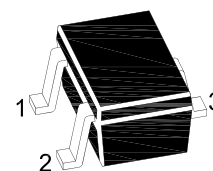
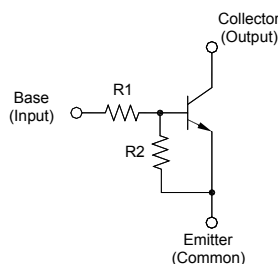


NPN Silicon Epitaxial Planar Digital Transistor

Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

MARKING: 24



1.Base 2.Emitter 3.Collector
SOT-523 Plastic Package

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

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|---------------|------------------|
| Collector Emitter Voltage | V_{CEO} | 50 | V |
| Input Voltage | V_i | - 10 to + 40 | V |
| Collector Current | I_C | 100 | mA |
| Power Dissipation | P_{tot} | 150 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 55 to + 150 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---------------|------|------|------|------------|
| DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 5\text{ mA}$ | h_{FE} | 30 | - | - | - |
| Collector Base Cutoff Current at $V_{CB} = 50\text{ V}$ | I_{CBO} | - | - | 500 | nA |
| Emitter Base Cutoff Current at $V_{EB} = 5\text{ V}$ | I_{EBO} | - | - | 0.88 | mA |
| Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$ | $V_{CE(sat)}$ | - | - | 0.3 | V |
| Input on Voltage at $V_{CE} = 0.3\text{ V}$, $I_C = 10\text{ mA}$ | $V_{I(on)}$ | - | - | 3 | V |
| Input off Voltage at $V_{CE} = 5\text{ V}$, $I_C = 100\text{ }\mu\text{A}$ | $V_{I(off)}$ | 0.5 | - | - | V |
| Transition frequency at $V_{CE} = 10\text{ V}$, $-I_E = 5\text{ mA}$, $f = 100\text{ MHz}$ | f_T | - | 250 | - | MHz |
| Input Resistance | R_1 | 7 | 10 | 13 | K Ω |
| Resistance Ratio | R_2 / R_1 | 0.8 | 1 | 1.2 | - |

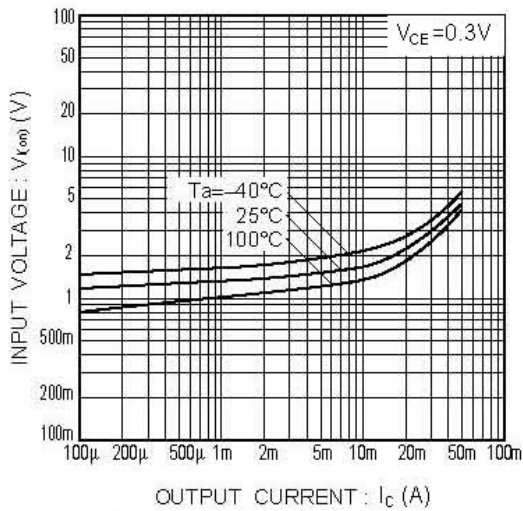


Fig.1 Input voltage vs. output current (ON characteristics)

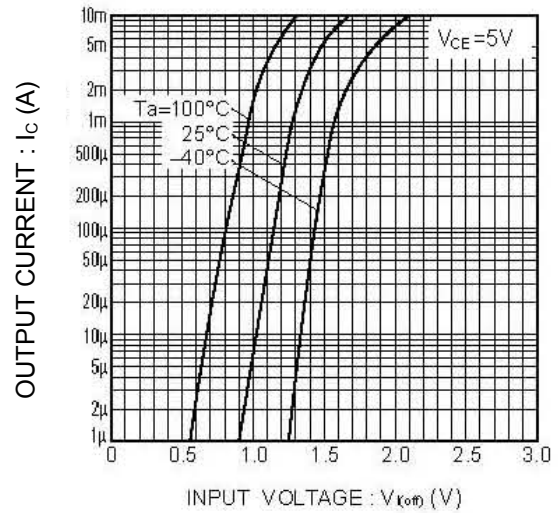


Fig.2 Output current vs. input voltage (OFF characteristics)

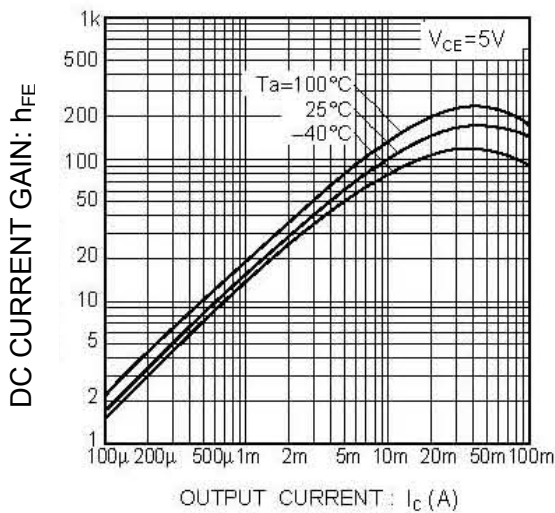


Fig.3 DC current gain vs. output current

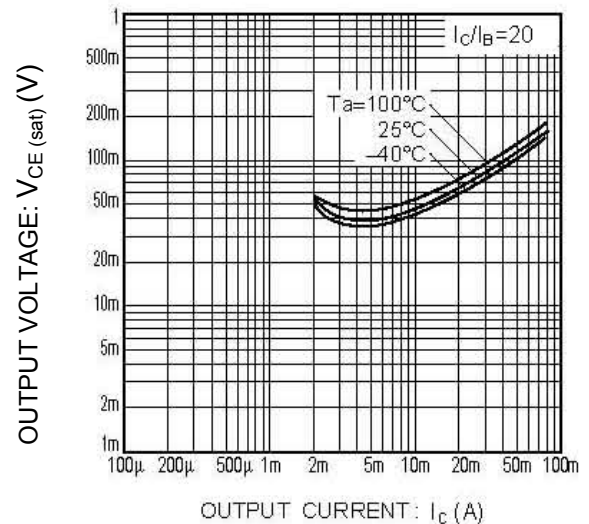


Fig.4 Output voltage vs. output current