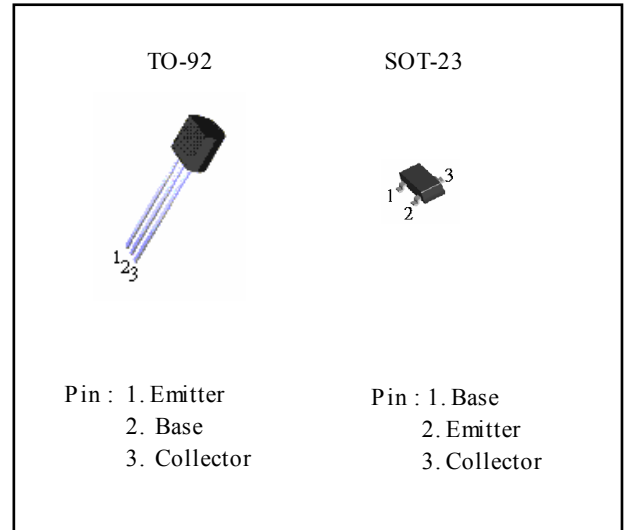


NPN Epitaxial Silicon Transistor**GENERAL PURPOSE TRANSISTOR**

- Collector-Emitter Voltage: $V_{CE0} = 40V$
- Collector Dissipation: $P_{C (max)} = 625 mW$

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

| Rating | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------------|
| Collector-Base Voltage | V_{CBO} | 60 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 200 | mA |
| Collector Dissipation | P_C | 625 | mW |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -55~150 | $^\circ C$ |

**ORDERING INFORMATION**

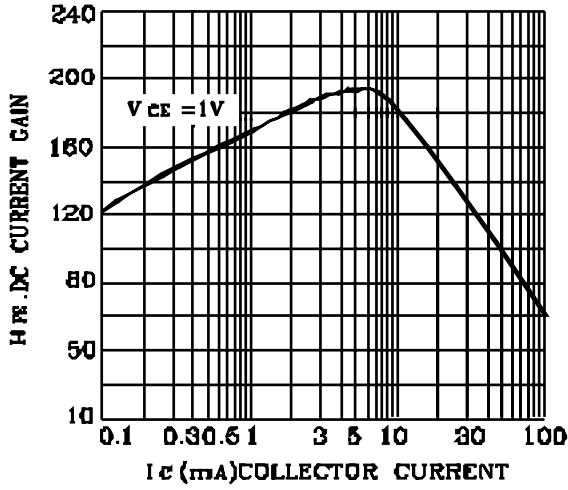
| Device | Operating Temperature | Package |
|------------|---------------------------------|---------|
| PJ2N3904CT | -20 $^\circ C$ ~ +85 $^\circ C$ | TO-92 |
| PJ2N3904CX | | SOT-23 |

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

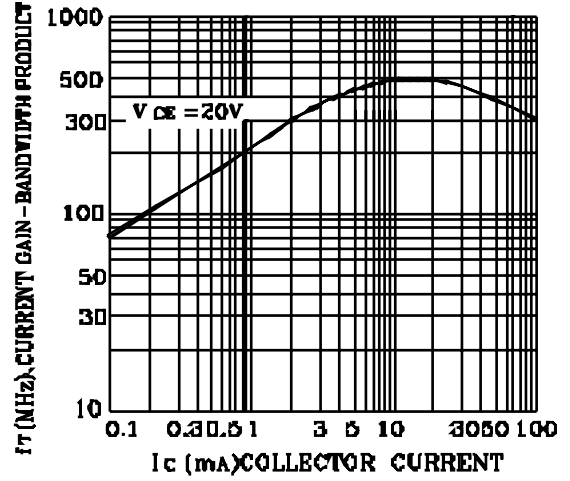
| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------------------|---------------|--------------------------------------------------------|------|-----|------|------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = 10 \mu A, I_E = 0$ | 60 | | | V |
| *Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = 1mA, I_B = 0$ | 40 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = 10 \mu A, I_C = 0$ | 6 | | | V |
| Collector Cut-off Current | I_{CEX} | $V_{CE} = 30V, V_{BE} = 3V$ | | | 50 | nA |
| Base Cut-off Current | I_{BL} | $V_{CE} = 30V, V_{BE} = 3V$ | | | 50 | nA |
| *DC Current Gain | h_{FE} | $I_C = 0.1mA, V_{CE} = 1V$ | 40 | | | |
| | | $I_C = 1mA, V_{CE} = 1V$ | 70 | | | |
| | | $I_C = 10mA; V_{CE} = 1V$ | 100 | | 300 | |
| | | $I_C = 50mA, V_{CE} = 1V$ | 60 | | | |
| | | $I_C = 100mA, V_{CE} = 1V$ | 30 | | | |
| *Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10mA, I_B = 1mA$ | | | 0.2 | V |
| | | $I_C = 50mA, I_B = 5mA$ | | | 0.3 | V |
| *Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 10mA, I_B = 1mA$ | 0.65 | | 0.85 | V |
| | | $I_C = 50mA, I_B = 5mA$ | | | 0.95 | V |
| Output Capacitance | C_{ob} | $V_{CB} = 5V, I_E = 0$ | | | 4 | pF |
| Current Gain Bandwidth Product | f_T | $f = 1MHz$ $I_C = 10mA, V_{CE} = 20V$ | 300 | | | MHz |
| Turn On Time | t_{on} | $f = 100MHz$ $V_{CC} = 3V, V_{BE} = 0.5V$ | | | 70 | ns |
| Turn Off Time | t_{off} | $I_C = 10mA, I_{B1} = 1mA$ $V_{CC} = 3V, I_C = 1mA$ | | | 250 | ns |
| | | $I_{B1} = I_{B2} = 1mA$ | | | | |

