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MPS4126

Amplifier Transistor

PNP Silicon

Features

- This is a Pb-Free Device*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|----------------|-------------|---------------------------|
| Collector–Emitter Voltage | V_{CE} | –25 | Vdc |
| Collector–Base Voltage | V_{CB} | –25 | Vdc |
| Emitter–Base Voltage | V_{EB} | –4.0 | Vdc |
| Collector Current – Continuous | I_C | –200 | mAdc |
| Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 625 5.0 | W mW/ $^\circ\text{C}$ |
| Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C | P_D | 1.5 12 | W mW/ $^\circ\text{C}$ |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | –55 to +150 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

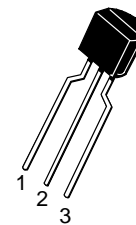
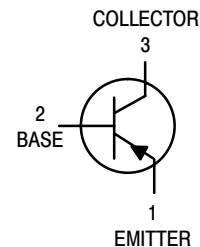
| Characteristic | Symbol | Max | Unit |
|---|-----------------|------|---------------------------|
| Thermal Resistance, Junction–to–Ambient | $R_{\theta JA}$ | 200 | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance, Junction–to–Case | $R_{\theta JC}$ | 83.3 | $^\circ\text{C}/\text{W}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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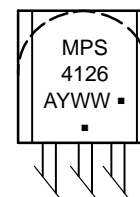
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TO-92
CASE 29
STYLE 1

BENT LEAD
TAPE & REEL
AMMO PACK

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
■ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------------|--------------------|-------------------|
| MPS4126RLRAG | TO-92 (Pb-Free) | 2,000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MPS4126

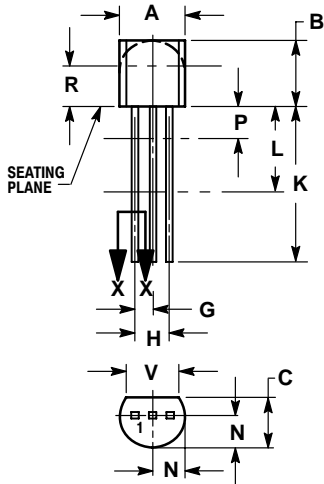
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|--|---------------|-----------|----------|------|
| OFF CHARACTERISTICS | | | | |
| Collector–Emitter Breakdown Voltage ($I_C = -1.0\text{ mA}$, $I_B = 0$) | $V_{(BR)CEO}$ | -25 | - | Vdc |
| Collector–Base Breakdown Voltage ($I_C = -10\text{ }\mu\text{A}$, $I_E = 0$) | $V_{(BR)CBO}$ | -25 | - | Vdc |
| Emitter–Base Breakdown Voltage ($I_C = 0$, $I_E = -10\text{ }\mu\text{A}$) | $V_{(BR)EBO}$ | -4.0 | - | Vdc |
| Collector Cutoff Current ($V_{CB} = -20\text{ V}$, $I_E = 0$) | I_{CBO} | - | -50 | nAdc |
| Emitter Cutoff Current ($V_{EB} = -3.0\text{ V}$, $I_C = 0$) | I_{EBO} | - | -50 | nAdc |
| ON CHARACTERISTICS | | | | |
| DC Current Gain ($I_C = -2.0\text{ mA}$, $V_{CE} = -1.0\text{ V}$) ($I_C = -50\text{ mA}$, $V_{CE} = -1.0\text{ V}$) | h_{FE} | 120 60 | 360 - | - |
| Collector–Emitter Saturation Voltage ($I_C = -50\text{ mA}$, $I_B = -5.0\text{ mA}$) | $V_{CE(sat)}$ | - | -0.4 | Vdc |
| Base–Emitter Saturation Voltage ($I_C = -50\text{ mA}$, $I_B = -5.0\text{ mA}$) | $V_{BE(sat)}$ | - | -0.95 | Vdc |
| SMALL-SIGNAL CHARACTERISTICS | | | | |
| Current–Gain — Bandwidth Product ($I_C = -10\text{ mA}$, $V_{CE} = -20\text{ V}$, $f = 100\text{ MHz}$) | f_T | 170 | - | MHz |
| Output Capacitance ($V_{CB} = -5.0\text{ V}$, $I_E = 0$, $f = 1.0\text{ MHz}$) | C_{ob} | - | 4.5 | pF |
| Input Capacitance ($V_{EB} = -0.5\text{ V}$, $I_C = 0$, $f = 1.0\text{ MHz}$) | C_{ib} | - | 11.5 | pF |
| Small–Signal Current Gain ($I_C = -2.0\text{ mA}$, $V_{CE} = 1.0\text{ V}$, $f = 1.0\text{ kHz}$) | h_{fe} | 120 | 480 | - |
| Noise Figure ($I_C = -100\text{ }\mu\text{A}$, $V_{CE} = -5.0\text{ V}$, $R_S = 1.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$) | NF | - | 4.0 | dB |

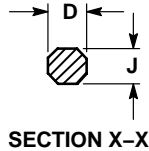
MPS4126

PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AM



STRAIGHT LEAD
BULK PACK

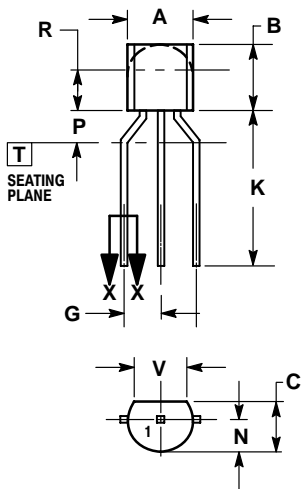


SECTION X-X

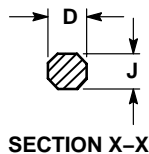
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.021 | 0.407 | 0.533 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 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 | --- |



BENT LEAD
TAPE & REEL
AMMO PACK



SECTION X-X

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 4.45 | 5.20 |
| B | 4.32 | 5.33 |
| C | 3.18 | 4.19 |
| D | 0.40 | 0.54 |
| G | 2.40 | 2.80 |
| J | 0.39 | 0.50 |
| K | 12.70 | --- |
| N | 2.04 | 2.66 |
| P | 1.50 | 4.00 |
| R | 2.93 | --- |
| V | 3.43 | --- |

STYLE 1:

1. EMITTER
2. BASE
3. COLLECTOR

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