# OMNETICS CONNECTOR CORPORATION









# **MICRO & NANO STRIP CONNECTORS**

Micro .050" (1.27mm) & Nano .025" (.64mm) Catalog



# Nano Strip Picture Index



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### HORIZONTAL SMT (TYPE AA)

Single Row Horizontal Nano Strip connectors offer an extremely low profile package that is well suited for pick and place methods. They have a very tight pitch of .025" (64 mm) centerlines. These connectors feature Omnetics' highly reliable gold plated Flex Pin contact system, conforming to the requirements of MIL-DTL-32139. These durable lightweight connectors are perfect for the most demanding applications.

These connectors are available in standard sizes ranging from 2 to 60 positions, as well as custom configurations.



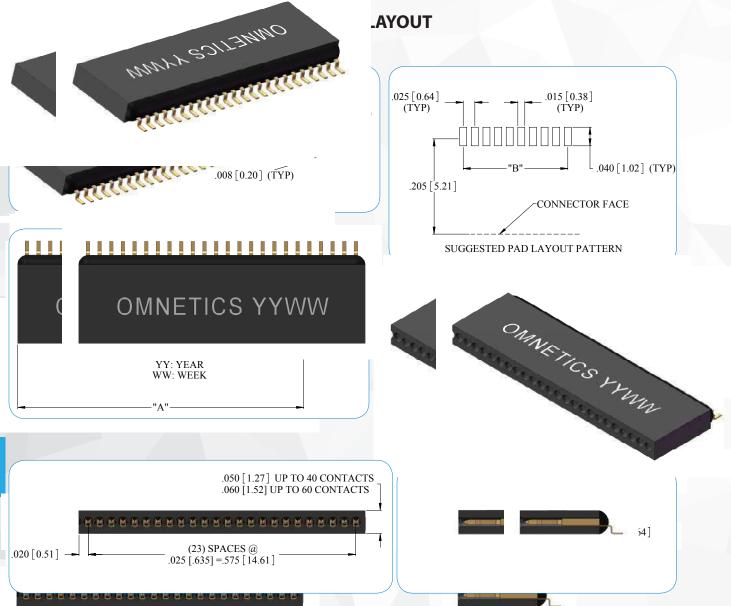
#### **ELECTRO-MECHANICAL SPECS**

Durability:	2000 Cycles
Temperature:	-55°C to +125 °C (200 °C w/HTE)
Current rating:	1 AMP per contact
Voltage Rating (DWV):	250 VAC RMS Sea Level
Insulation Resistance:	5,000 Megohms min @ 100 VDC
Shock:	_100 G's discontinuity < 10 nanoseconds
Vibration:	20 G's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing:	NASA SP-R-0022
Contact Resistance:	71 Milliohms max (71 mV max @ 1 AMP)
Mating/Unmating Force:	2.5 oz (71 g) typical per contact

- Standard Socket PCB Tail Termination:
   Standard Pin PCB Tail Termination:
   Solder plated per AMS-P-81728 (Non-RoHS)
   RoHS Pin PCB Tail Termination:
   Hard gold plated per ASTM B488
   RoHS Socket PCB Tail Termination:
   Hard gold plated per ASTM B488
- Noris socket res fair ferri
- Insulator:
- Pin:\_
- Socket:

- \_Polyphenylene Sulfide per MIL-M-24519
- \_\_Gold Plated BeCu
  - Gold Plated Copper Alloy
- Ероху





