

BI-LOBE[®] | NANO-D

MISSION-CRITICAL INTERCONNECTION TECHNOLOGIES FOR
RUGGED AND HARSH ENVIRONMENT



OMNETICS
CONNECTOR CORPORATION

SINGLE ROW HORIZONTAL SMT (TYPE AA)

Omnetics' **Single Row Horizontal SMT Bi-Lobe®** connectors feature an extremely low-profile package size, making them well-suited for pick-and-place assembly processes. These durable, lightweight connectors feature Omnetics' gold-plated Flex Pin contact system and deliver reliable connectivity in rugged environments. They are spaced on .025" (.64 mm) centerlines and can carry 1 amp per contact. These connectors are available in standard sizes ranging from 5 to 51 positions, as well as custom configurations.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	87 milliohms (87 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

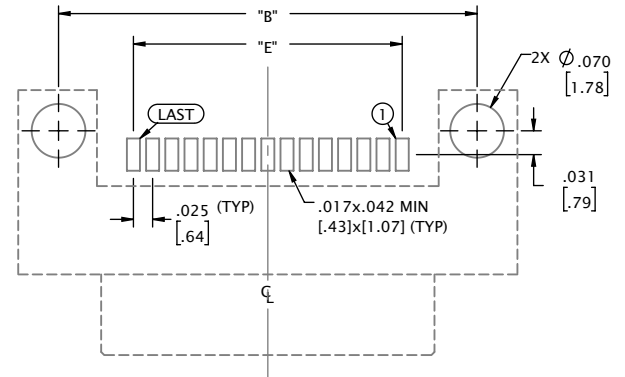
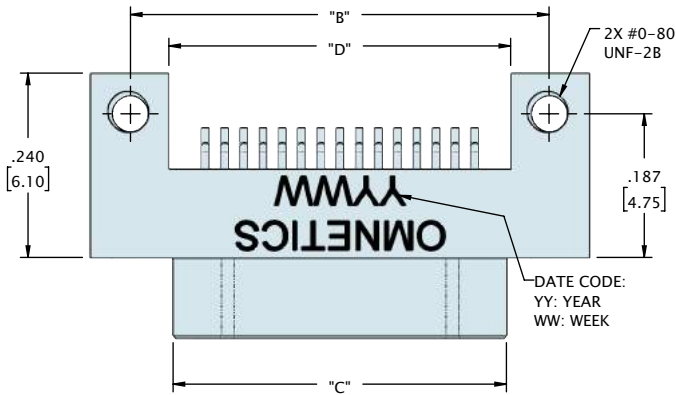
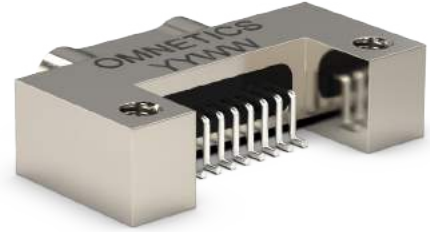
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

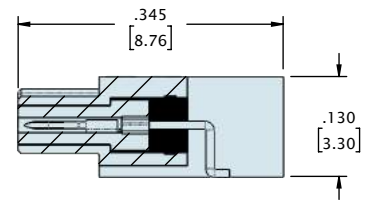
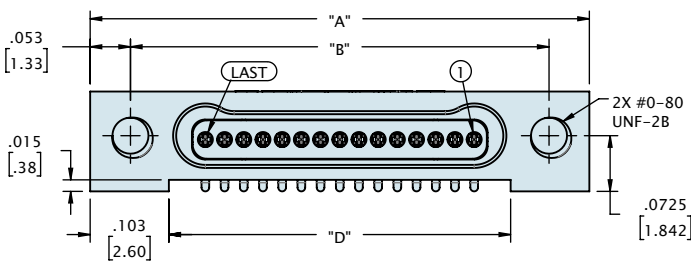
Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW HORIZONTAL SMT (TYPE AA)



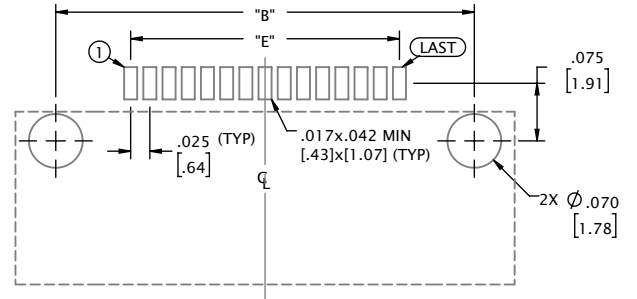
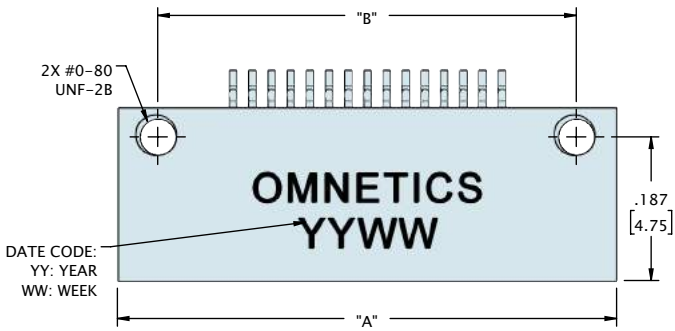
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



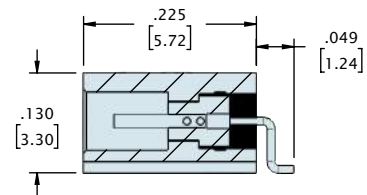
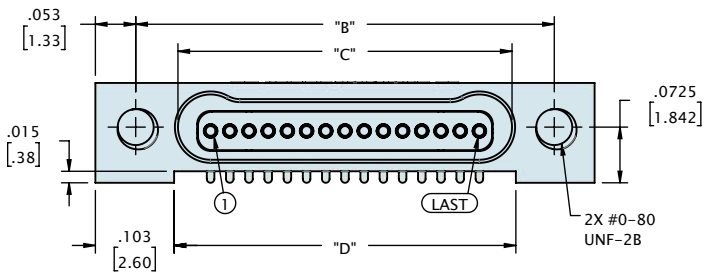
CONTACTS	"A"	"B"	"C"	"D"	"E"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]	.195 [4.95]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]	.295 [7.49]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]	.445 [11.30]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]	.595 [15.11]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]	.695 [17.65]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]	.845 [21.46]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]	.995 [25.27]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]	1.345 [34.16]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW HORIZONTAL SMT (TYPE AA)



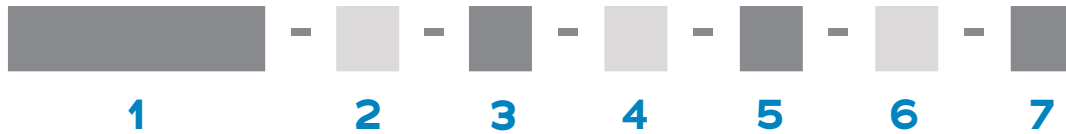
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