*Pulse Test: Pulse Width $\leq 300 \mu s$. Duty Cycle $\leq 2\%$

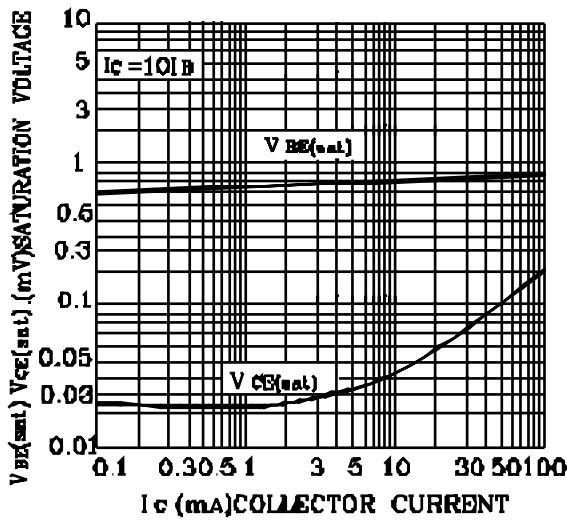
DC CURRENT GAIN



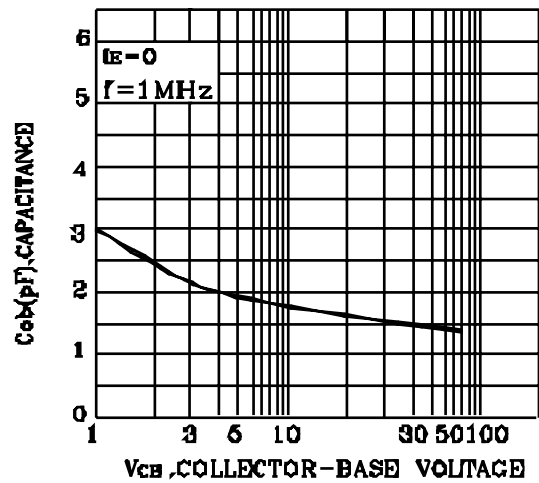
CURRENT GAIN-BANDWIDTH PRODUCT



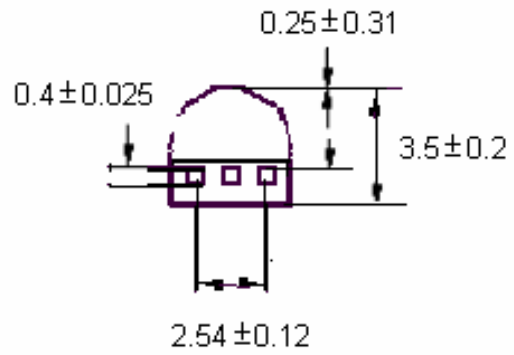
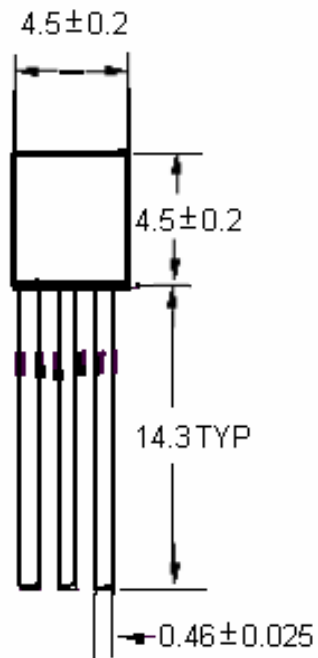
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE



TO-92 Unit:mm



SOT-23 Unit:mm

