

2SA1020

TO-92L Transistor (PNP)

TO-92L



1. EMITTER
2. COLLECTOR
3. BASE

Features

Power amplifier applications

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

| Symbol | Parameter | Value | Units |
|-----------|-------------------------------|---------|------------------|
| V_{CBO} | Collector-Base Voltage | -50 | V |
| V_{CEO} | Collector-Emitter Voltage | -50 | V |
| V_{EBO} | Emitter-Base Voltage | -5 | V |
| I_C | Collector Current –Continuous | -2 | A |
| P_C | Collector Power Dissipation | 900 | mW |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55-150 | $^\circ\text{C}$ |

Dimensions in inches and (millimeters)

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|-----|------|---------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C = -100\mu\text{A}, I_E = 0$ | -50 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = -10\text{mA}, I_B = 0$ | -50 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E = -100\mu\text{A}, I_C = 0$ | -5 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB} = -50\text{V}, I_E = 0$ | | | -1 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5\text{V}, I_C = 0$ | | | -1 | μA |
| DC current gain | $h_{FE(1)}$ | $V_{CE} = -2\text{V}, I_C = -0.5\text{A}$ | 70 | | 240 | |
| | $h_{FE(2)}$ | $V_{CE} = -2\text{V}, I_C = -1.5\text{A}$ | 40 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -1\text{A}, I_B = -50\text{mA}$ | | | -0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = -1\text{A}, I_B = -50\text{mA}$ | | | -1.2 | V |
| Transition frequency | f_T | $V_{CE} = -2\text{V}, I_C = -500\text{mA}$ | | 100 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$ | | 40 | | pF |
| Turn-on time | t_{on} | $V_{CC} = -30\text{V}, I_{B1} = -I_{B2} = -0.05\text{A}, I_C = -1\text{A}$ | | 0.1 | | μs |
| Storage time | t_s | | | 1 | | μs |
| Fall time | t_f | | | 0.1 | | μs |

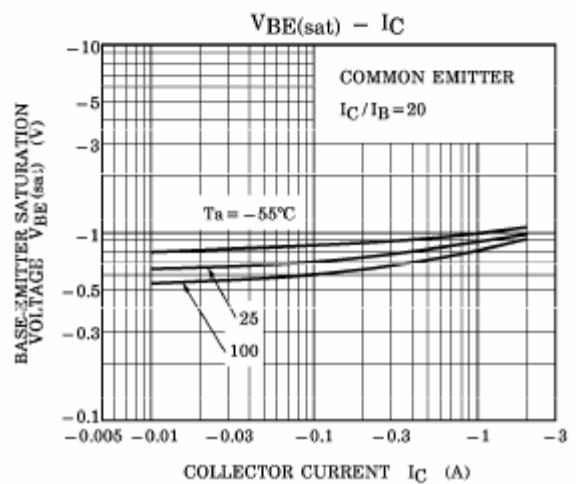
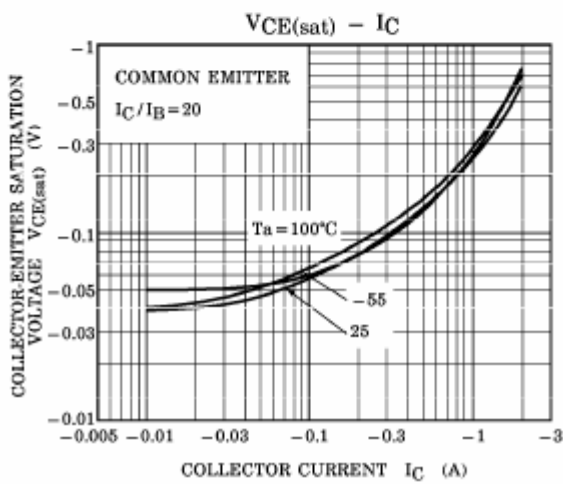
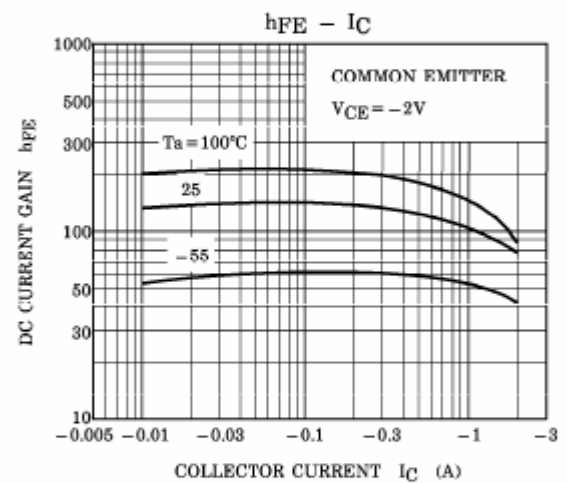
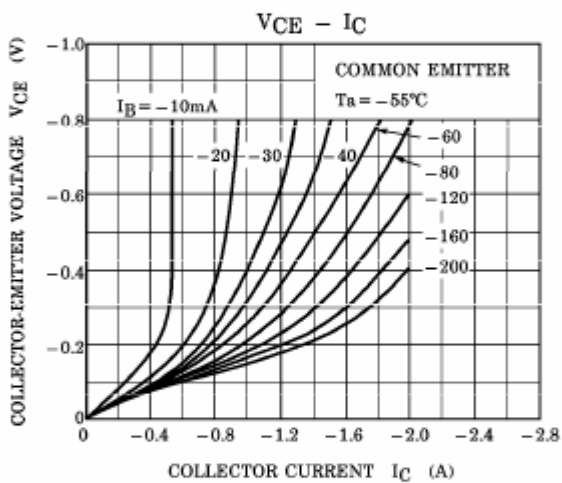
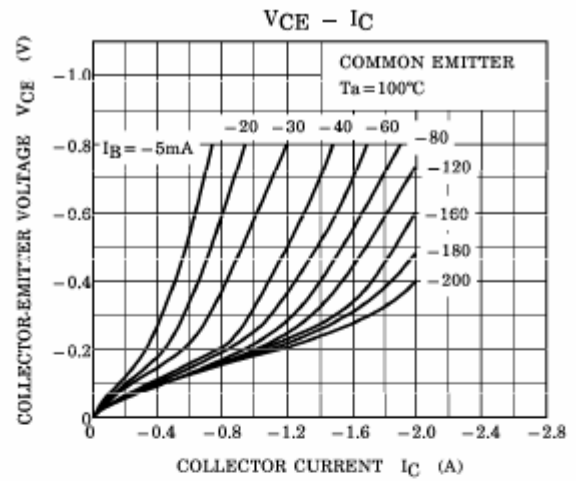
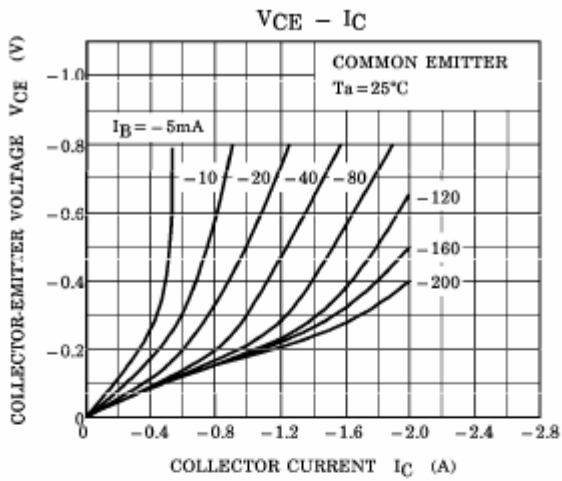
CLASSIFICATION OF $h_{FE(1)}$

