

NPN Transistors

2SD2403

■ Features

- High current capacitance
- Low collector saturation voltage
- Complementary to 2SB1572

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

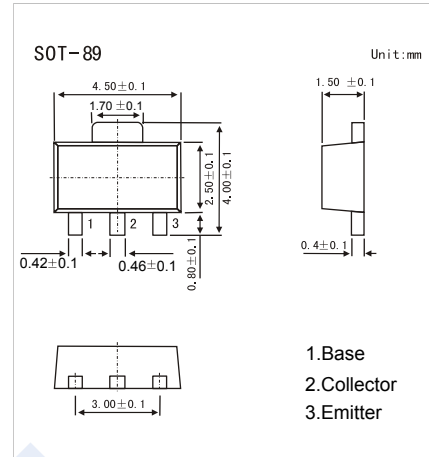
| Parameter | Symbol | Rating | Unit |
|--------------------------------|-----------|------------|------------------|
| Collector - Base Voltage | V_{CB0} | 80 | V |
| Collector - Emitter Voltage | V_{CE0} | 60 | |
| Emitter - Base Voltage | V_{EB0} | 6 | |
| Collector Current - Continuous | I_C | 3 | A |
| Collector Current - Pulse | I_{CP} | 5 | |
| Collector Power Dissipation | P_C | 2 | W |
| 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} | $I_C = 100\ \mu\text{A}$, $I_E = 0$ | 80 | | | V |
| Collector- emitter breakdown voltage | V_{CE0} | $I_C = 1\ \text{mA}$, $I_B = 0$ | 60 | | | |
| Emitter - base breakdown voltage | V_{EB0} | $I_E = 100\ \mu\text{A}$, $I_C = 0$ | 6 | | | |
| Collector-base cut-off current | I_{CBO} | $V_{CB} = 80\ \text{V}$, $I_E = 0$ | | | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = 6\ \text{V}$, $I_C = 0$ | | | 0.1 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 2\ \text{A}$, $I_B = 100\ \text{mA}$ | | 0.15 | 0.3 | V |
| | | $I_C = 3\ \text{A}$, $I_B = 150\ \text{mA}$ | | 0.21 | 0.5 | |
| Base - emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 2\ \text{A}$, $I_B = 100\ \text{mA}$ | | 0.89 | 1.2 | |
| Base - emitter voltage | V_{BE} | $V_{CE} = 2\ \text{V}$, $I_C = 100\ \text{mA}$ | 0.6 | | 0.7 | |
| DC current gain | h_{FE} | $V_{CE} = 2\ \text{V}$, $I_C = 100\ \text{mA}$ | 80 | | | |
| | | $V_{CE} = 2\ \text{V}$, $I_C = 1\ \text{A}$ | 100 | | 400 | |
| Turn-on time | t_{on} | $I_C = 1\ \text{A}$, $V_{CC} = 10\ \text{V}$ | | 150 | | ns |
| Storage time | t_{stg} | $I_{B1} = -I_{B2} = 0.1\ \text{A}$ | | 652 | | |
| Fall time | t_f | $R_L = 5\ \Omega$ | | 40 | | |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\ \text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$ | | 30 | | pF |
| Transition frequency | f_T | $V_{CE} = 10\ \text{V}$, $I_E = -300\ \text{mA}$ | | 130 | | MHz |