#### **DIMENSIONS FOR "A"**

90

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

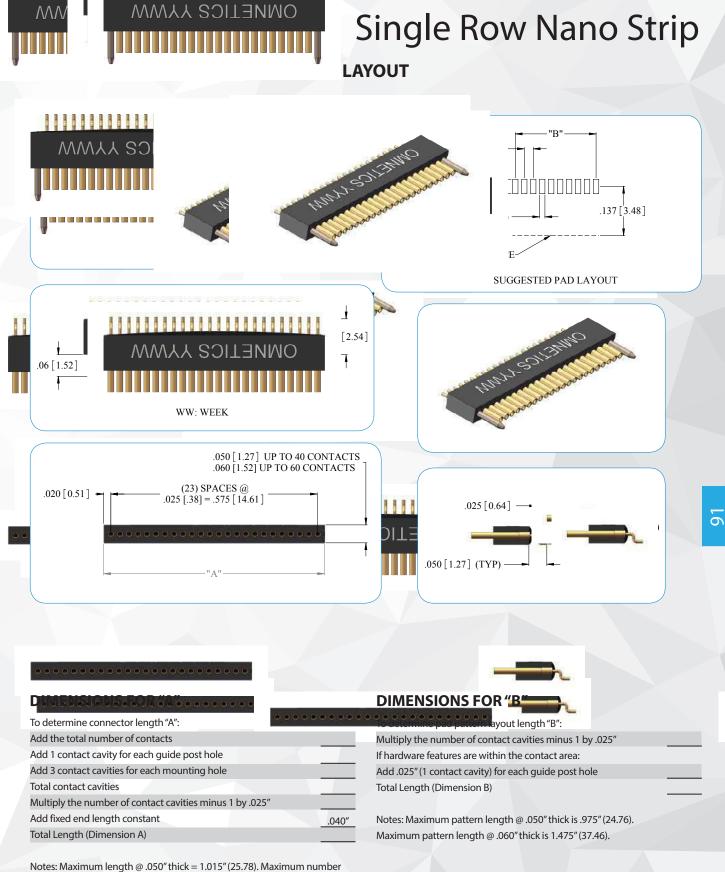
#### **DIMENSIONS FOR "B"**

To determine pad pattern layout length "B":		
Multiply the number of contact cavities minus 1 by .025"		
If hardware features are within the contact area:		
Add .025" (1 contact cavity) for each guide post hole		
Add .075" (3 contact cavities) for each mounting hole		
Total Length (Dimension B)		

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46). Add .050" from center of mounting hole to first pad (if the first contact cavity is used for a guide post hole, .050" dimension must be adjusted).

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

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Notes: Maximum length @.050" thick =  $1.015^{\circ}$  (25.78). Maximum number of contact cavities is 60. Maximum length @.060" thick =  $1.515^{\circ}$  (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

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### HORIZONTAL SMT (TYPE AA) ORDERING GUIDE

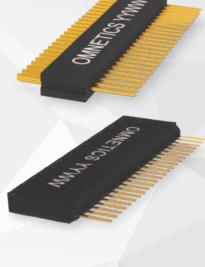


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### **STRAIGHT TAIL (TYPE DD)**

Single Row Nano Strip connectors can be loaded with simple straight tails (Integral or Crimped). Suitable for vertical thruhole mounting to fine pitched flex circuits, they are designed on .025" (.64 mm) centerlines. The straight solid tails are also commonly used in ultra fine wire wrap terminations, such as electrophysiology. These connectors feature Omnetics' highly reliable gold plated Flex Pin contact system conforming to the requirements of MIL-DTL-32139. These connectors are available in standard sizes ranging from 2 through 60 positions as well as custom configurations.

Flex design and installation service is also available from Omnetics. Please contact us for more information.



#### **ELECTRO-MECHANICAL SPECS**

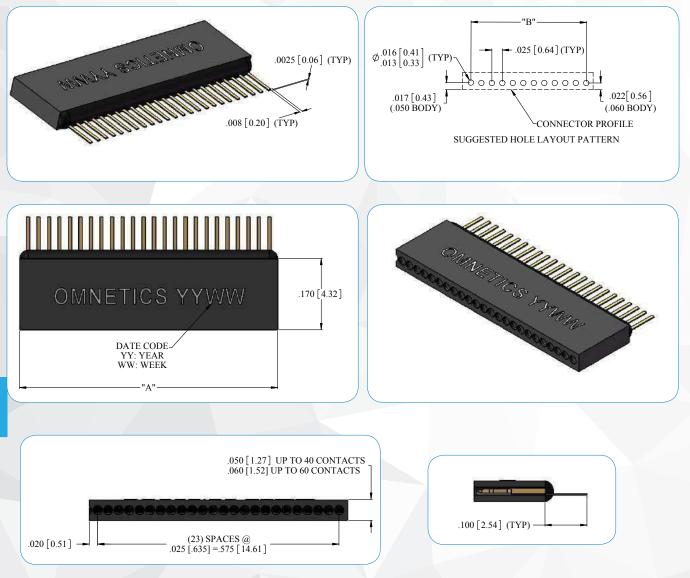
Durability:	2000 Cycles
Temperature:	-55°C to +125 °C (200 °C w/HTE)
Current rating:	1 AMP per contact
Voltage Rating (DWV):	250 VAC RMS Sea Level
Insulation Resistance:	5,000 Megohms min @ 100 VDC
Shock:	100 G's discontinuity < 10 nanoseconds
Vibration:	20 G's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing:	NASA SP-R-0022
Contact Resistance:	71 Milliohms max (71 mV max @ 1 AMP)
Mating/Unmating Force:	2.5 oz (71 g) typical per contact

