

2N869 (SILICON)
2N995



CASE 22
 (TO-18)

Collector connected to case

PNP silicon annular transistors for high-frequency general-purpose amplifier applications.

MAXIMUM RATINGS

| Rating | Symbol | Types | Value | Unit |
|--|-----------|----------------|---------------------|------------------------|
| Base Voltage | V_{CB} | 2N869 2N995 | 25 20 | Vdc |
| Collector-Emitter Voltage | V_{CEO} | 2N869 2N995 | 18 15 | Vdc |
| Emitter-Base Voltage | V_{EB} | 2N869 2N995 | 5.0 4.0 | Vdc |
| Total Device Dissipation at 25°C Case Temperature at 100°C Case Temperature Derate above 25°C | P_D | Both Types | 1.2 0.68 6.86 | Watts Watt mW/°C |
| Total Device Dissipation at 25°C Ambient Temperature Derate above 25°C | P_D | Both Types | 0.36 2.06 | Watt mW/°C |
| Storage Temperature | T_{stg} | Both Types | -65 to +200 | °C |
| Junction Temperature | T_J | Both Types | +200 | °C |

2N869, 2N995 (continued)
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|-----------------|----------------------|-------------|------------------|------------------|
| Collector-Base Breakdown Voltage ($I_C = 10 \mu\text{A dc}$, $I_E = 0$) 2N869 2N995 | V_{CB0} | 25 20 | --- | --- | Vdc |
| Collector-Emitter Sustaining Voltage ⁽¹⁾ ($I_C = 10 \text{ mA dc}$, $I_B = 0$) 2N869 2N995 | $V_{CEO(sust)}$ | 18 15 | --- | --- | Vdc |
| Emitter-Base Breakdown Voltage ($I_E = 10 \mu\text{A dc}$, $I_C = 0$) 2N869 2N995 | V_{EBO} | 5.0 4.0 | --- | --- | Vdc |
| Collector Cutoff Current ($V_{CB} = 15 \text{ Vdc}$, $I_E = 0$) 2N869 2N995 ($V_{CB} = 15 \text{ Vdc}$, $I_E = 0$, $T_A = 150^\circ\text{C}$) Both Types | I_{CBO} | --- | --- | 010 005 25 | $\mu\text{A dc}$ |
| Emitter Current ($V_{EB} = 4.0 \text{ Vdc}$, $I_C = 0$) 2N995 | I_{EBO} | --- | --- | 10 | $\mu\text{A dc}$ |
| Collector Saturation Voltage ($I_C = 10 \text{ mA dc}$, $I_B = 1.0 \text{ mA dc}$) 2N869 ($I_C = 20 \text{ mA dc}$, $I_B = 2.0 \text{ mA dc}$) 2N995 | $V_{CE(sat)}$ | --- | 0.17 --- | 1.0 0.2 | Vdc |
| Base Saturation Voltage ($I_C = 10 \text{ mA dc}$, $I_B = 1.0 \text{ mA dc}$) 2N869 ($I_C = 20 \text{ mA dc}$, $I_B = 2.0 \text{ mA dc}$) 2N995 | $V_{BE(sat)}$ | --- | 0.78 --- | 1.0 0.95 | Vdc |
| DC Forward-Current Transfer Ratio ⁽¹⁾ ($I_C = 10 \text{ mA dc}$, $V_{CE} = 5.0 \text{ Vdc}$) 2N869 ($I_C = 1.0 \text{ mA dc}$, $V_{CE} = 1.0 \text{ Vdc}$) 2N995 ($I_C = 20 \text{ mA dc}$, $V_{CE} = 1.0 \text{ Vdc}$) 2N995 ($I_C = 50 \text{ mA dc}$, $V_{CE} = 1.0 \text{ Vdc}$) 2N995 | h_{FE} | 20 25 35 25 | --- | 120 --- | --- |
| Open-Circuit Output Capacitance ($V_{CB} = 10 \text{ V}$, $I_E = 0$) 2N869 2N995 | C_{ob} | --- | 3.0 3.0 | 9 10 | pF |
| Open-Circuit Input Capacitance ($V_{BE} = 0.5 \text{ V}$, $I_C = 0$) Both Types | C_{ib} | --- | 7.0 | 11 | pF |
| Small-Signal Forward-Current Transfer Ratio ($I_C = 10 \text{ mA}$, $V_{CE} = 15 \text{ V}$, $f = 100 \text{ MHz}$) 2N869 ($I_C = 10 \text{ mA}$, $V_{CE} = 10 \text{ V}$, $f = 100 \text{ MHz}$) 2N995 | h_{fe} | 1.0 1.0 | 3.0 3.0 | --- | --- |

⁽¹⁾ Pulse Note: Pulse Width = 300 μs , Duty Cycle = 1%