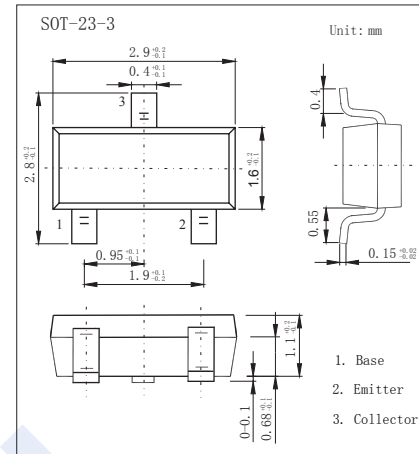


NPN Transistors

2SD814

■ Features

- High collector to emitter voltage V_{CE0} .
- Low noise voltage NV .
- Complimentary to 2SB792

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|------------------|
| Collector - Base Voltage | V_{CB0} | 150 | V |
| Collector - Emitter Voltage | V_{CE0} | 150 | |
| Emitter - Base Voltage | V_{EB0} | 5 | |
| Collector Current - Continuous | I_c | 50 | mA |
| Collector Current - Pulse | I_{cp} | 100 | |
| Collector Power Dissipation | P_C | 200 | mW |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to 150 | |

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|-----|-----|-----|------|
| Collector- base breakdown voltage | V_{CB0} | $I_c = 100 \mu\text{A}, I_E = 0$ | 150 | | | V |
| Collector- emitter breakdown voltage | V_{CE0} | $I_c = 1 \text{mA}, I_B = 0$ | 150 | | | |
| Emitter - base breakdown voltage | V_{EB0} | $I_E = 100 \mu\text{A}, I_C = 0$ | 5 | | | |
| Collector-base cut-off current | I_{CBO} | $V_{CB} = 100 \text{V}, I_E = 0$ | | | 100 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 4 \text{V}, I_C = 0$ | | | 100 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_c = 30 \text{mA}, I_B = 3 \text{mA}$ | | | 1 | V |
| Base - emitter saturation voltage | $V_{BE(sat)}$ | $I_c = 30 \text{mA}, I_B = 3 \text{mA}$ | | | 1.2 | |
| DC current gain | h_{FE} | $V_{CE} = 5 \text{V}, I_c = 10 \text{mA}$ | 90 | | 330 | |
| Noise voltage | NV | $V_{CE} = 10 \text{V}, I_c = 1 \text{mA}, G_v = 80 \text{dB}$ $R_g = 100 \text{k}\Omega, \text{Function} = \text{FLAT}$ | | 150 | | mV |
| Collector output capacitance | C_{ob} | $V_{CB} = 10 \text{V}, I_E = 0, f = 1 \text{MHz}$ | | 2.3 | | pF |
| Transition frequency | f_T | $V_{CE} = 10 \text{V}, I_E = -10 \text{mA}, f = 200 \text{MHz}$ | | 150 | | MHz |

■ Classification of h_{fe}

| Type | 2SD814-Q | 2SD814-R | 2SD814-S |
|---------|----------|----------|----------|
| Range | 90-155 | 130-220 | 185-330 |
| Marking | PQ | PR | PS |

NPN Transistors

2SD814

■ Typical Characteristics

