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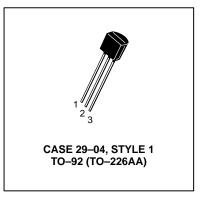


# **Amplifier Transistor** PNP Silicon

### **MPS4126**

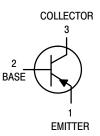
#### **MAXIMUM RATINGS**

| Rating   | Symbol                            | Value       | Unit        |
|--|-----------------------------------|-------------|-------------|
| Collector–Emitter Voltage  | VCE                               | -25         | Vdc         |
| Collector-Base Voltage   | VCB                               | -25         | Vdc         |
| Emitter-Base Voltage   | VEB                               | -4.0        | Vdc         |
| Collector Current — Continuous                                       | IC                                | -200        | mAdc        |
| Total Power Dissipation @ T <sub>A</sub> = 25°C<br>Derate above 25°C | PD                                | 625<br>5.0  | mW<br>mW/°C |
| Total Power Dissipation @ T <sub>C</sub> = 25°C<br>Derate above 25°C | PD                                | 1.5<br>12   | W<br>mW/°C  |
| Operating and Storage Junction Temperature Range                     | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150 | °C          |



#### THERMAL CHARACTERISTICS

| Characteristic                          | Symbol          | Max  | Unit |  |
|---|-----------------|------|------|--|
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 200  | °C/W |  |
| Thermal Resistance, Junction to Case    | $R_{\theta JC}$ | 83.3 | °C/W |  |



#### **ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise noted)

| Characteristic   | Symbol   | Min  | Max | Unit |  |
|--|----------|------|-----|------|--|
| OFF CHARACTERISTICS  |          |      |     |      |  |
| Collector–Emitter Breakdown Voltage (I <sub>C</sub> = -1.0 mA, I <sub>B</sub> = 0) | V(BR)CEO | -25  | _   | Vdc  |  |
| Collector–Base Breakdown Voltage ( $I_C = -10 \mu A, I_E = 0$ )                    | V(BR)CBO | -25  | _   | Vdc  |  |
| Emitter–Base Breakdown Voltage ( $I_C = 0$ , $I_E = -10 \mu A$ )                   | V(BR)EBO | -4.0 | _   | Vdc  |  |
| Collector Cutoff Current (V <sub>CB</sub> = -20 V, I <sub>E</sub> = 0)             | ICBO     | _    | -50 | nAdc |  |
| Emitter Cutoff Current $(V_{EB} = -3.0 \text{ V}, I_{C} = 0)$                      | IEBO     | _    | -50 | nAdc |  |

#### **MPS4126**

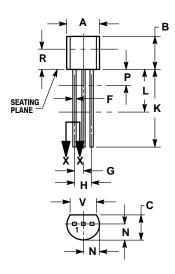
#### **ELECTRICAL CHARACTERISTICS** ( $T_A = 25^{\circ}C$ unless otherwise noted) (Continued)

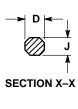
| Characteristic   | Symbol                | Min       | Max      | Unit |
|--|-----------------------|-----------|----------|------|
| ON CHARACTERISTICS   | · ·                   |           |          |      |
| DC Current Gain $(I_C = -2.0 \text{ mA}, V_{CE} = -1.0 \text{ V})$ $(I_C = -50 \text{ mA}, V_{CE} = -1.0 \text{ V})$ | hFE                   | 120<br>60 | 360<br>— | _    |
| Collector–Emitter Saturation Voltage ( $I_C = -50 \text{ mA}$ , $I_B = -5.0 \text{ mA}$ )                            | VCE(sat)              | _         | -0.4     | Vdc  |
| Base–Emitter Saturation Voltage ( $I_C = -50 \text{ mA}$ , $I_B = -5.0 \text{ mA}$ )                                 | V <sub>BE</sub> (sat) | _         | -0.95    | Vdc  |
| SMALL-SIGNAL CHARACTERISTICS   |                       |           | •        |      |
| Current–Gain — Bandwidth Product<br>$(I_C = -10 \text{ mA}, V_{CE} = -20 \text{ V}, f = 100 \text{ MHz})$            | fŢ                    | 170       | _        | MHz  |
| Output Capacitance<br>(V <sub>CB</sub> = -5.0 V, I <sub>E</sub> = 0, f = 1.0 MHz)                                    | C <sub>ob</sub>       | _         | 4.5      | pF   |
| Input Capacitance ( $V_{EB} = -0.5 \text{ V}$ , $I_{C} = 0$ , $f = 1.0 \text{ MHz}$ )                                | C <sub>ib</sub>       | _         | 11.5     | pF   |
| Small–Signal Current Gain (I <sub>C</sub> = -2.0 mA, V <sub>CE</sub> = 1.0 V, f = 1.0 kHz)                           | h <sub>fe</sub>       | 120       | 480      | _    |
| Noise Figure (IC = $-100~\mu\text{A}$ , VCE = $-5.0~\text{V}$ , RS = $1.0~\text{k}\Omega$ , f = $1.0~\text{kHz}$ )   | NF                    | _         | 4.0      | dB   |

#### **MPS4126**

#### **PACKAGE DIMENSIONS**

### CASE 029-04 (TO-226AA) ISSUE AD





- NOTES:
  1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.
  3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
  4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSION DAND J APPLY BETWEEN L AND K MINIMUM. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

|     | INC   | HES   | MILLIMETERS |      |  |
|-----|-------|-------|-------------|------|--|
| DIM | MIN   | MAX   | MIN         | MAX  |  |
| Α   | 0.175 | 0.205 | 4.45        | 5.20 |  |
| В   | 0.170 | 0.210 | 4.32        | 5.33 |  |
| C   | 0.125 | 0.165 | 3.18        | 4.19 |  |
| D   | 0.016 | 0.022 | 0.41        | 0.55 |  |
| F   | 0.016 | 0.019 | 0.41        | 0.48 |  |
| G   | 0.045 | 0.055 | 1.15        | 1.39 |  |
| Н   | 0.095 | 0.105 | 2.42        | 2.66 |  |
| J   | 0.015 | 0.020 | 0.39        | 0.50 |  |
| K   | 0.500 |       | 12.70       |      |  |
| L   | 0.250 |       | 6.35        |      |  |
| N   | 0.080 | 0.105 | 2.04        | 2.66 |  |
| P   |       | 0.100 |             | 2.54 |  |
| R   | 0.115 |       | 2.93        |      |  |
| V   | 0.135 |       | 3.43        |      |  |

STYLE 1:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

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