- Standard Socket PCB Tail Termination: Soldered per J-STD-006 (Non-RoHS) Standard Pin PCB Tail Termination: Solder plated per AMS-P-81728 (Non-RoHS) RoHS Pin PCB Tail Termination: Hard gold plated per ASTM B488 Hard gold plated per ASTM B488
- RoHS Socket PCB Tail Termination:
- Insulator:
- Pin:
- Socket:
- Encapsulant:

- Polyphenylene Sulfide per MIL-M-24519
- Gold Plated BeCu
  - Gold Plated Copper Alloy
- Epoxy



**NPS-DD LAYOUT** 



#### **DIMENSIONS FOR "A"**

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

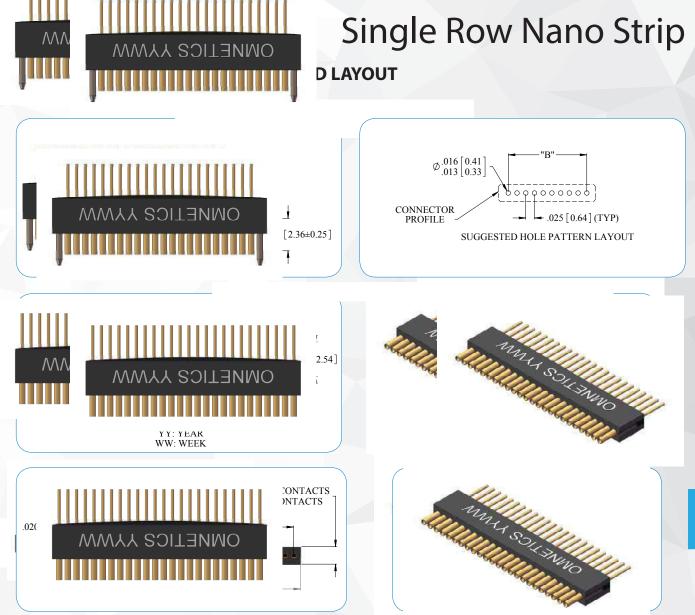
#### **DIMENSIONS FOR "B"**

To determine pad pattern layout length "B":	
Multiply the number of contact cavities minus 1 by .025"	
If hardware features are within the contact area:	
Add .025" (1 contact cavity) for each guide post hole	
Add .075" (3 contact cavities) for each mounting hole	
Total Length (Dimension B)	

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46). Add .050" from center of mounting hole to first pad (if the first contact cavity is used for a guide post hole, .050" dimension must be adjusted).

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

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DEMENSIONS FOR "A"	
To determine connector length	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015"(25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515"(38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

#### DIMENSIONS FOR "B"

To determine pad pattern layout lengen b." Multiply the number of contact cavities minus 1 by .025" If hardware features are within the contact area: Add .025" (1 contact cavity) for each guide post hole Total Length (Dimension B)

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46).