CONTACTS	"A"	"B"	"C"	"D"	"E"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.195 [4.95]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.295 [7.49]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.445 [11.30]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.595 [15.11]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.695 [17.65]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.845 [21.46]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.995 [25.27]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]	1.345 [34.16]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

ORDERING GUIDE



1 Series	MBPS Metal Bi-Lobe Pin Single-Row	MBSS Metal Bi-Lobe Socket Single-Row
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Termination Type	AA Horizontal Surface Mount	
4 Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated B Aluminium Shell, Black Anodized T Titanium Shell, Unplated	CD Aluminium shell, Cadmium Plated S Stainless steel Shell, Passivated
5 Common Options	ETH End Threaded Hole, #0-80 NTH Non-Threaded Holes for mounting to the board YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw) HT High Temp. Epoxy CS Customer Supplied Material	EJS End Jack Screw RH RoHS Compliant
6 Mod Codes	M10 Keyed M50 Space Grade Nano-D, SPT1	M30 Ground Spring M53 Space Grade Nano-D, SPT2
7 Special Instructions	YYY Describe anything that is not covered in standard options	

SINGLE ROW VERTICAL SMT (TYPE VV)

Vertical SMT Bi-Lobe[®] connectors require minimal board space on flex circuits and printed circuit boards, making them an ideal choice for space-constrained applications that operate in rugged environmental conditions. These connectors feature Omnetics' highly reliable gold-plated Flex Pin contact system and are available with threaded mounting holes and retention screws. They are available in a wide range of configurations to meet the needs of a variety of critical applications. Choose from shell materials including titanium, aluminum, and stainless steel, with multiple options for plating materials. These connectors are available in standard sizes ranging from 5 through 51 positions, as well as custom configurations.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	87 milliohms (87 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

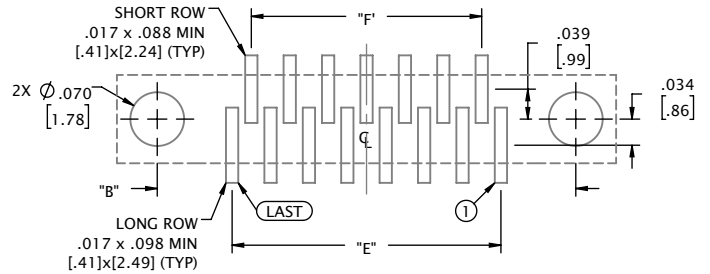
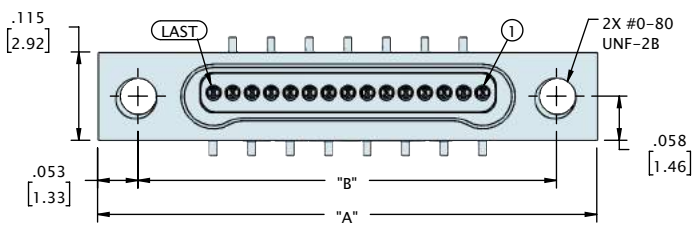
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

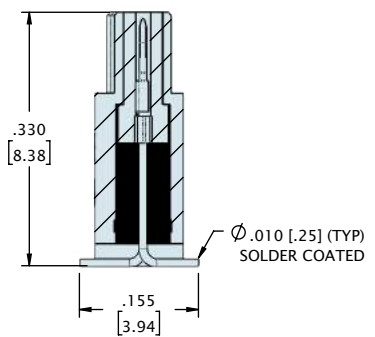
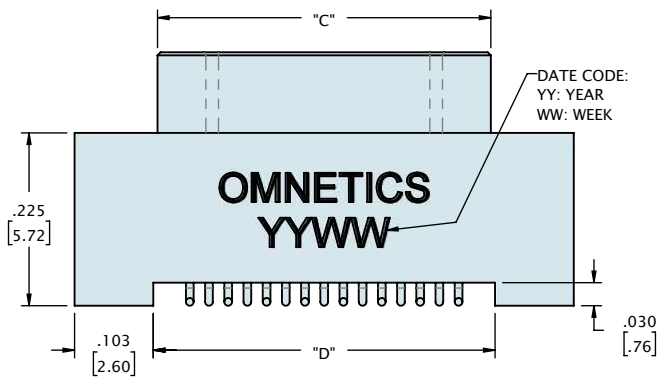
Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW VERTICAL SMT (TYPE VV)



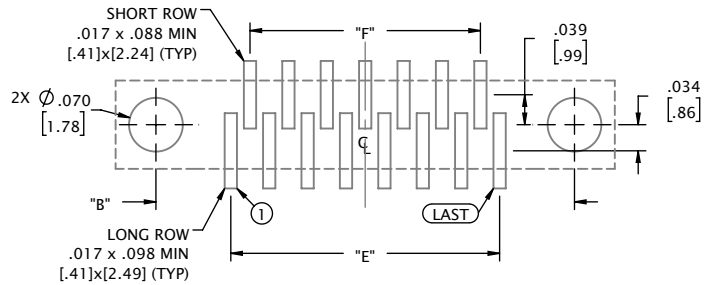
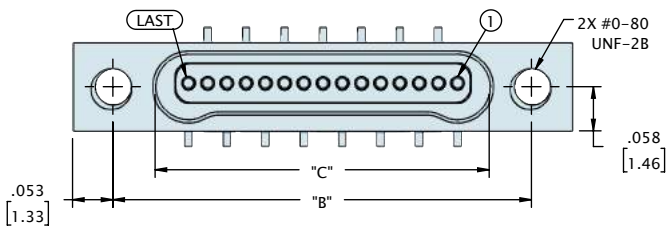
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



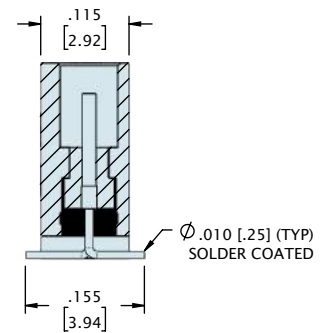
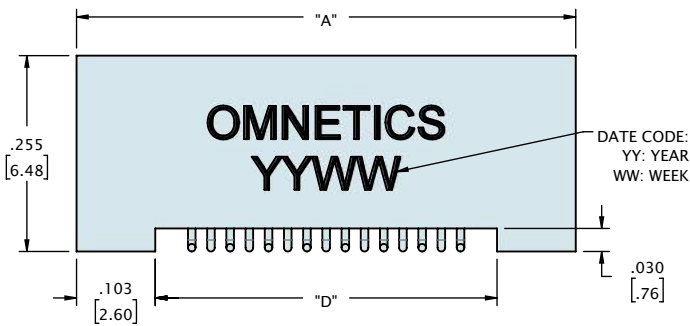
CONTACTS	"A"	"B"	"C"	"D"	"E"	"F"
05	.400 [10.16]	.295 [7.49]	.206 [5.23]	.195 [4.95]	.100 [2.54]	.050 [1.27]
09	.500 [12.70]	.395 [10.03]	.306 [7.77]	.295 [7.49]	.200 [5.08]	.150 [3.81]
15	.650 [16.51]	.545 [13.84]	.456 [11.58]	.445 [11.30]	.350 [8.89]	.300 [7.62]
21	.800 [20.32]	.695 [17.65]	.606 [15.39]	.595 [15.11]	.500 [12.70]	.450 [11.43]
25	.900 [22.86]	.795 [20.19]	.706 [17.93]	.695 [17.65]	.600 [15.24]	.550 [13.97]
31	1.050 [26.67]	.945 [24.00]	.856 [21.74]	.845 [21.46]	.750 [19.05]	.700 [17.78]
37	1.200 [30.48]	1.095 [27.81]	1.006 [25.55]	.995 [25.27]	.900 [22.86]	.850 [21.59]
51	1.550 [39.37]	1.445 [36.70]	1.356 [34.44]	1.345 [34.16]	1.250 [31.75]	1.200 [30.48]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW VERTICAL SMT (TYPE VV)



