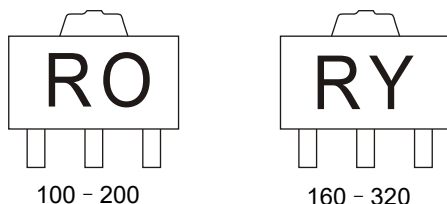


### 2SA1204 TRANSISTOR (PNP)

#### FEATURES

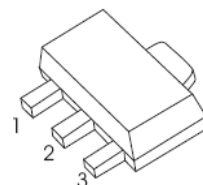
- Complementary to 2SC2884
- Small Flat Package
- Audio Frequency Amplifier Application
- High DC Current Gain

#### MARKING



#### SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



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

| Symbol          | Parameter                                        | Value    | Unit               |
|-----------------|--------------------------------------------------|----------|--------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | -35      | V                  |
| $V_{CEO}$       | Collector-Emitter Voltage                        | -30      | V                  |
| $V_{EBO}$       | Emitter-Base Voltage                             | -5       | V                  |
| $I_C$           | Collector Current                                | -0.8     | A                  |
| $P_C$           | Collector Power Dissipation                      | 500      | mW                 |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 250      | $^\circ\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | $^\circ\text{C}$   |

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

| Parameter                            | Symbol        | Test conditions                                  | Min  | Typ | Max  | Unit |
|--------------------------------------|---------------|--------------------------------------------------|------|-----|------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C = -0.1\text{mA}, I_E = 0$                   | -35  |     |      | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C = -10\text{mA}, I_B = 0$                    | -30  |     |      | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E = -0.1\text{mA}, I_C = 0$                   | -5   |     |      | V    |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB} = -35\text{V}, I_E = 0$                  |      |     | -100 | nA   |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB} = -5\text{V}, I_C = 0$                   |      |     | -100 | nA   |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE} = -1\text{V}, I_C = -100\text{mA}$       | 100  |     | 320  |      |
|                                      | $h_{FE(2)}$   | $V_{CE} = -1\text{V}, I_C = -700\text{mA}$       | 35   |     |      |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -500\text{mA}, I_B = -20\text{mA}$        |      |     | -0.7 | V    |
| Base-emitter voltage                 | $V_{BE}$      | $V_{CE} = -1\text{V}, I_C = -10\text{mA}$        | -0.5 |     | -0.8 | V    |
| Collector output capacitance         | $C_{ob}$      | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$ |      | 19  |      | pF   |
| Transition frequency                 | $f_T$         | $V_{CE} = -5\text{V}, I_C = -10\text{mA}$        |      | 120 |      | MHz  |

#### CLASSIFICATION OF $h_{FE(1)}$

| RANK    | O         | Y         |
|---------|-----------|-----------|
| RANGE   | 100 - 200 | 160 - 320 |
| MARKING | RO        | RY        |

### PNP SILICON TRANSISTOR

#### TYPICAL CHARACTERISTICS

