

# MPS5179

Preferred Device

## High Frequency Transistor

### NPN Silicon

#### Features

- Pb-Free Packages are Available\*

#### MAXIMUM RATINGS

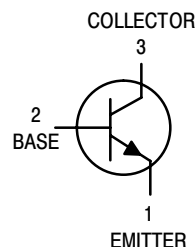
Rating	Symbol	Value	Unit
Collector–Emitter Voltage	$V_{CEO}$	12	Vdc
Collector–Base Voltage	$V_{CBO}$	20	Vdc
Emitter–Base Voltage	$V_{EBO}$	2.5	Vdc
Collector Current – Continuous	$I_C$	50	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	200 1.14	W mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300 1.71	W mW/ $^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	–55 to +150	$^\circ\text{C}$

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.

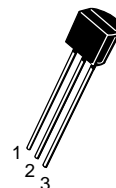


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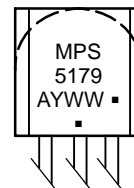
<http://onsemi.com>



#### MARKING DIAGRAM



TO-92  
CASE 29-11  
STYLE 1



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†
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

†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.

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

# MPS5179

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

Characteristic	Symbol	Min	Max	Unit
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### OFF CHARACTERISTICS

Collector–Emitter Sustaining Voltage ( $I_C = 3.0\text{ mA}$ , $I_B = 0$ )	$V_{CEO(sus)}$	12	–	Vdc
Collector–Base Breakdown Voltage ( $I_C = 0.001\text{ mA}$ , $I_E = 0$ )	$V_{(BR)CBO}$	20	–	Vdc
Emitter–Base Breakdown Voltage ( $I_E = 0.01\text{ mA}$ , $I_C = 0$ )	$V_{(BR)EBO}$	2.5	–	Vdc
Collector Cutoff Current ( $V_{CB} = 15\text{ Vdc}$ , $I_E = 0$ ) ( $V_{CB} = 15\text{ Vdc}$ , $I_E = 0$ , $T_A = 150^\circ\text{C}$ )	$I_{CBO}$	– –	0.02 1.0	$\mu\text{A}$

### ON CHARACTERISTICS

DC Current Gain ( $I_C = 3.0\text{ mA}$ , $V_{CE} = 1.0\text{ Vdc}$ )	$h_{FE}$	25	250	–
Collector–Emitter Saturation Voltage ( $I_C = 10\text{ mA}$ , $I_B = 1.0\text{ mA}$ )	$V_{CE(sat)}$	–	0.4	Vdc
Base–Emitter Saturation Voltage ( $I_C = 10\text{ mA}$ , $I_B = 1.0\text{ mA}$ )	$V_{BE(sat)}$	–	1.0	Vdc

### SMALL–SIGNAL CHARACTERISTICS

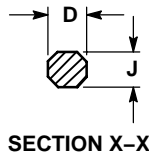
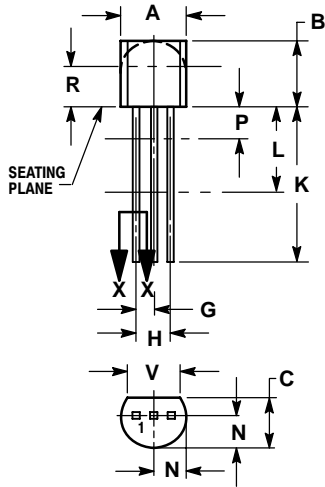
Current–Gain – Bandwidth Product (Note 1) ( $I_C = 5.0\text{ mA}$ , $V_{CE} = 6.0\text{ Vdc}$ , $f = 100\text{ MHz}$ )	$f_T$	900	2000	MHz
Collector–Base Capacitance ( $V_{CB} = 10\text{ Vdc}$ , $I_E = 0$ , $f = 0.1$ to $1.0\text{ MHz}$ )	$C_{cb}$	–	1.0	pF
Small Signal Current Gain ( $I_C = 2.0\text{ mA}$ , $V_{CE} = 6.0\text{ Vdc}$ , $f = 1.0\text{ kHz}$ )	$h_{fe}$	25	300	–

1.  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.

# MPS5179

## PACKAGE DIMENSIONS

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




### 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	---

### STYLE 1:

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

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