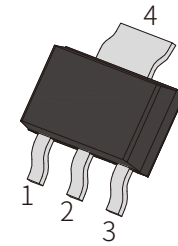


FEATURES

- | High current

- | Three current gain selections

- | High power dissipation capability



SOT-223

APPLICATIONS

- | Linear voltage regulators

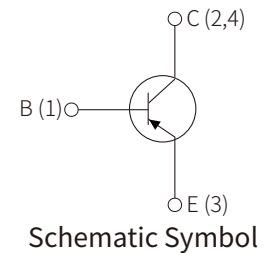
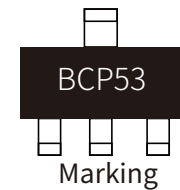
- | High-side switches

- | Battery-driven devices

- | Power management

- | MOSFET drivers

- | Amplifiers



APPROVALS

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Value | Unit |
|--|---------------|----------|--------------------|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -100 | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -80 | |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | |
| Collector Current (Continuous) ^(Note 1) | I_C | -1 | A |
| Power Dissipation | P_{tot} | 0.625 | W |
| Junction Temperature Range | T_J | 150 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_{STG} | -55~+150 | $^{\circ}\text{C}$ |

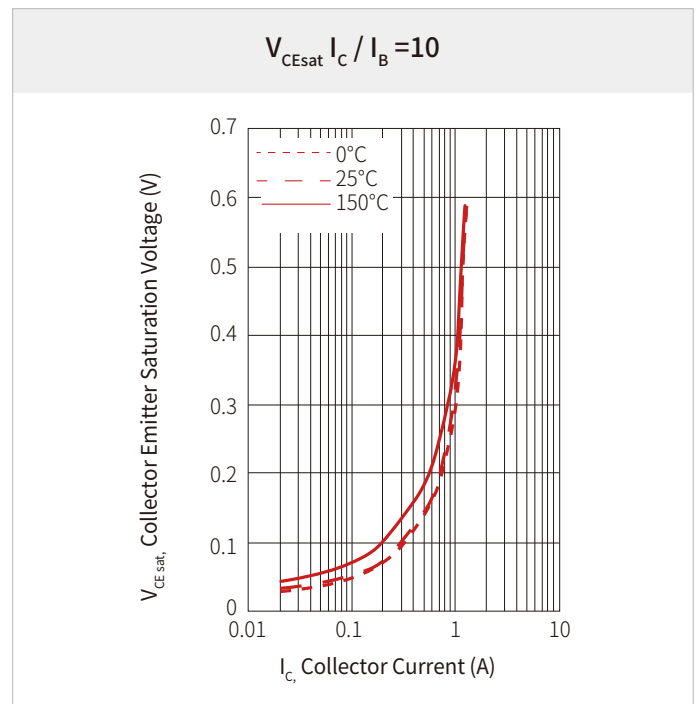
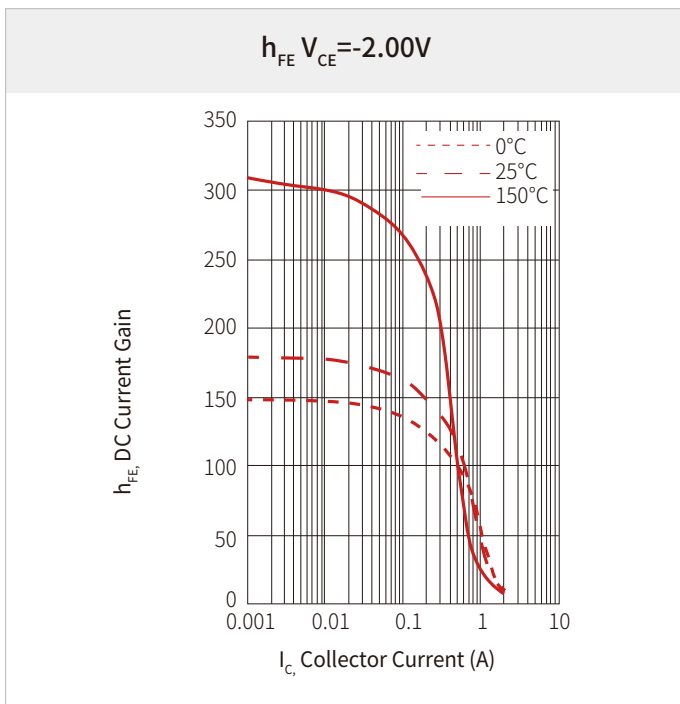
ELECTRICAL CHARACTERISTICS (T_A=25°C)