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### **STRAIGHT TAIL (TYPE DD) ORDERING GUIDE**

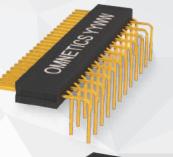


FOR CORPORATION

### LONG/SHORT ALT. THRU-HOLE (TYPE H2)

The Single Row Nano Strip connectors have contacts arranged on .025 (.64 mm) centerlines. The thru-hole tails are arranged in a .050" x .0.50" grid, allowing space for traces and annular rings. These connectors feature Omnetics' highly reliable gold plated Flex Pin contact system, conforming to the requirements of MIL-DTL-32139. These durable lightweight connectors are perfect for the most demanding applications. They are available with mounting holes suitable for PCB and flex mounting.

These connectors are available in standard sizes ranging from 2 to 60 positions, as well as custom configurations.



#### **ELECTRO-MECHANICAL SPECS**

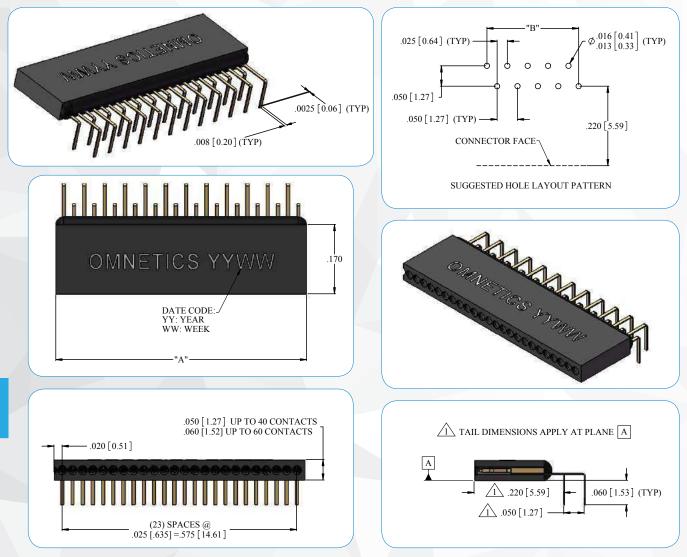
Durability:	2000 Cycles
Temperature:	-55°C to +125 °C (200 °C w/HTE)
Current rating:	1 AMP per contact
Voltage Rating (DWV):	250 VAC RMS Sea Level
Insulation Resistance:	5,000 Megohms min @ 100 VDC
Shock:	100 G's discontinuity < 10 nanoseconds
Vibration:	20 G's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing:	NASA SP-R-0022
Contact Resistance:	71 Milliohms max (71 mV max @ 1 AMP)
Mating/Unmating Force:	2.5 oz (71 g) typical per contact

- Standard Socket PCB Tail Termination: Soldered per J-STD-006 (Non-RoHS) Standard Pin PCB Tail Termination: Solder plated per AMS-P-81728 (Non-RoHS) RoHS Pin PCB Tail Termination: Hard gold plated per ASTM B488 Hard gold plated per ASTM B488
- RoHS Socket PCB Tail Termination:
- Insulator:
- Pin:
- Socket:
- Encapsulant:

- Polyphenylene Sulfide per MIL-M-24519
- Gold Plated BeCu
- Gold Plated Copper Alloy
- Epoxy