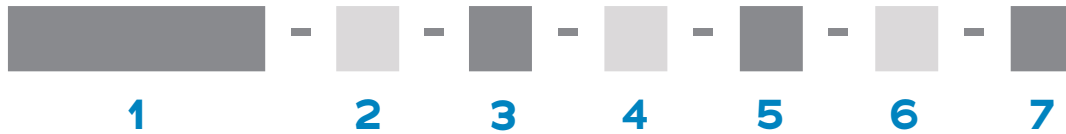
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



CONTACTS	"A"	"B"	"C"	"D"	"E"	"F"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.195 [4.95]	.100 [2.54]	.050 [1.27]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.295 [7.49]	.200 [5.08]	.150 [3.81]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.445 [11.30]	.350 [8.89]	.300 [7.62]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.595 [15.11]	.500 [12.70]	.450 [11.43]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.695 [17.65]	.600 [15.24]	.550 [13.97]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.845 [21.46]	.750 [19.05]	.700 [17.78]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.995 [25.27]	.900 [22.86]	.850 [21.59]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]	1.345 [34.16]	1.250 [31.75]	1.200 [30.48]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

ORDERING GUIDE



1 Series	MBPS Metal Bi-Lobe Pin Single-Row	MBSS Metal Bi-Lobe Socket Single-Row
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Termination Type	VV Vertical Surface Mount	
4 Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated B Aluminium Shell, Black Anodized T Titanium Shell, Unplated	CD Aluminium shell, Cadmium Plated S Stainless steel Shell, Passivated
5 Common Options	ETH End Threaded Hole, #0-80 NTH Non-Threaded Holes For Mounting To The Board YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw) HT High Temp. Epoxy CS Customer Supplied Material	
6 Mod Codes	M10 Keyed M50 Space Grade Nano-D, SPT1	M30 Ground Spring M53 Space Grade Nano-D, SPT2
7 Special Instructions	YYY Describe anything that is not covered in standard options	

SINGLE ROW STRAIGHT TAIL (TYPE DD)

The **Single Row Bi-Lobe®** nanos are suitable for high-reliability electronic devices in medical, military, and other demanding environments. They are a thru-hole mounted, low-mass ruggedized connector on .025" (.64 mm) centerlines. The thru-hole tails are spread onto a mounting pattern on .050 (1.27 mm) with space for annular rings and routing traces. They feature Omnetics' gold-plated Flex Pin contact system. These durable, lightweight connectors intermate with Omnetics QPL versions of MIL-DTL-32139. They are available with retention screws for a positive lock and come in standard sizes ranging from 5 to 51 positions. Custom configurations are also available.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

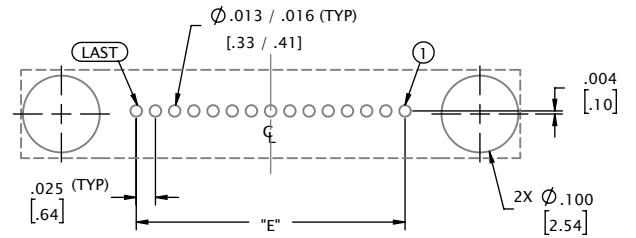
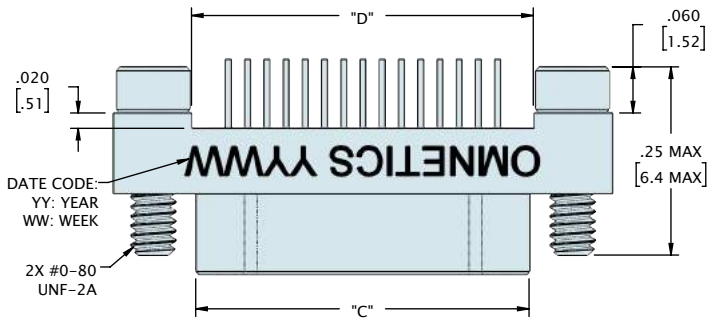
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

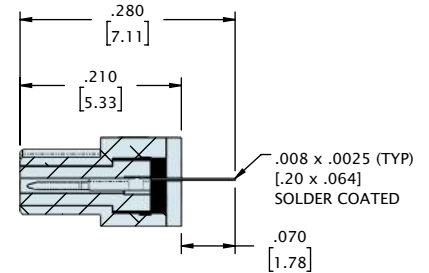
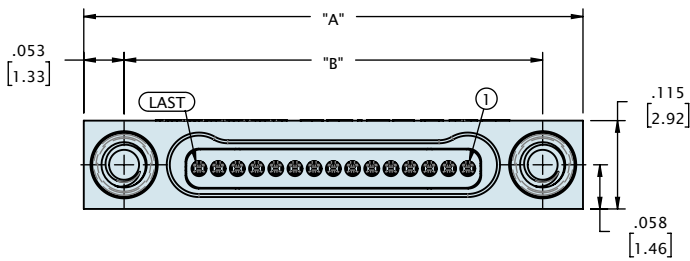
Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW STRAIGHT TAIL (TYPE DD)



SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)

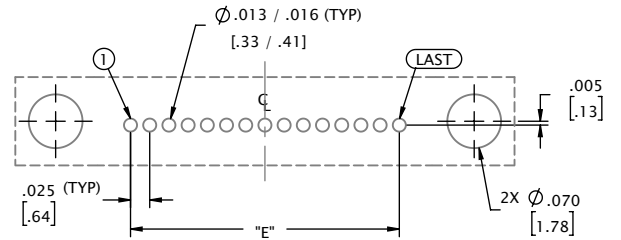
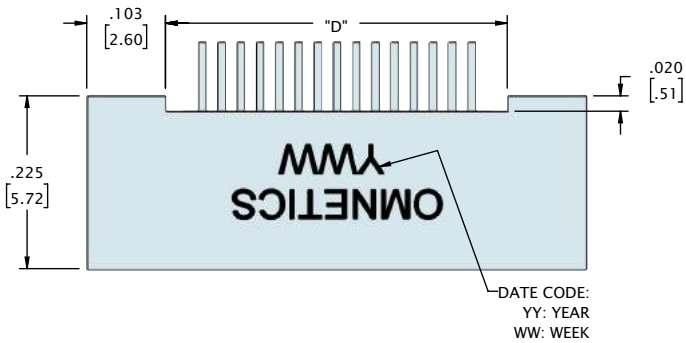


