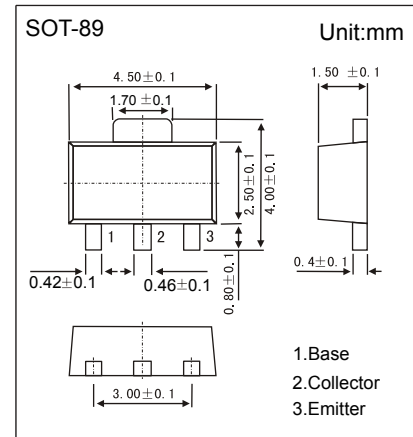


NPN Transistors

2SC4505

■ Features

- Collector Current Capability $I_c=0.1A$
- Collector Emitter Voltage $V_{CE0}=400V$
- Complements to 2SA1759



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

| Parameter | Symbol | Rating | Unit |
|--------------------------------------|-----------|------------|------------|
| Collector - Base Voltage | V_{CBO} | 400 | V |
| Collector - Emitter Voltage | V_{CEO} | 400 | |
| Emitter - Base Voltage | V_{EBO} | 7 | |
| Collector Current - Continuous | I_c | 0.1 | A |
| Collector Current - Pulse (Note.1) | I_{CP} | 0.2 | |
| Collector Power Dissipation (Note.2) | P_c | 0.5 | W |
| | | 2 | |
| Junction Temperature | T_J | 150 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -55 to 150 | |

Note.1:Single pulse, $P_w=20ms$, Duty=1/2

Note.2:When mounted on a $40 \times 40 \times 0.7mm$ ceramic

■ Electrical Characteristics $T_a = 25^\circ C$

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|---------|
| Collector- base breakdown voltage | V_{CBO} | $I_c = 100 \mu A, I_E = 0$ | 400 | | | V |
| Collector- emitter breakdown voltage | V_{CEO} | $I_c = 1 mA, I_B = 0$ | 400 | | | |
| Emitter - base breakdown voltage | V_{EBO} | $I_E = 100 \mu A, I_c = 0$ | 7 | | | |
| Collector-base cut-off current | I_{CBO} | $V_{CB} = 400 V, I_E = 0$ | | | 10 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 6 V, I_c = 0$ | | | 1 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_c = 10 mA, I_B = 1 mA$ | | | 0.5 | V |
| Base - emitter saturation voltage | $V_{BE(sat)}$ | $I_c = 10 mA, I_B = 1 mA$ | | | 1.5 | |
| DC current gain | h_{FE} | $V_{CE} = 10 V, I_c = 10 mA$ | 82 | | 270 | |
| Turn-on time | t_{on} | $I_c = -100 mA, R_L = 1.5 k\Omega$ | | 1 | | μs |
| Storage time | t_{stg} | $I_{B1} = -I_{B2} = 10 mA$ | | 5.5 | | |
| Fall time | t_f | $V_{CC} = 150 V$ | | 1.7 | | |
| Collector output capacitance | C_{ob} | $V_{CB} = 10 V, I_E = 0, f = 1 MHz$ | | 7 | | pF |
| Transition frequency | f_T | $V_{CE} = 10 V, I_E = -10 mA, f = 10 MHz$ | | 20 | | MHz |

■ Classification of h_{fe}

| Type | 2SC4505-P | 2SC4505-Q |
|---------|-----------|-----------|
| Range | 82-180 | 120-270 |
| Marking | CEP | CEQ |