**NPS-H2 LAYOUT** 



#### **DIMENSIONS FOR "A"**

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

#### **DIMENSIONS FOR "B"**

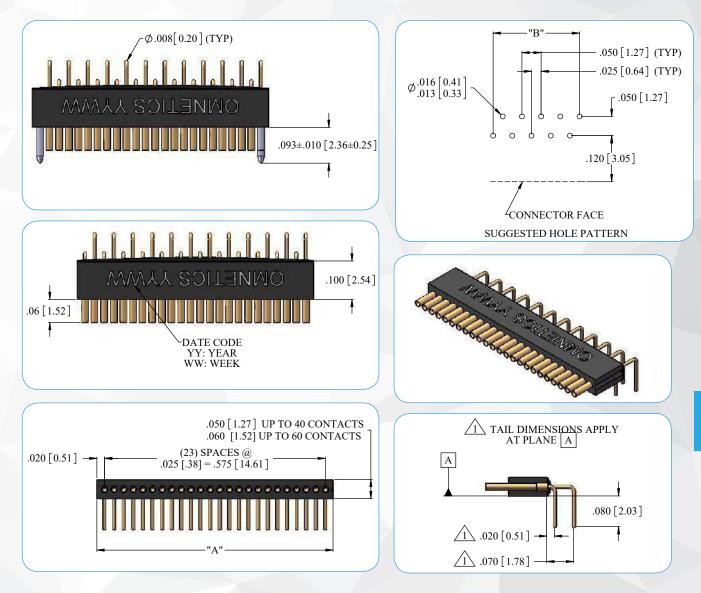
To determine pad pattern layout length "B":	
Multiply the number of contact cavities minus 1 by .025"	
If hardware features are within the contact area:	
Add .025" (1 contact cavity) for each guide post hole	
Add .075" (3 contact cavities) for each mounting hole	
Total Length (Dimension B)	
	Multiply the number of contact cavities minus 1 by .025" If hardware features are within the contact area: Add .025" (1 contact cavity) for each guide post hole Add .075" (3 contact cavities) for each mounting hole

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46). Add .050" from center of mounting hole to first pad (if the first contact cavity is used for a guide post hole, .050" dimension must be adjusted).

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

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### **NSS-H2 LAYOUT**



#### **DIMENSIONS FOR "A"**

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

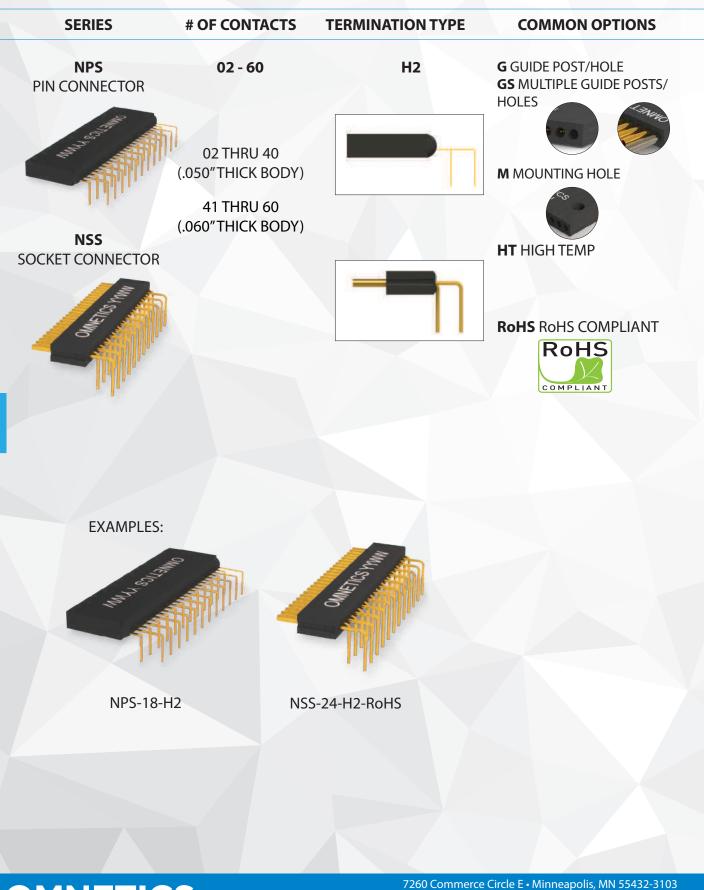
#### **DIMENSIONS FOR "B"**

To determine pad pattern layout length "B": Multiply the number of contact cavities minus 1 by .025" If hardware features are within the contact area: Add .025" (1 contact cavity) for each guide post hole Total Length (Dimension B)

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46).

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

### SHORT/LONG ALT. THRU HOLE TAIL (TYPE H2) ORDERING GUIDE



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### **VERTICAL SMT (TYPE VV)**

The Single Row VV Nano Strip connectors have contacts arranged on .025 (.64 mm) centerlines. These connectors feature Omnetics' highly reliable gold plated Flex Pin contact system, conforming to the requirements of MIL-DTL-32139. These durable lightweight connectors are perfect for the most demanding applications.

These connectors are available in standard sizes ranging from 2 to 60 positions, as well as custom configurations.