JACKSCREW NOT SHOWN FOR CLARITY

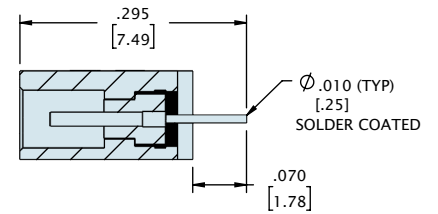
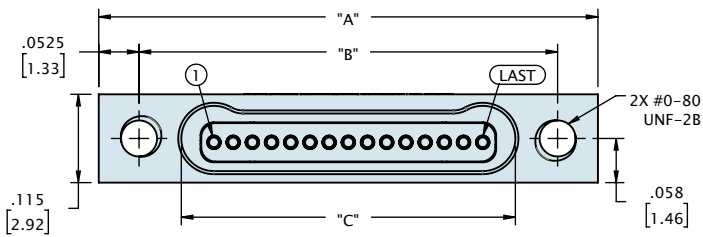
CONTACTS	"A"	"B"	"C"	"D"	"E"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]	.195 [4.95]	.100 [2.54]
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15	.650 [16.51]	.545 [13.84]	.434 [11.02]	.445 [11.30]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]	.595 [15.11]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]	.695 [17.65]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]	.845 [21.46]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]	.995 [25.27]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]	1.345 [34.16]	1.250 [31.75]

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SINGLE ROW STRAIGHT TAIL (TYPE DD)



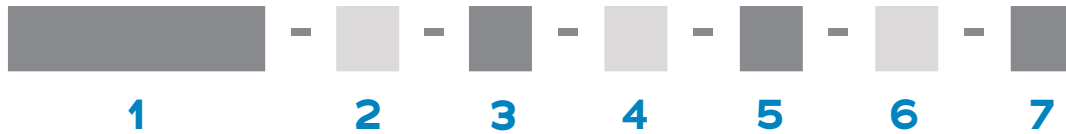
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



CONTACTS	"A"	"B"	"C"	"D"	"E"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.195 [4.95]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.295 [7.49]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.445 [11.30]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.595 [15.11]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.695 [17.65]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.845 [21.46]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.995 [25.27]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.355 [34.42]	1.345 [34.16]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

ORDERING GUIDE



1 Series	MBPS Metal Bi-Lobe Pin Single-Row	MBSS Metal Bi-Lobe Socket Single-Row
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Termination Type	DD Thru-Hole Straight	
4 Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated B Aluminium Shell, Black Anodized T Titanium Shell, Unplated	CD Aluminium shell, Cadmium Plated S Stainless steel Shell, Passivated
5 Common Options	ETH End Threaded Hole, #0-80 NTH Non-Threaded Holes for mounting to the board YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw) HT High Temp. Epoxy CS Customer Supplied Material	
6 Mod Codes	M10 Keyed M50 Space Grade Nano-D, SPT1	M30 Ground Spring M53 Space Grade Nano-D, SPT2
7 Special Instructions	YYY Describe anything that is not covered in standard options	

SINGLE ROW HORIZONTAL THRU-HOLE (TYPE H2)

The **Single Row Bi-Lobe®** H2 nanos are suitable for high-reliability electronic devices in medical, military, and other demanding environments. They are a thru-hole mounted, low-mass ruggedized connector on .025" (.64 mm) centerlines. The thru-hole tails are spread onto a mounting pattern on .050 (1.27 mm) with space for annular rings and routing traces. They feature Omnetics' gold-plated Flex Pin contact system. These durable, lightweight connectors intermate with Omnetics QPL versions of MIL-DTL-32139. They are available with retention screws for a positive lock and come in standard sizes ranging from 5 to 51 positions. Custom configurations are also available.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	87 milliohms (87 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

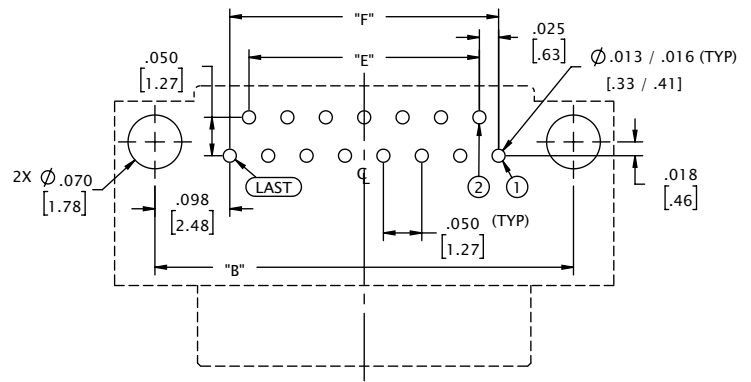
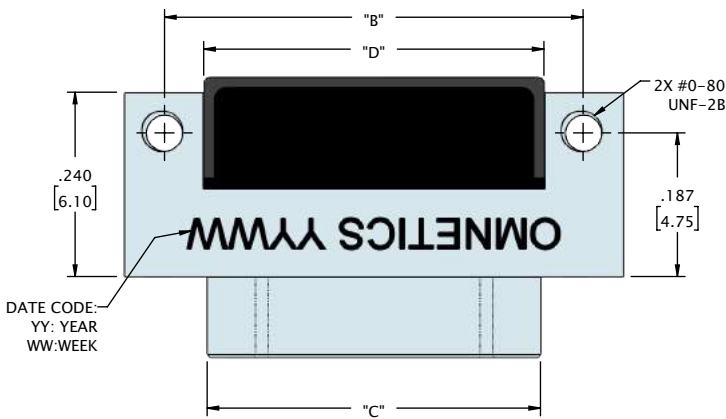
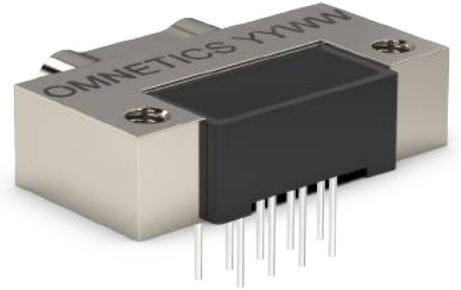
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