■ Classification of $h_{FE}(2)$

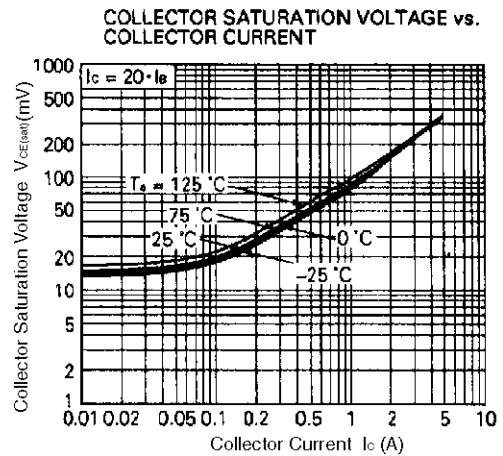
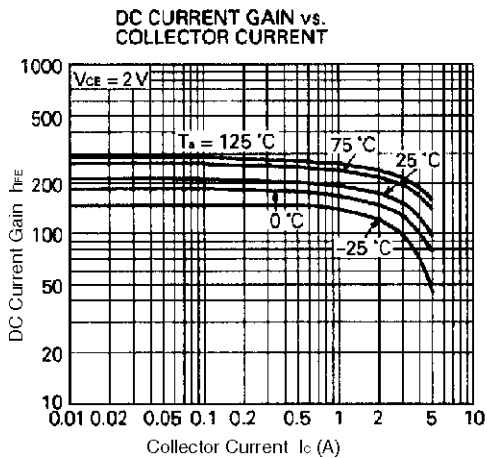
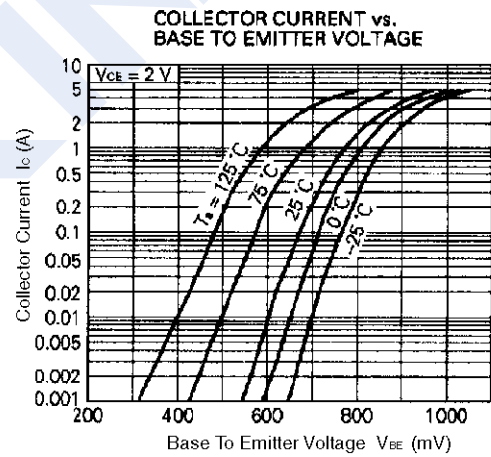
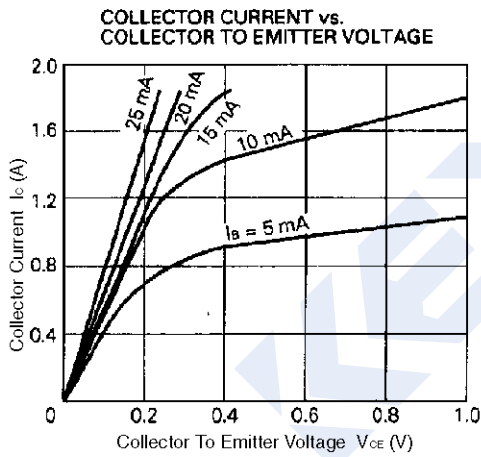
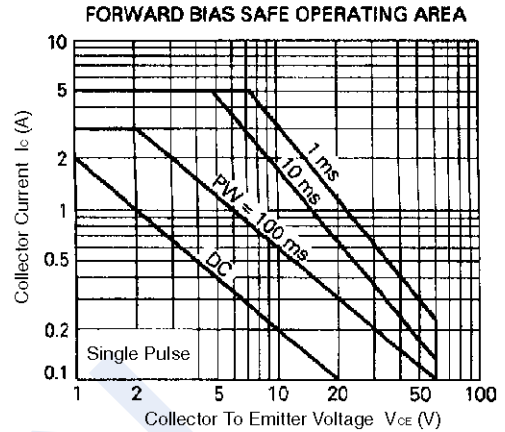
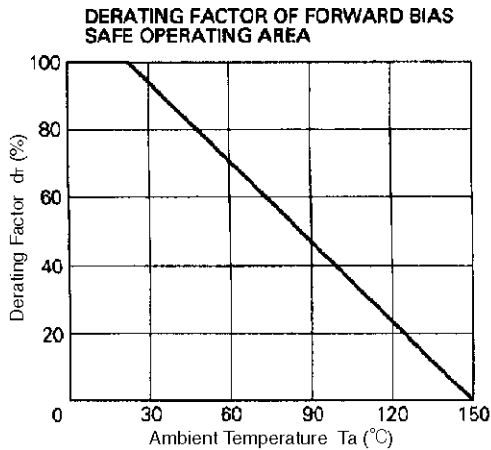
| Type | 2SD2403-X | 2SD2403-Y | 2SD2403-Z |
|---------|-----------|-----------|-----------|
| Range | 100-200 | 160-320 | 200-400 |
| Marking | GX | GY | GZ |



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■ Typical Characteristics



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