#### **ELECTRO-MECHANICAL SPECS**

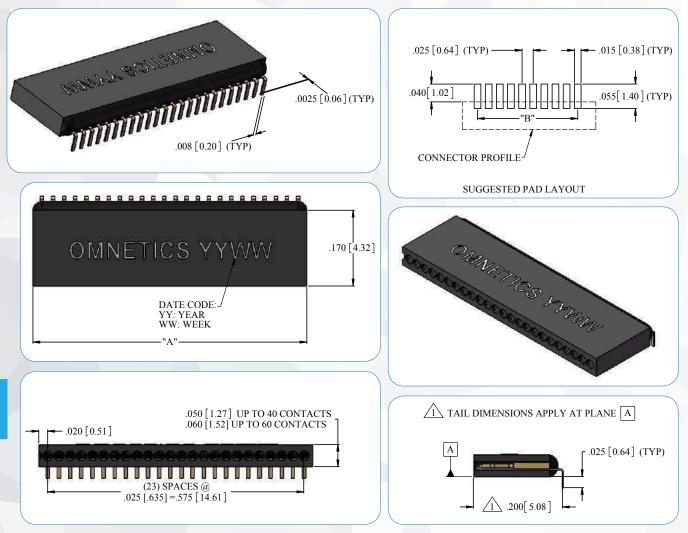
Durability:	2000 Cycles
Temperature:	-55°C to +125 °C (200 °C w/HTE)
Current rating:	1 AMP per contact
Voltage Rating (DWV):	250 VAC RMS Sea Level
Insulation Resistance:	5,000 Megohms min @ 100 VDC
Shock:	_100 G's discontinuity < 10 nanoseconds
Vibration:	20 G's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing:	NASA SP-R-0022
Contact Resistance:	_71 Milliohms max (71 mV max @ 1 AMP)
Mating/Unmating Force:	2.5 oz (71 g) typical per contact

- Standard Socket PCB Tail Termination:
  Standard Pin PCB Tail Termination:
  RoHS Pin PCB Tail Termination:
  RoHS Socket PCB Tail Termination:
  Hard gold plated per ASTM B488
  RoHS Socket PCB Tail Termination:
  Hard gold plated per ASTM B488
- Insulator:
- Pin:\_\_\_\_\_
- Socket:
- Encapsulant:\_\_\_\_\_\_\_

- Polyphenylene Sulfide per MIL-M-24519
- Gold Plated BeCu
- Gold Plated Copper Alloy
- Ероху



**NPS-VV LAYOUT** 



#### **DIMENSIONS FOR "A"**

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

#### **DIMENSIONS FOR "B"**

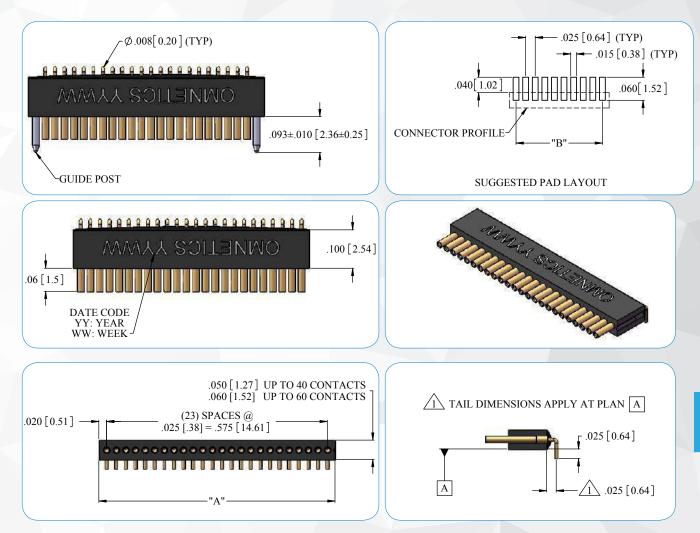
To determine pad pattern layout length "B":	
Multiply the number of contact cavities minus 1 by .025"	
If hardware features are within the contact area:	
Add .025" (1 contact cavity) for each guide post hole	
Add .075" (3 contact cavities) for each mounting hole	
Total Length (Dimension B)	

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46). Add .050" from center of mounting hole to first pad (if the first contact cavity is used for a guide post hole, .050" dimension must be adjusted).

