



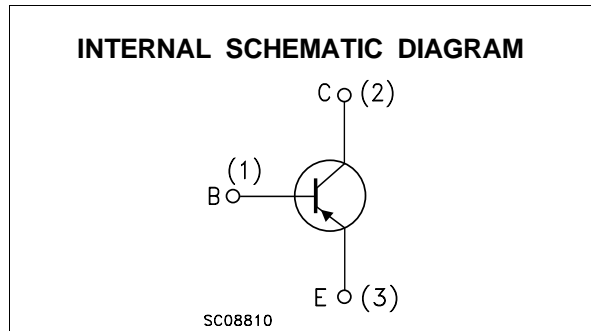
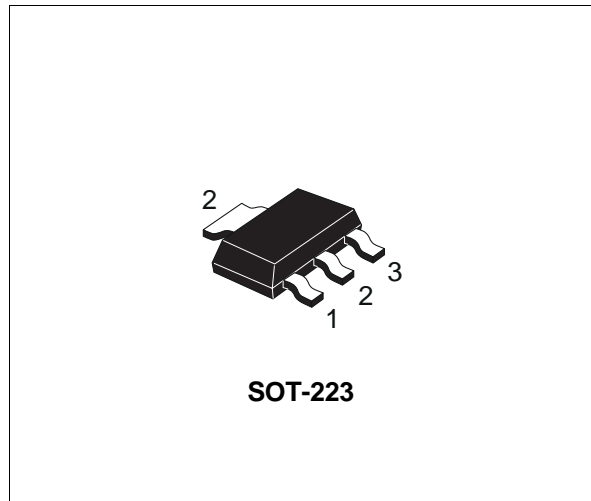
LOW POWER PNP TRANSISTOR

| | |
|----------------------|----------------|
| Ordering Code | Marking |
| BCP53-16 | BCP5316 |

- SILICON EPITAXIAL PLANAR PNP MEDIUM VOLTAGE TRANSISTOR
- SOT-223 PLASTIC PACKAGE FOR SURFACE MOUNTING CIRCUITS
- TAPE AND REEL PACKING
- THE NPN COMPLEMENTARY TYPE IS BCP56-16

APPLICATIONS

- MEDIUM VOLTAGE LOAD SWITCH TRANSISTORS
- OUTPUT STAGE FOR AUDIO AMPLIFIERS CIRCUITS
- AUTOMOTIVE POST-VOLTAGE REGULATION



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|---|------------|------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | -100 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | -80 | V |
| V_{CER} | Collector-Emitter Voltage ($R_{BE} = 1K\Omega$) | -100 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | -5 | V |
| I_C | Collector Current | -1 | A |
| I_{CM} | Collector Peak Current ($t_p < 5$ ms) | -1.5 | A |
| I_B | Base Current | -0.1 | A |
| I_{BM} | Base Peak Current ($t_p <$ ms) | -0.2 | A |
| P_{tot} | Total Dissipation at $T_{amb} = 25$ °C | 1.6 | W |
| T_{stg} | Storage Temperature | -65 to 150 | °C |
| T_j | Max. Operating Junction Temperature | 150 | °C |

THERMAL DATA

| | | | | |
|---------------|-------------------------------------|-----|----|-----------------------------|
| $R_{thj-amb}$ | Thermal Resistance Junction-Ambient | Max | 78 | $^{\circ}\text{C}/\text{W}$ |
|---------------|-------------------------------------|-----|----|-----------------------------|