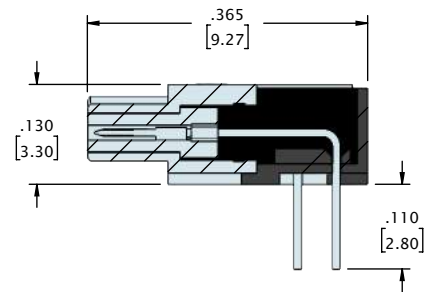
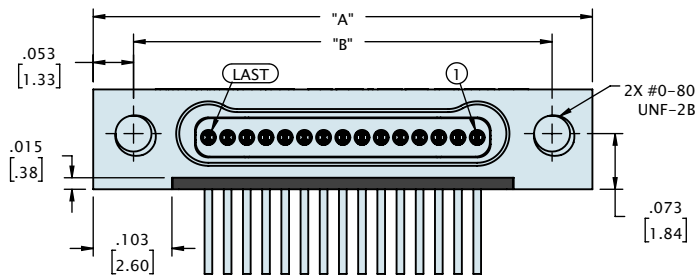
Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW HORIZONTAL THRU-HOLE (TYPE H2)



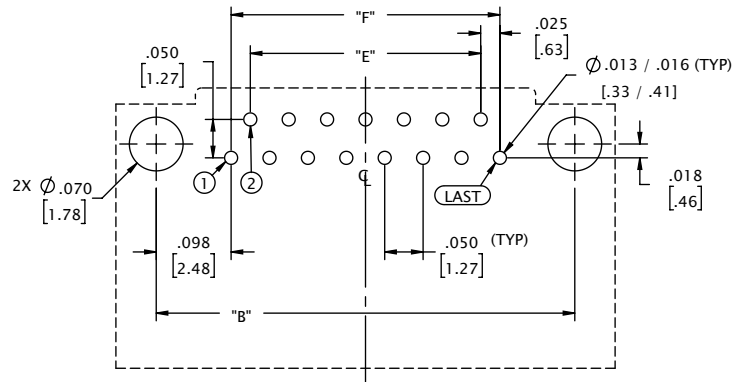
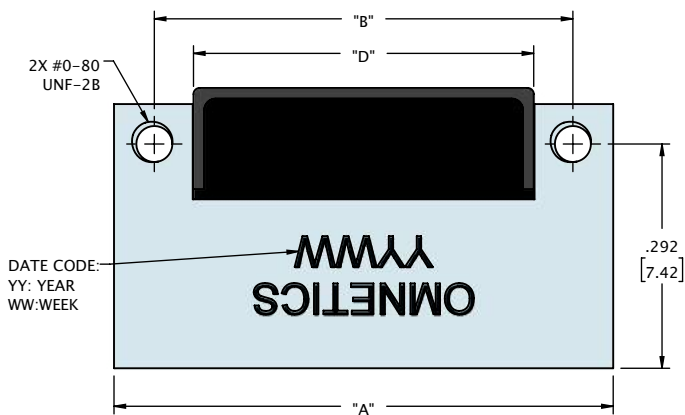
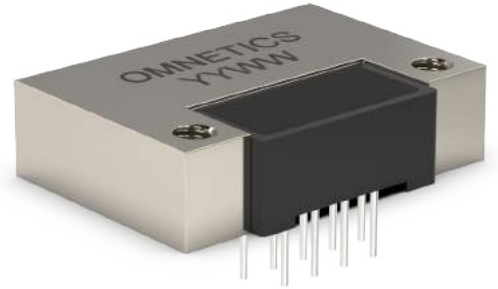
**SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)**



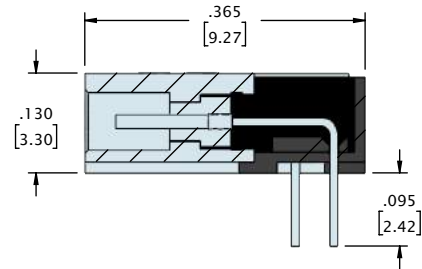
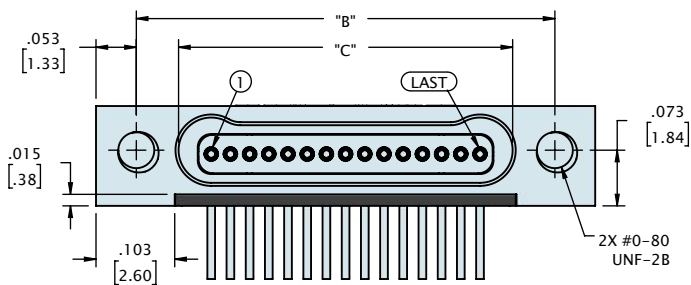
CONTACTS	"A"	"B"	"C"	"D"	"E"	"F"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]	.193 [4.90]	.050 [1.27]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]	.293 [7.44]	.150 [3.81]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]	.443 [11.25]	.300 [7.62]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]	.593 [15.06]	.450 [11.43]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]	.693 [17.60]	.550 [13.97]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]	.843 [21.41]	.700 [17.78]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]	.993 [25.22]	.850 [21.59]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]	1.343 [34.11]	1.200 [30.48]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW HORIZONTAL THRU-HOLE (TYPE H2)



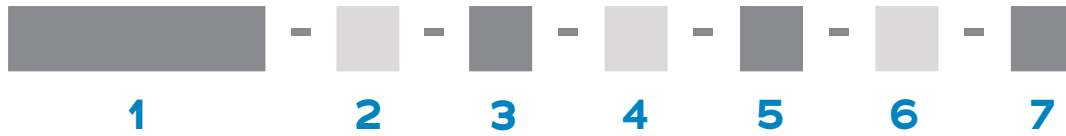
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



CONTACTS	"A"	"B"	"C"	"D"	"E"	"F"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.193 [4.90]	.050 [1.27]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.293 [7.44]	.150 [3.81]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.443 [11.25]	.300 [7.62]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.593 [15.06]	.450 [11.43]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.693 [17.60]	.550 [13.97]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.843 [21.41]	.700 [17.78]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.993 [25.22]	.850 [21.59]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]	1.343 [34.11]	1.200 [30.48]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

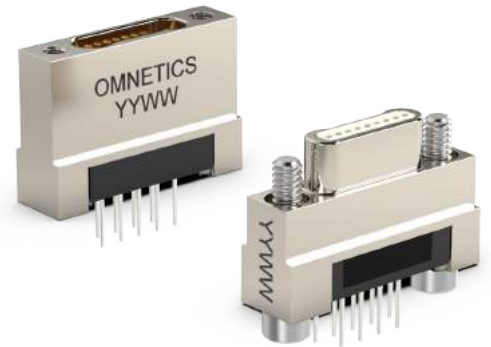
ORDERING GUIDE



1 Series	MBPS Metal Bi-Lobe Pin Single-Row	MBSS Metal Bi-Lobe Socket Single-Row
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Termination Type	H2 Horizontal Thru-Hole	
4 Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated B Aluminium Shell, Black Anodized T Titanium Shell, Unplated	CD Aluminium shell, Cadmium Plated S Stainless steel Shell, Passivated
5 Common Options	ETH End Threaded Hole, #0-80 NTH Non-Threaded Holes For Mounting To The Board YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw) HT High Temp. Epoxy CS Customer Supplied Material	
6 Mod Codes	M10 Keyed M50 Space Grade Nano-D, SPT1	M30 Ground Spring M53 Space Grade Nano-D, SPT2
7 Special Instructions	YYY Describe anything that is not covered in standard options	