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

### **OMNETICS** CONNECTOR CORPORATION

### **NSS-VV LAYOUT**



#### **DIMENSIONS FOR "A"**

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post hole	
Add 3 contact cavities for each mounting hole	
Total contact cavities	
Multiply the number of contact cavities minus 1 by .025"	
Add fixed end length constant	.040″
Total Length (Dimension A)	

Notes: Maximum length @ .050" thick = 1.015"(25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515"(38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer.

#### **DIMENSIONS FOR "B"**

To determine pad pattern layout length "B": Multiply the number of contact cavities minus 1 by .025" If hardware features are within the contact area: Add .025" (1 contact cavity) for each guide post hole Total Length (Dimension B)

Notes: Maximum pattern length @ .050" thick is .975" (24.76). Maximum pattern length @ .060" thick is 1.475" (37.46).

Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

### VERTICAL SURFACE MOUNT TAIL (TYPE VV) ORDERING GUIDE



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### PRE-WIRED/CABLE (TYPE WD/WC)

Pre-wired Single Row Nano Strip connectors are available with 30 AWG or smaller stranded wire. These assemblies are crimped using proprietary semi-automated crimping systems. Due to their small size and precision required to make these quality crimps, hand crimping is not an option. Precrimped wires and contacts are potted in place further protecting the integrity of the crimp joint. Building these parts to order allows for maximum flexibility in wire type, size and color coding. Commercial Off The Shelf (COTS) versions are also available with 18" of color coded 30 AWG Teflon<sup>®</sup> wire for quick turn around.

These connectors are available in standard sizes ranging from 2 through 60 positions as well as custom configurations.

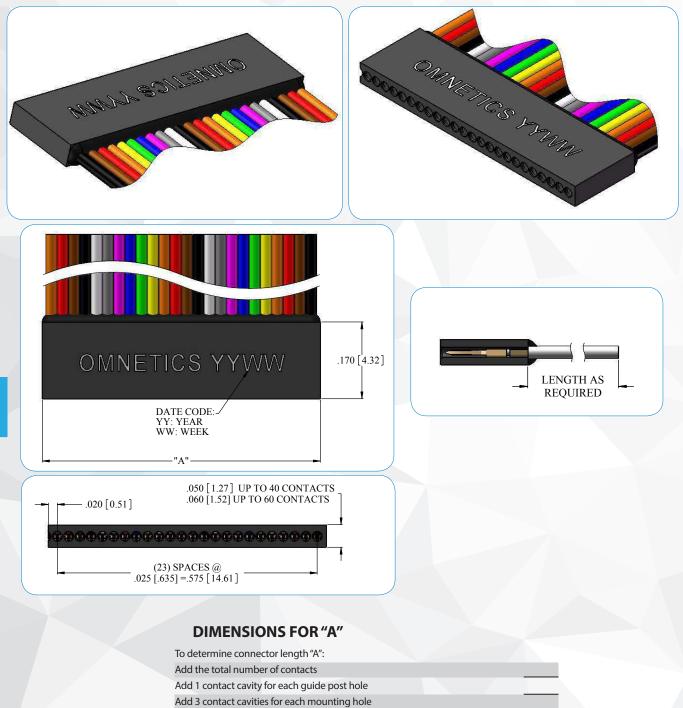
#### **ELECTRO-MECHANICAL SPECS**

Durability:	2000 Cycles
Temperature:	-55°C to +125 °C (200 °C w/HTE)
Current rating:	1 AMP per contact
Voltage Rating (DWV):	250 VAC RMS Sea Level
Insulation Resistance:	_5,000 Megohms min @ 100 VDC
Shock:	100 G's discontinuity < 10 nanoseconds
Vibration:	20 G's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing:	NASA SP-R-0022
Contact Resistance:	71 Milliohms max (71 mV max @ 1 AMP)
Mating/Unmating Force:	2.5 oz (71 g) typical per contact

