.229 ±0.013 |
| Tape width | W | 8.10 ±0.20 |
| Reel width | W1 | 12.30 ±0.20 |



Small Signal Transistor

Rating and Characteristic Curves