NPN Transistors 2SC4505

Typical Characteristics

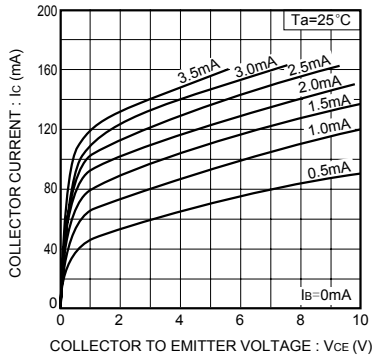


Fig.1 Ground emitter output characteristics

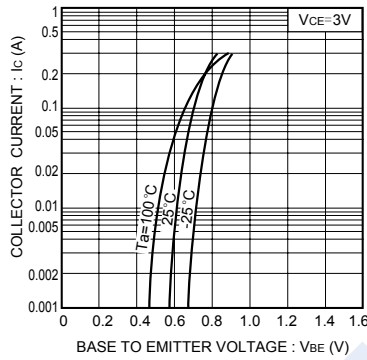


Fig.2 Ground emitter propagation characteristics

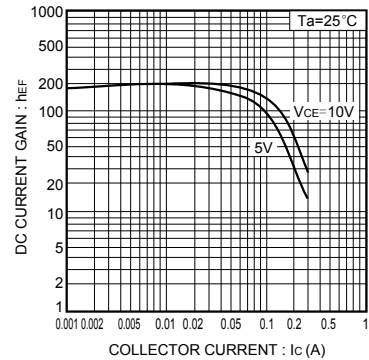


Fig.3 DC current gain vs. collector current (I)

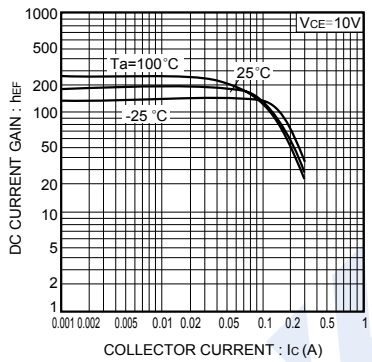


Fig.4 DC current gain vs. collector current (II)

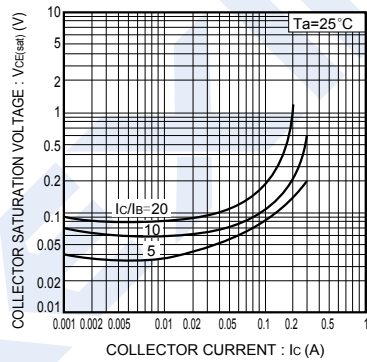


Fig.5 Collector-emitter saturation voltage vs. collector current

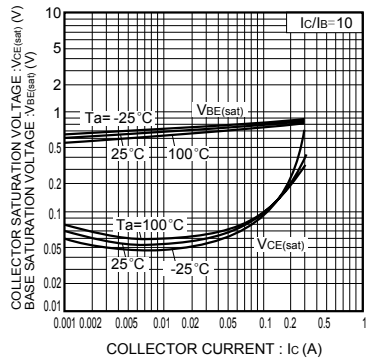


Fig.6 Collector-emitter saturation voltage vs. collector current
Collector-base saturation voltage vs. collector current

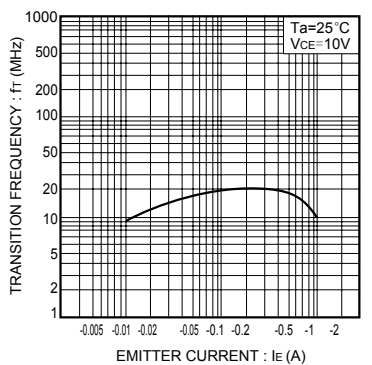


Fig.7 Gain bandwidth product vs. emitter current

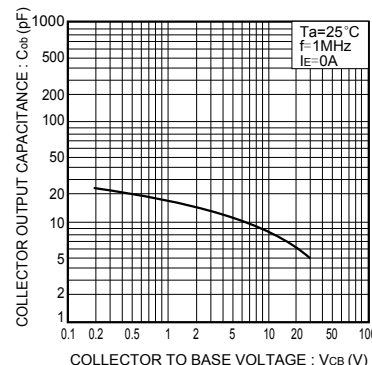


Fig.8 Collector output capacitance vs. collector-base voltage

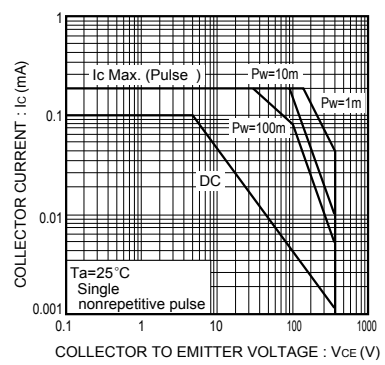


Fig.9 Safe operating area