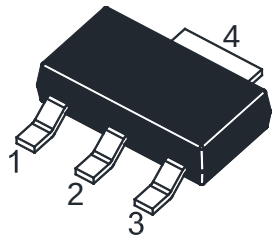
# BCP53Q-HAF

## PNP Silicon Epitaxial Planar Transistor




1.Base 2.Collector 3.Emitter 4. Collector
SOT-223 Plastic Package

### Features

• Halogen and Antimony Free(HAF), RoHS compliant

### Absolute Maximum Ratings ($T_a$ = 25℃)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $-V_{CBO}$ | 100 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 80 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 5 | V |
| Collector Current | $-I_C$ | 1 | A |
| Peak Collector Current | $-I_{CM}$ | 1.5 | A |
| Peak Base Current | $-I_{BM}$ | 0.2 | A |
| Total Power Dissipation | $P_{tot}$ | 1.3 | W |
| Junction Temperature | $T_j$ | 150 | ℃ |
| Storage Temperature Range | $T_{stg}$ | - 65 to + 150 | ℃ |

### Thermal Characteristics

| Parameter | Symbol | Max. | Unit |
|---|---|---|---|
| Thermal Resistance from Junction to Ambient [1)] | $R_{\theta JA}$ | 96 | ℃/W |

[1)] Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate



*Dated: 06/11/2020 Rev: 02*

**Characteristics at $T_a$ = 25℃**

| Parameter | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| DC Current Gain | | | | | | |
| at $-V_{CE}$ = 2 V, $-I_C$ = 5 mA | | $h_{FE}$ | 40 | - | - | - |
| at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA | | $h_{FE}$ | 25 | - | - | - |
| at $-V_{CE}$ = 2 V, $-I_C$ = 150 mA | -10 | $h_{FE}$ | 63 | - | 160 | - |
| | -16 | $h_{FE}$ | 100 | - | 250 | - |
| Collector Base Cutoff Current<br>at $-V_{CB}$ = 30 V | | $-I_{CBO}$ | - | - | 100 | nA |
| Emitter Base Cutoff Current<br>at $-V_{EB}$ = 5 V | | $-I_{EBO}$ | - | - | 100 | nA |
| Collector Base Breakdown Voltage<br>at $-I_C$ = 100 µA | | $-V_{(BR)CBO}$ | 100 | - | - | V |
| Collector Emitter Breakdown Voltage<br>at $-I_C$ = 10 mA | | $-V_{(BR)CEO}$ | 80 | - | - | V |
| Emitter Base Breakdown Voltage<br>at $-I_E$ = 10 µA | | $-V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Emitter Saturation Voltage<br>at $-I_C$ = 500 mA, $-I_B$ = 50 mA | | $-V_{CE(sat)}$ | - | - | 0.5 | V |
| Base Emitter Voltage<br>at $-V_{CE}$ = 2 V, $-I_C$ = 500 mA | | $-V_{BE(on)}$ | - | - | 1 | V |
| Transition Frequency<br>at $-V_{CE}$ = 10 V, $-I_C$ = 50 mA , f = 100 MHz | | $f_T$ | - | 125 | - | MHz |

## Electrical Characteristics Curves

Fig 1. $P_D$ vs $T_a$

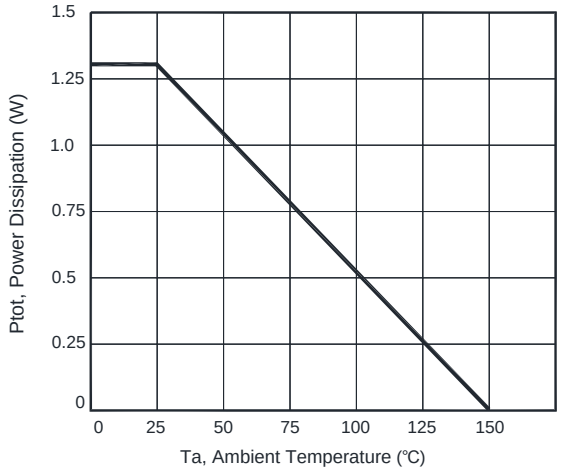
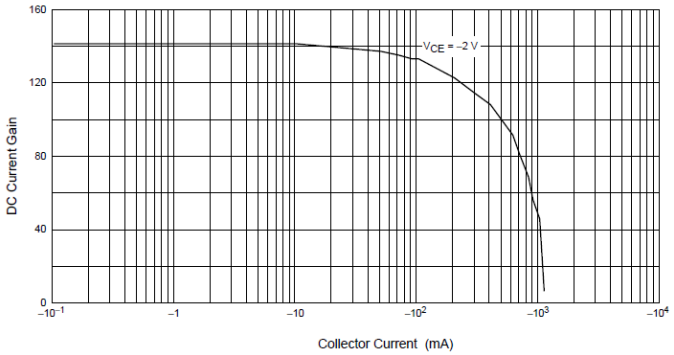



