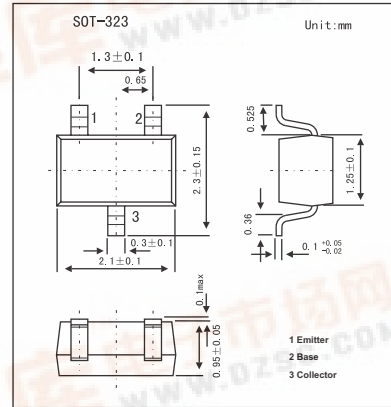


SMD Type Transistors

Silicon NPN Epitaxial
2SC4116

Features

- High voltage and high current: $V_{CE0} = 50\text{ V}$, $I_C = 150\text{ mA}$ (max).
- Excellent hFE linearity: $h_{FE}(I_C = 0.1\text{ mA})/h_{FE}(I_C = 2\text{ mA}) = 0.95$ (typ).
- High hFE: $h_{FE} = 70\sim 700$.
- Low noise: $NF = 1\text{ dB}$ (typ.), 10 dB (max).
- Small package.



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

| Parameter | Symbol | Rating | Unit |
|-----------------------------|-----------|-------------|------------------|
| Collector-base voltage | V_{CB0} | 60 | V |
| Collector-emitter voltage | V_{CE0} | 50 | V |
| Emitter-base voltage | V_{EB0} | 5 | V |
| Collector current | I_C | 150 | mA |
| Base current | I_B | 30 | mA |
| Collector power dissipation | P_C | 100 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|-----|-----|------|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = 60\text{ V}$, $I_E = 0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 5\text{ V}$, $I_C = 0$ | | | 0.1 | μA |
| DC current gain | h_{FE} | $V_{CE} = 6\text{ V}$, $I_C = 2\text{ mA}$ | 70 | | 700 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$ | | 0.1 | 0.25 | V |
| Transition frequency | f_T | $V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$ | 80 | | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$ | | 2.0 | 3.5 | pF |
| Collector-emitter on resistance | NF | $V_{CE} = 6\text{ V}$, $I_C = 0.1\text{ mA}$, $f = 1\text{ kHz}$, $R_g = 10\text{ k}\Omega$ | | 1.0 | 10 | dB |

hFE Classification

| Marking | LO | LY | LG | LL |
|---------|--------|---------|---------|---------|
| hFE | 70~140 | 120~240 | 200~400 | 350~700 |