<ul><li>Standard Wire:</li><li>Insulator:</li></ul>	32 AWG, Teflon Insulated per NEMA-HP3 Polyphenylene Sulfide per MIL-M-24519
• Pin:	Gold Plated BeCu
Socket:	Gold Plated Copper Alloy
Encapsulant:	Ероху



**NPS-WD/WC LAYOUT** 

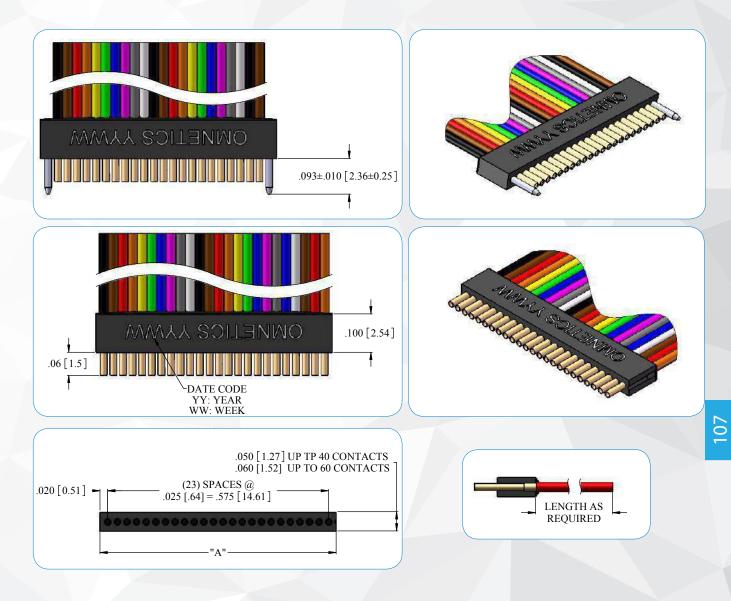


Total contact cavities

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer. Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.



### **NSS-WD/WC LAYOUT**

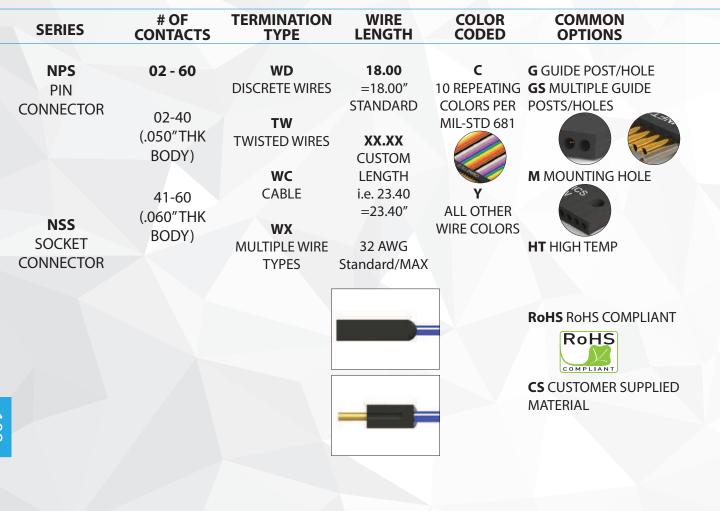


#### **DIMENSIONS FOR "A"**

To determine connector length "A":	
Add the total number of contacts	
Add 1 contact cavity for each guide post	
Total contact cavities	
Subtract 1 from the total to get the number of cavity spaces and mulitply by .025"	
Add fixed end length constant	.040
Total Length (Dimension A):	

Notes: Maximum length @ .050" thick = 1.015" (25.78). Maximum number of contact cavities is 60. Maximum length @ .060" thick = 1.515" (38.48). Number of contacts must be reduced to accommodate guide post holes and mounting holes. Default locations for guide post holes may be changed by customer. Dimensions in [] are in Millimeters unless otherwise noted and are for reference only.

### PRE-WIRED/CABLE (TYPE WD/WC) ORDERING GUIDE



**EXAMPLES:** 

NPS-24-WD-18.00-C

NSS-22-WD-18.0-C-GS