Fig 2. DC Current Gain vs. Collector



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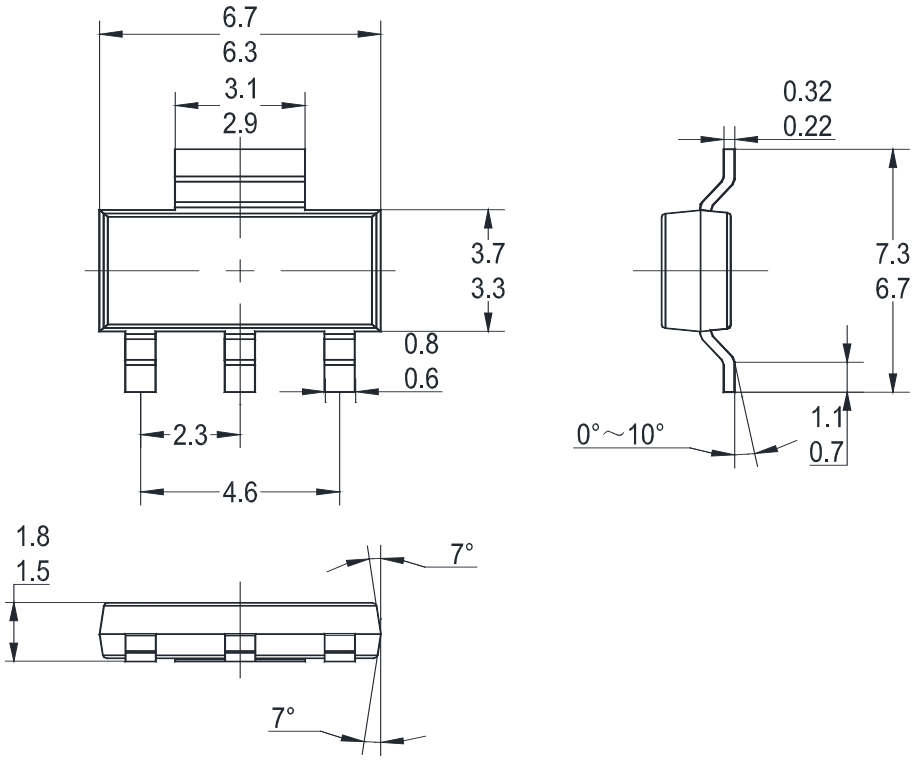
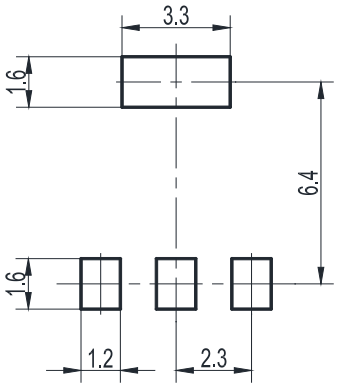
## Package Outline (Dimensions in mm) SOT-223




## Recommended Soldering Footprint




### Packing information

| Package | Tape Width (mm) | Pitch | | Reel Size | | Per Reel Packing Quantity |
|---|---|---|---|---|---|---|
| | | mm | inch | mm | inch | |
| SOT-223 | 12 | 8 ± 0.1 | 0.315 ± 0.004 | 330 | 13 | 3,000 |

### Marking information

" BCP53Q " = Part No.

" ****** " = Date Code Marking

Font type: Arial

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