## **MPS5179**

**Preferred Device** 

# **High Frequency Transistor**

## **NPN Silicon**

#### **Features**

• Pb-Free Packages are Available\*

#### **MAXIMUM RATINGS**

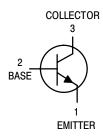
Rating	Symbol	Value	Unit	
Collector – Emitter Voltage	V <sub>CEO</sub>	12	Vdc	
Collector - Base Voltage	V <sub>CBO</sub>	20	Vdc	
Emitter – Base Voltage	ye V <sub>EBO</sub>			
Collector Current – Continuous	I <sub>C</sub>	50	mAdc	
Fotal Device Dissipation @ T <sub>A</sub> = 25°C P <sub>D</sub> Derate above 25°C		200 1.14	W mW/°C	
Total Device Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C			W mW/°C	
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C	

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.



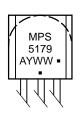
#### ON Semiconductor®

#### http://onsemi.com



#### MARKING DIAGRAM





MPS5179 = Device Code

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>			
MPS5179	TO-92	5000 Units/Box			
MPS5179G	TO-92 (Pb-Free)	5000 Units/Box			
MPS5179RLRA	TO-92	2000/Tape & Reel			
MPS5179RLRAG	TO-92 (Pb-Free)	2000/Tape & Reel			
MPS5179RLRP	TO-92	2000/Tape & Ammo			
MPS5179RLRPG	TO-92 (Pb-Free)	2000/Tape & Ammo			

<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.

**Preferred** devices are recommended choices for future use and best overall value.

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

### **MPS5179**

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

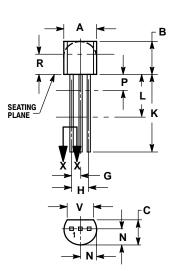
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS	·			
Collector – Emitter Sustaining Voltage ( $I_C = 3.0 \text{ mAdc}, I_B = 0$ )	V <sub>CEO(sus)</sub>	12	_	Vdc
Collector – Base Breakdown Voltage ( $I_C = 0.001 \text{ mAdc}, I_E = 0$ )	V <sub>(BR)</sub> CBO	20	-	Vdc
Emitter – Base Breakdown Voltage $(I_E = 0.01 \text{ mAdc}, I_C = 0)$	V <sub>(BR)EBO</sub>	2.5	-	Vdc
Collector Cutoff Current $(V_{CB} = 15 \text{ Vdc}, I_E = 0)$ $(V_{CB} = 15 \text{ Vdc}, I_E = 0, T_A = 150^{\circ}\text{C})$	I <sub>CBO</sub>	_ _	0.02 1.0	μAdc
ON CHARACTERISTICS	<u> </u>		•	
DC Current Gain (I <sub>C</sub> = 3.0 mAdc, V <sub>CE</sub> = 1.0 Vdc)	h <sub>FE</sub>	25	250	-
Collector – Emitter Saturation Voltage ( $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$ )	V <sub>CE(sat)</sub>	-	0.4	Vdc
Base – Emitter Saturation Voltage ( $I_C = 10 \text{ mAdc}$ , $I_B = 1.0 \text{ mAdc}$ )	V <sub>BE(sat)</sub>	_	1.0	Vdc
SMALL-SIGNAL CHARACTERISTICS	<u> </u>		•	
Current – Gain – Bandwidth Product (Note 1) (I <sub>C</sub> = 5.0 mAdc, V <sub>CE</sub> = 6.0 Vdc, f = 100 MHz)	f⊤	900	2000	MHz
Collector–Base Capacitance $(V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 0.1 \text{ to } 1.0 \text{ MHz})$	C <sub>cb</sub>	-	1.0	pF
Small Signal Current Gain (I <sub>C</sub> = 2.0 mAdc, V <sub>CE</sub> = 6.0 Vdc, f = 1.0 kHz)	h <sub>fe</sub>	25	300	-

f<sub>T</sub> is defined as the frequency at which |h<sub>fe</sub>| extrapolates to unity.

#### MPS5179

#### PACKAGE DIMENSIONS

TO-92 (TO-226) CASE 29-11 **ISSUE AL** 





#### NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 114-3M, 1902.
  CONTROLLING DIMENSION: INCH.
  CONTOUR OF PACKAGE BEYOND DIMENSION R
  IS UNCONTROLLED.
  LEAD DIMENSION IS UNCONTROLLED IN P AND
- BEYOND DIMENSION K MINIMUM.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.175	0.205	4.45	5.20
В	0.170	0.210	4.32	5.33
С	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
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

BASE 2.

COLLECTOR

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