| Rank | O | Y |
|-------|--------|---------|
| Range | 70-140 | 120-240 |

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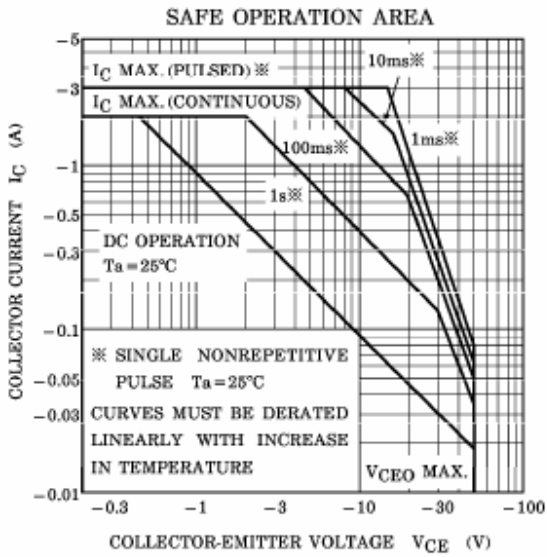
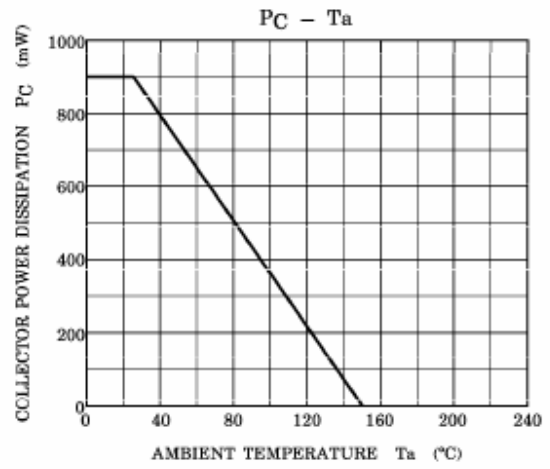
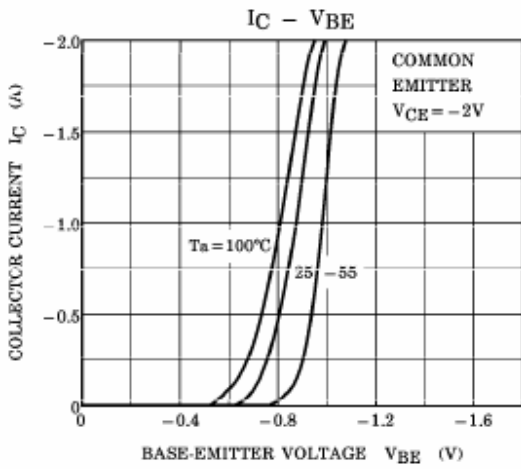
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Typical Characteristics



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