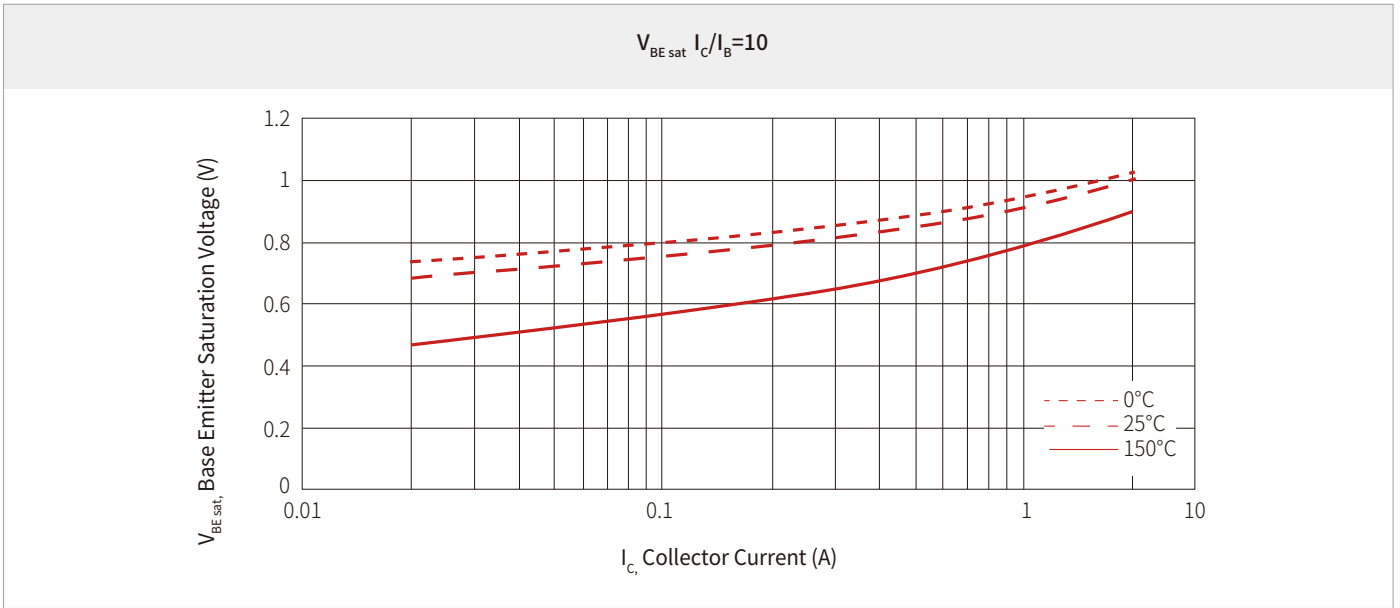
| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|--|----------------------|--|------|------|------|------|
| Collector Cut-off Current ^(Note 2) | I _{CBO} | V _{CB} = -90V, I _E = 0 | | | -0.1 | μA |
| Emitter Cut-off Current ^(Note 2) | I _{EBO} | V _{EB} = -5V, I _C = 0 | | | -0.2 | μA |
| DC Current Gain ^(Note 2) | h _{FE} | V _{CE} = -2V, I _C = -150mA | 55 | | 400 | |
| Collector-Emitter Saturation Voltage ^(Note 2) | V _{CE(sat)} | I _C = -500mA, I _B = -50mA | | | -0.5 | V |
| Base-Emitter Saturation Voltage ^(Note 2) | V _{BE(sat)} | I _C = -500mA, I _B = -50mA | | | -1.5 | V |
| Transition Frequency | f _T | V _{CE} = -10V, I _C = -50mA, f = 100MHz | 100 | | | MHz |

Note:

1. Test pulse width tp < 5ms
2. When testing DC parameters, short duration pulses with minimum self-heating effect, pulse width tp ≤ 300μs, duty cycle δ ≤ 2% are used.