SINGLE ROW VERTICAL THRU-HOLE (TYPE V2)

Applications that experience frequent high vibration and shock are served well by Omnetics' **Single Row Bi-Lobe® V2** nanos. This low-mass vertical thru-hole mounted connector has contacts arranged on .025" (.64 mm) centerlines. The thru-hole tails are spread onto a mounting pattern on .050 (1.27 mm) with space for annular rings and routing traces. They feature Omnetics' gold-plated Flex Pin contact system. These durable, lightweight connectors serve the most demanding applications and intermate with Omnetics QPL versions of MIL-DTL-32139. They are available with retention screws for a positive lock and come in standard sizes ranging from 5 to 51 positions. Custom configurations are also available.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	87 milliohms (87 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

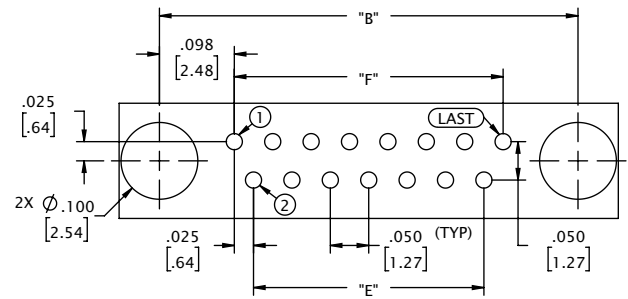
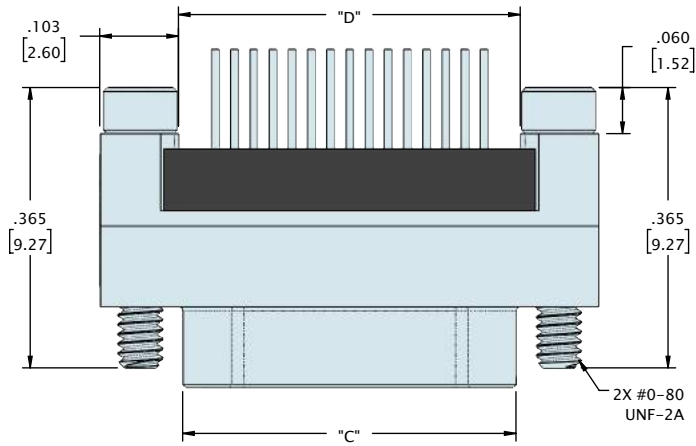
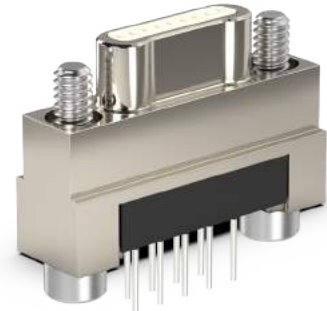
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

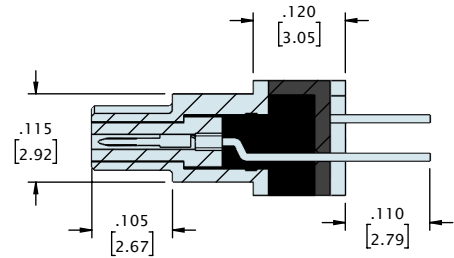
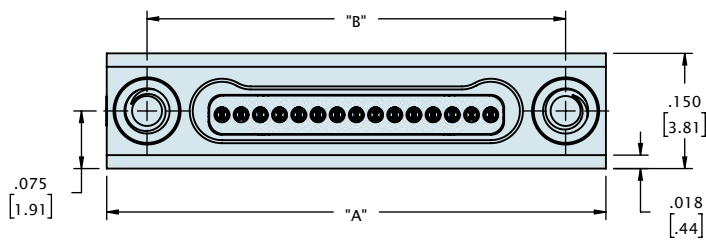
Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW VERTICAL THRU-HOLE (TYPE V2)



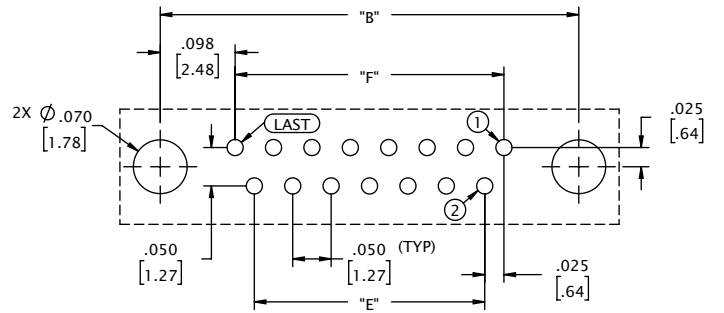
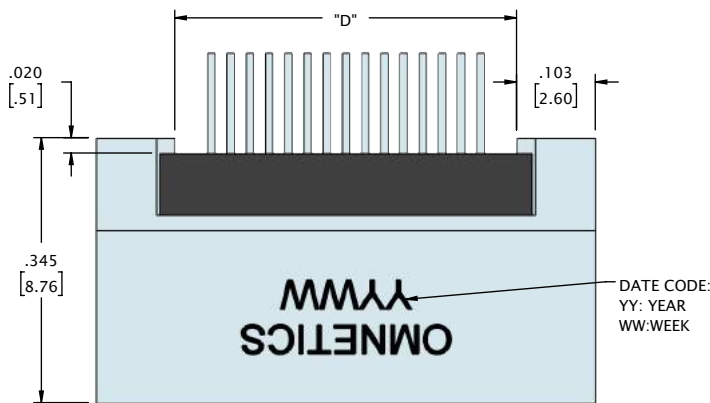
SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)



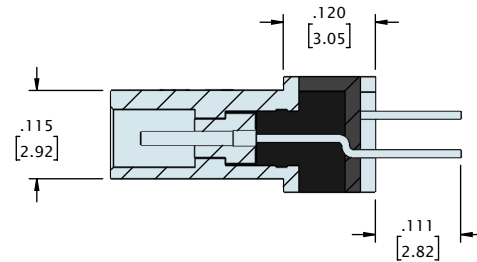
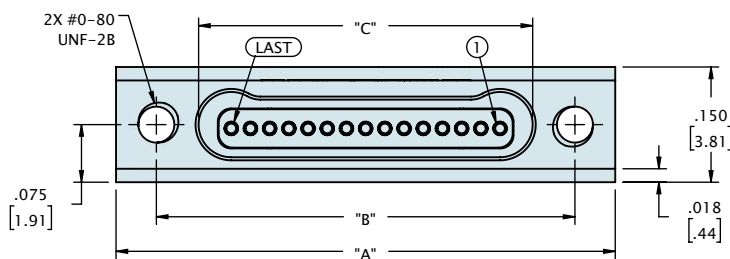
CONTACTS	"A"	"B"	"C"	"D"	"E"	"F"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]	.195 [4.95]	.050 [1.27]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]	.295 [7.49]	.150 [3.81]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]	.445 [11.30]	.300 [7.62]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]	.595 [15.11]	.450 [11.43]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]	.695 [17.65]	.550 [13.97]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]	.845 [21.46]	.700 [17.78]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]	.995 [25.27]	.850 [21.59]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]	1.345 [34.16]	1.200 [30.48]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW VERTICAL THRU-HOLE (TYPE V2)