• Device mounted on a PCB area of 1 cm^2

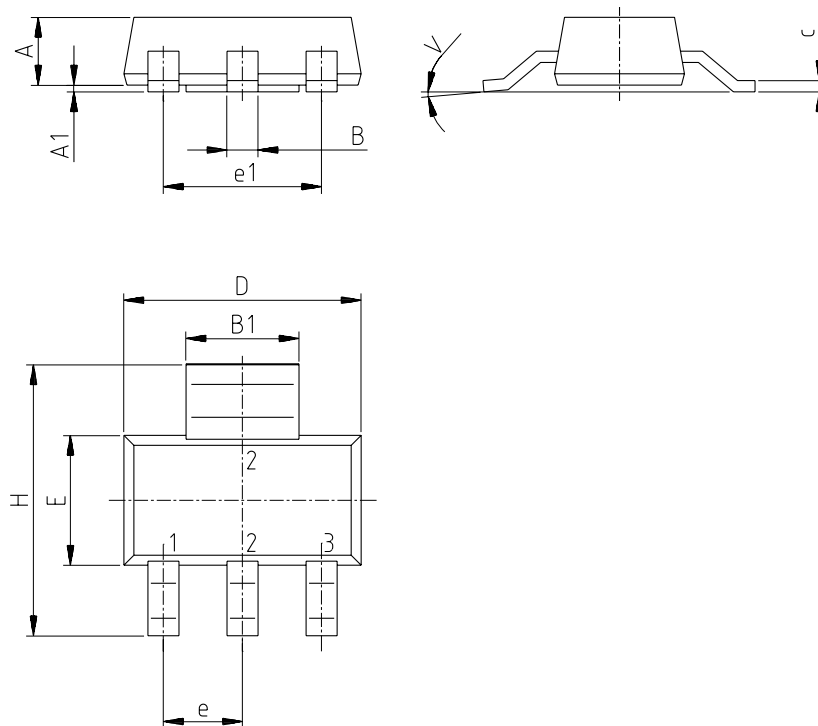
ELECTRICAL CHARACTERISTICS ($T_{case} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------|---|---|-----------------|------|-------------|---------------------|
| I_{CBO} | Collector Cut-off Current ($I_E = 0$) | $V_{CB} = -30\text{ V}$ $V_{CB} = -30\text{ V}$ $T_j = 125\text{ }^{\circ}\text{C}$ | | | -100 -10 | nA μA |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_E = 0$) | $I_C = -100\text{ }\mu\text{A}$ | -100 | | | V |
| $V_{(BR)CEO}^*$ | Collector-Emitter Breakdown Voltage ($I_B = 0$) | $I_C = -20\text{ mA}$ | -80 | | | V |
| $V_{(BR)CER}$ | Collector-Emitter Breakdown Voltage ($R_{BE} = 1\text{ K}\Omega$) | $I_C = -100\text{ }\mu\text{A}$ | -100 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_C = 0$) | $I_E = -10\text{ }\mu\text{A}$ | -5 | | | V |
| $V_{CE(sat)}^*$ | Collector-Emitter Saturation Voltage | $I_C = -500\text{ mA}$ $I_B = -50\text{ mA}$ | | | -0.5 | V |
| $V_{BE(on)}^*$ | Base-Emitter On Voltage | $I_C = -500\text{ mA}$ $V_{CE} = -2\text{ V}$ | | | -1 | V |
| h_{FE}^* | DC Current Gain | $I_C = -5\text{ mA}$ $V_{CE} = -2\text{ V}$ $I_C = -150\text{ mA}$ $V_{CE} = -2\text{ V}$ $I_C = -500\text{ mA}$ $V_{CE} = -2\text{ V}$ | 40 100 25 | | 250 | |
| f_T | Transition Frequency | $I_C = -10\text{ mA}$ $V_{CE} = -5\text{ V}$ $f = 20\text{ MHz}$ | | 50 | | MHz |

* Pulsed: Pulse duration = $300\text{ }\mu\text{s}$, duty cycle $\leq 1.5\%$

SOT-223 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | | 1.80 | | | 0.071 |
| B | 0.60 | 0.70 | 0.80 | 0.024 | 0.027 | 0.031 |
| B1 | 2.90 | 3.00 | 3.10 | 0.114 | 0.118 | 0.122 |
| c | 0.24 | 0.26 | 0.32 | 0.009 | 0.010 | 0.013 |
| D | 6.30 | 6.50 | 6.70 | 0.248 | 0.256 | 0.264 |
| e | | 2.30 | | | 0.090 | |
| e1 | | 4.60 | | | 0.181 | |
| E | 3.30 | 3.50 | 3.70 | 0.130 | 0.138 | 0.146 |
| H | 6.70 | 7.00 | 7.30 | 0.264 | 0.276 | 0.287 |
| V | | | 10° | | | 10° |
| A1 | | 0.02 | | | | |



P008B

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