

# 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 $25^\circ\text{C}$	$P_D$	625 5.0	W mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	1.5 12	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

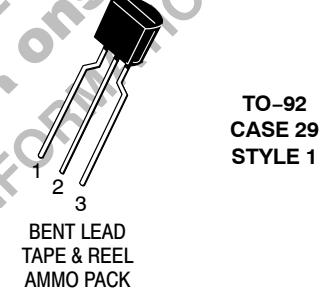
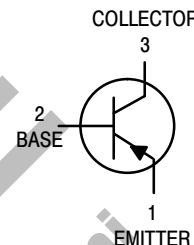
### THERMAL CHARACTERISTICS

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

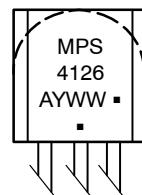
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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### 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 <sup>†</sup>
MPS4126RLRAG	TO-92 (Pb-Free)	2,000/Tape & Reel

<sup>†</sup>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.

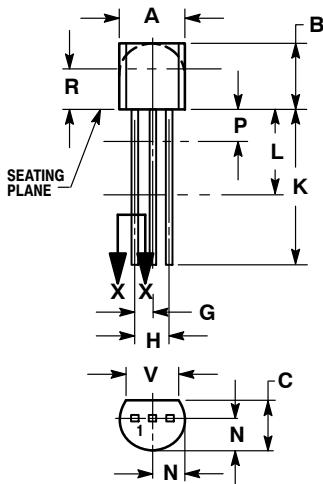
\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# MPS4126

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

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

## PACKAGE DIMENSIONS

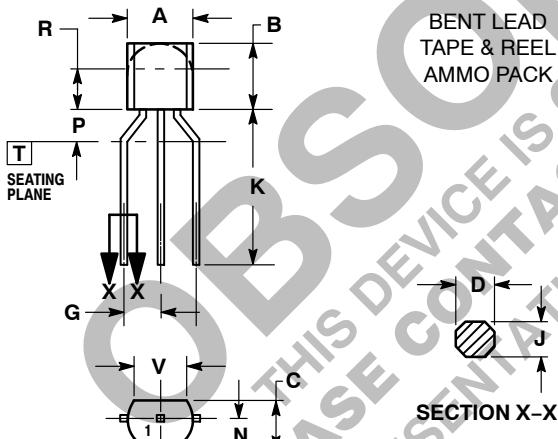
TO-92 (TO-226)  
CASE 29-11  
ISSUE AMSTRAIGHT LEAD  
BULK PACK

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	---

SECTION X-X

BENT LEAD  
TAPE & REEL  
AMMO PACK

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:  
 PIN 1. Emitter  
 2. Base  
 3. Collector

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