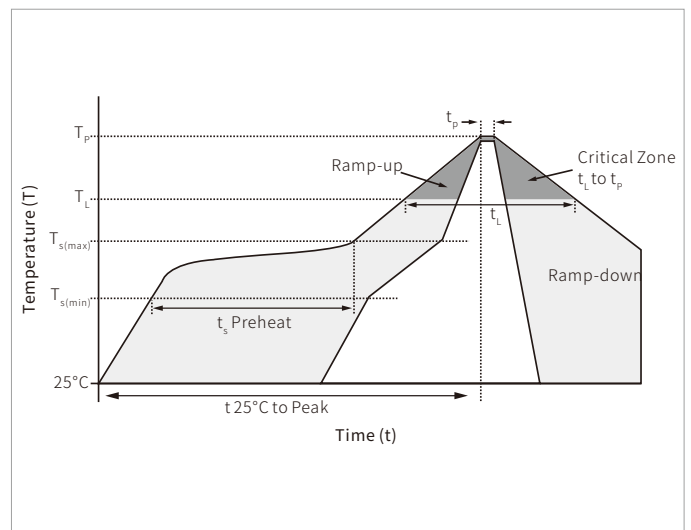
TYPICAL CHARACTERISTICS



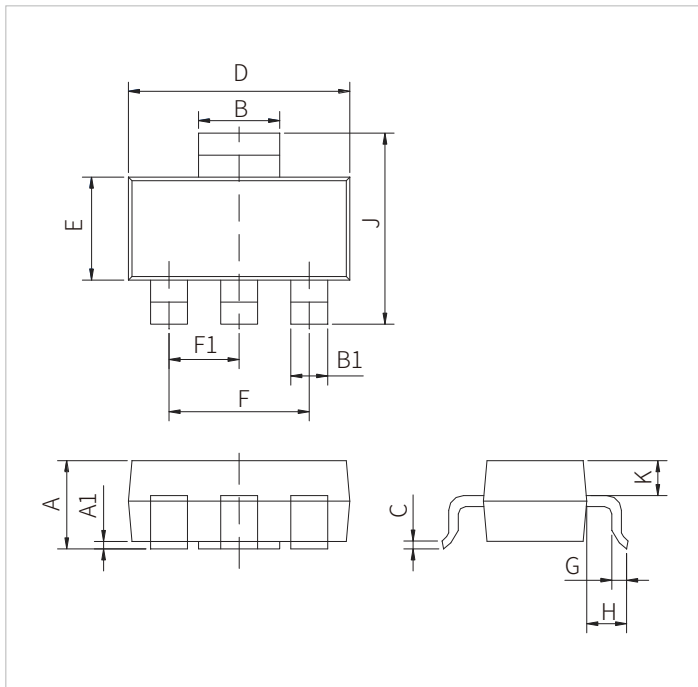


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|--|----------------------------------|--------------------|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Time (min to max) (t_L) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260°C |



SOT-223 PACKAGE DIMENSIONS



| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 1.50 | | 1.80 | 0.059 | | 0.071 |
| A1 | 0.01 | | 0.06 | 0.001 | | 0.002 |
| B | 2.90 | | 3.10 | 0.114 | | 0.122 |
| B1 | 0.60 | | 0.80 | 0.024 | | 0.031 |
| C | 0.22 | | 0.32 | 0.009 | | 0.013 |
| D | 6.30 | | 6.70 | 0.248 | | 0.264 |
| E | 3.30 | | 3.70 | 0.130 | | 0.146 |
| F | | 4.60 | | | 0.181 | |
| F1 | | 2.30 | | | 0.091 | |
| G | 0.70 | | 1.10 | 0.028 | | 0.043 |
| H | 1.50 | | 2.00 | 0.059 | | 0.079 |
| J | 6.70 | | 7.30 | 0.264 | | 0.287 |
| K | | 0.90 | | | 0.035 | |

ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| BCP53 | SOT-223 | 2500PCS | 13" |

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