

## 2N3703



# **PNP General Purpose Amplifier**

This device is designed for use as general purpose amplifiers and switches requiring collector currents to 300 mA. Sourced from Process 68. See PN200 for characteristics.

## **Absolute Maximum Ratings\***

TA = 25°C unless otherwise noted

| Symbol                            | Parameter  | Value       | Units |
|-----------------------------------|--|-------------|-------|
| $V_{CEO}$                         | Collector-Emitter Voltage                        | 30          | V     |
| V <sub>CBO</sub>                  | Collector-Base Voltage                           | 50          | V     |
| V <sub>EBO</sub>                  | Emitter-Base Voltage                             | 5.0         | V     |
| Ic                                | Collector Current - Continuous                   | 500         | mA    |
| T <sub>J</sub> , T <sub>stg</sub> | Operating and Storage Junction Temperature Range | -55 to +150 | °C    |

<sup>\*</sup>These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

1) These ratings are based on a maximum junction temperature of 150 degrees C.

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### **Thermal Characteristics**

TA = 25°C unless otherwise noted

| Symbol           | Characteristic                             | Max        | Units       |  |
|------------------|--|------------|-------------|--|
|                  |  | 2N3703     |             |  |
| P <sub>D</sub>   | Total Device Dissipation Derate above 25°C | 625<br>5.0 | mW<br>mW/°C |  |
| R <sub>θJC</sub> | Thermal Resistance, Junction to Case       | 83.3       | °C/W        |  |
| $R_{\theta JA}$  | Thermal Resistance, Junction to Ambient    | 200        | °C/W        |  |

# PNP General Purpose Amplifier (continued)

12

MHz

100

| Symbol               | Parameter                            | Test Conditions                                  | Min | Max  | Units |
|----------------------|--------------------------------------|--|-----|------|-------|
|                      |                                      |  |     |      |       |
| OFF CHA              | RACTERISTICS                         |  |     |      |       |
| $V_{(BR)CEO}$        | Collector-Emitter Breakdown Voltage* | $I_C = 10 \text{ mA}, I_B = 0$                   | 30  |      | V     |
| V <sub>(BR)CBO</sub> | Collector-Base Breakdown Voltage     | $I_C = 100  \mu A,  I_E = 0$                     | 50  |      | V     |
| $V_{(BR)EBO}$        | Emitter-Base Breakdown Voltage       | $I_E = 100  \mu A,  I_C = 0$                     | 5.0 |      | V     |
| I <sub>CBO</sub>     | Collector Cutoff Current             | $V_{CB} = 20 \text{ V}, I_E = 0$                 |     | 100  | nA    |
| I <sub>EBO</sub>     | Emitter Cutoff Current               | $V_{EB} = 3.0 \text{ V}, I_{C} = 0$              |     | 100  | nA    |
| ON CHAF              | RACTERISTICS*                        | $V_{CF} = 5.0 \text{ V, } I_{C} = 50 \text{ mA}$ | 30  | 150  | 1     |
| ) <sub>FE</sub>      |                                      |  |     |      |       |
| N <sub>FE</sub>      | Collector-Emitter Saturation Voltage | $I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$      |     | 0.25 | V     |

 $V_{CB} = 10 \text{ V}, f = 1.0 \text{ MHz}$ 

 $I_C = 50 \text{ mA}, V_{CE} = 5.0 \text{ V},$ f = 20 MHz

Output Capacitance

Current Gain - Bandwidth Product

 $C_{ob}$ 

<sup>\*</sup>Pulse Test: Pulse Width  $\leq$  300  $\mu$ s, Duty Cycle  $\leq$  2.0%