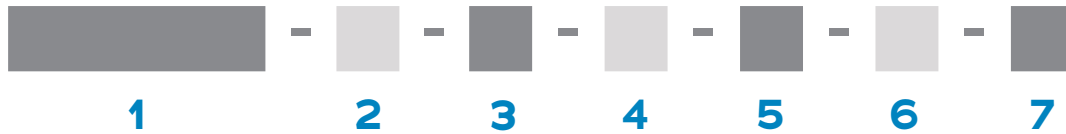
**SUGGESTED PAD LAYOUT
(VIEW FROM MOUNTING SIDE OF BOARD)**



CONTACTS	"A"	"B"	"C"	"D"	"E"	"F"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.195 [4.95]	.050 [1.27]	.100 [2.54]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.295 [7.49]	.150 [3.81]	.200 [5.08]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.445 [11.30]	.300 [7.62]	.350 [8.89]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.595 [15.11]	.450 [11.43]	.500 [12.70]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.695 [17.65]	.550 [13.97]	.600 [15.24]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.845 [21.46]	.700 [17.78]	.750 [19.05]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.995 [25.27]	.850 [21.59]	.900 [22.86]
51	1.550 [39.37]	1.445 [36.70]	1.355 [34.42]	1.345 [34.16]	1.200 [30.48]	1.250 [31.75]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

ORDERING GUIDE



1 Series	MBPS Metal Bi-Lobe Pin Single-Row	MBSS Metal Bi-Lobe Socket Single-Row
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Termination Type	V2 Vertical Thru-Hole	
4 Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated B Aluminium Shell, Black Anodized T Titanium Shell, Unplated	CD Aluminium Shell, Cadmium Plated S Stainless Steel Shell, Passivated
5 Common Options	ETH End Threaded Hole, #0-80 NTH Non-Threaded Holes For Mounting To The Board YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw) HT High Temp. Epoxy CS Customer Supplied Material	EJS End Jack Screw RH RoHS Compliant
6 Mod Codes	M10 Keyed M50 Space Grade Nano-D, SPT1	M30 Ground Spring M53 Space Grade Nano-D, SPT2
7 Special Instructions	YYY Describe anything that is not covered in standard options	

SINGLE ROW PRE-WIRED (TYPE WD)

Omnetics' **Pre-Wired Single Row Bi-Lobe®** nanos feature 30 AWG or smaller sizes of stranded wire. They are assembled using our proprietary semi-automated crimping system, as their very small size requires special care and precision to accomplish a perfect crimp. Each unit is carefully hand-inspected throughout the assembly process. Pre-crimped wires and contacts are potted in place to further protect the integrity of the crimp joint. Designers may specify wire type, size, and color coding to achieve a near-custom part. COTS versions are also available with 18" of color-coded AWG Teflon for quick turnaround. These connectors come in standard sizes ranging from 5 to 51 positions as well as custom configurations. Omnetics also offers full QPL versions of MIL-DTL-32139.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

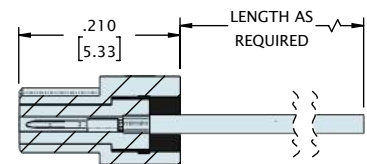
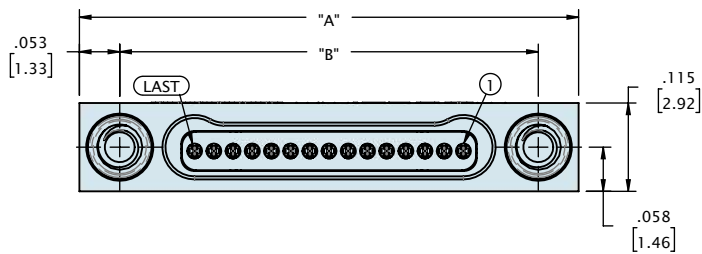
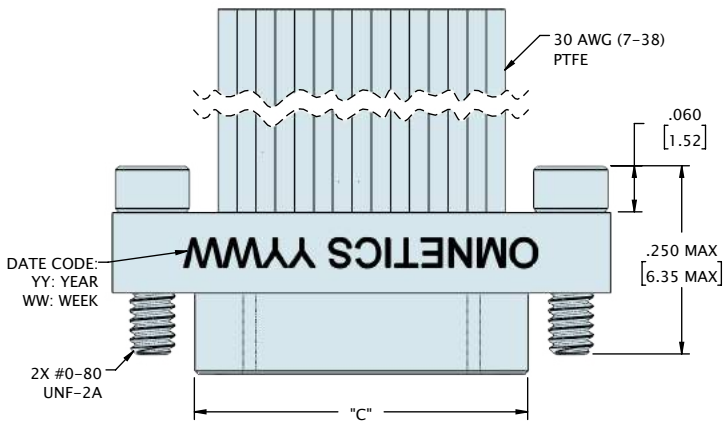
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW PRE-WIRED (TYPE WD)

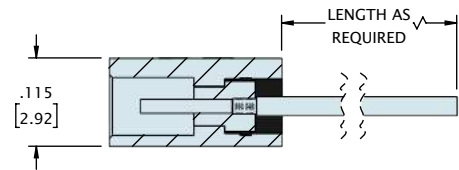
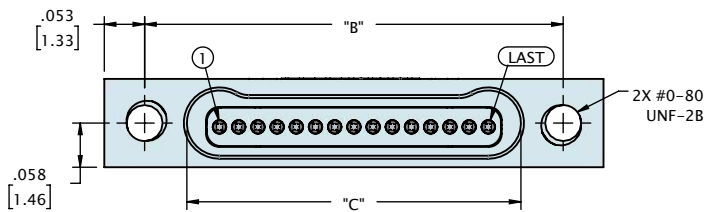
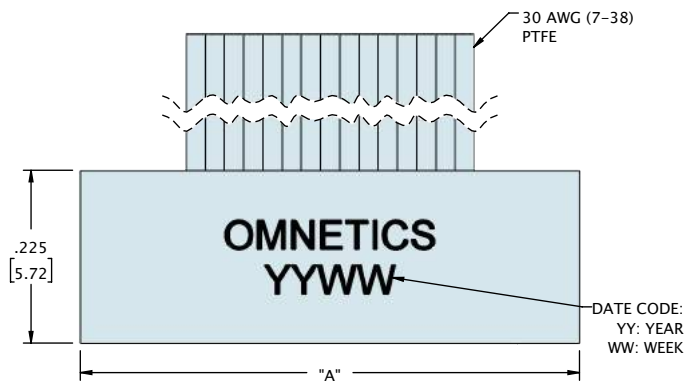


JACKSCREW NOT SHOWN FOR CLARITY

CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW PRE-WIRED (TYPE WD)



CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

ORDERING GUIDE



1 Series	MBPS Metal Bi-Lobe Pin Single-Row	MBSS Metal Bi-Lobe Socket Single-Row
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Termination Type	WD Discrete Wires	
4 Wire Gage	0 30 AWG (STD)	2 32 AWG
5 Wire Type	Q NEMA HP3 (formerly M16878/4 and /6)	XX.X M22759/33 (30 AWG only)
6 Wire Length	18.0 18.00" (STD)	XX.X Custom Length
7 Color Scheme	C 10 Repeating Colors Per MIL STD 681	Y All Other Wire Colors
8 Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated B Aluminium Shell, Black Anodized T Titanium Shell, Unplated	CD Aluminium Shell, Cadmium Plated S Stainless Steel Shell, Passivated
9 Common Options	ETH End Threaded Hole, #0-80 YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw) HT High Temp. Epoxy BS1 Standard Straight Backshell BS3 90/RA Oval BSY Custom Backshell	EJS End Jack Screw RH RoHS Compliant BS2 45 Oval BS4 2 Piece BS CS Customer Supplied Material
10 Shield / Jacket	D Slip-on Braid E Machine Braid F Flexo Braid J Nomex Braid ST Shrink Tube	
11 Mod Codes	M10 Keyed M50 Space Grade Nano-D, SPT1	M30 Ground Spring M53 Space Grade Nano-D, SPT2
12 Special Instructions	YYY Describe anything that is not covered in standard options	

SINGLE ROW JUMPERS (TYPE JUM)

Omnetics' **Single Row Bi-Lobe[®]** harnesses are built to order by Omnetics to ensure maximum flexibility in wire type, size, and color-coding. They are designed to accommodate 30 AWG and smaller stranded wire and feature .025" (.64) centerlines, which makes them an excellent choice for routing multiple lines through confined spaces. They feature Omnetics' gold-plated Flex Pin contact system. Shell material options include aluminum, titanium, and stainless steel, with custom plating options available upon request. These connectors are available in standard sizes ranging from 5 through 51 positions, as well as custom configurations.



Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
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 @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

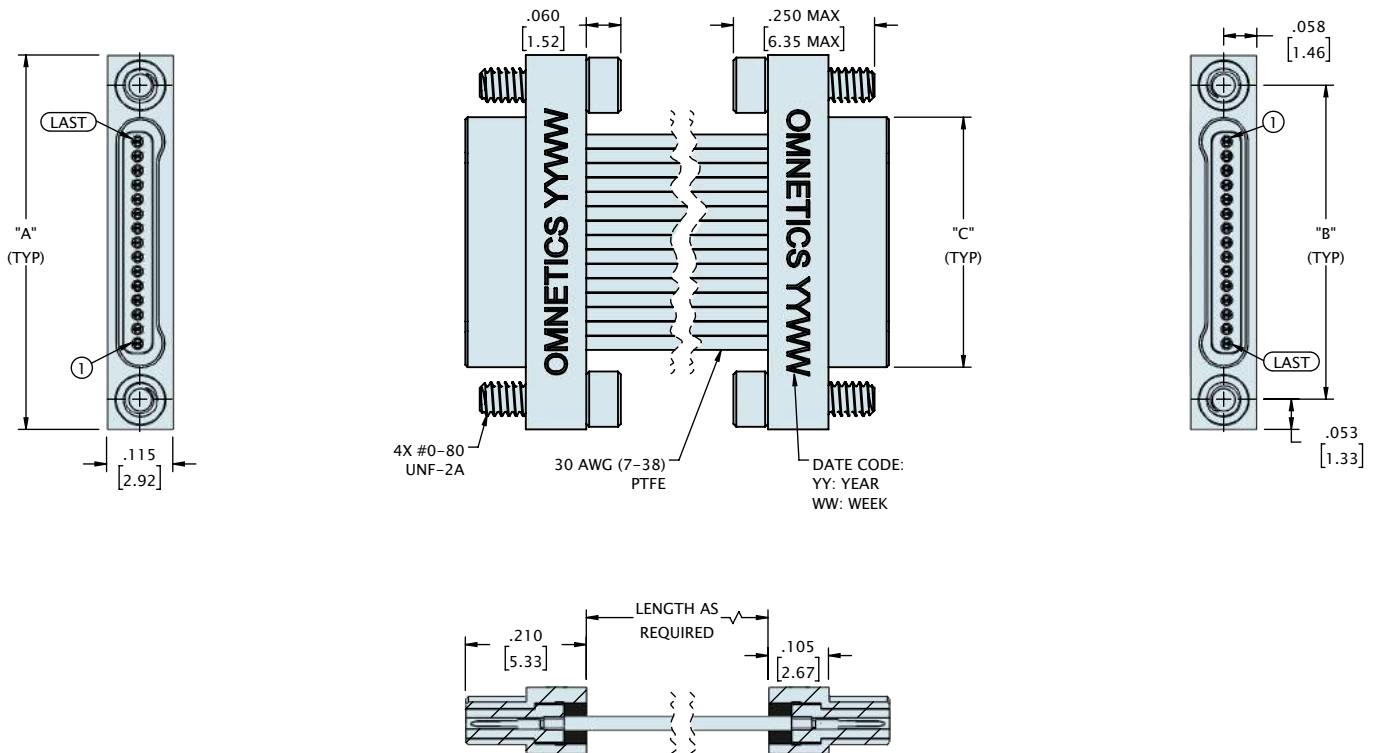
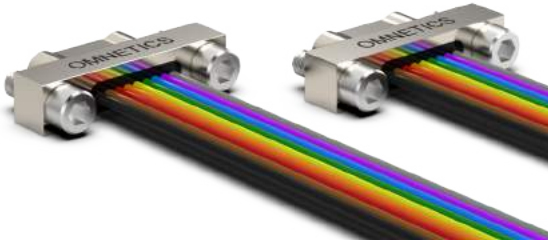
Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

SINGLE ROW MALE TO MALE JUMPERS (TYPE JUM)

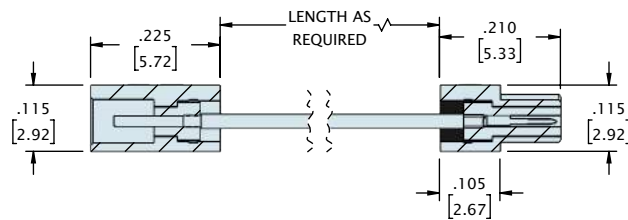
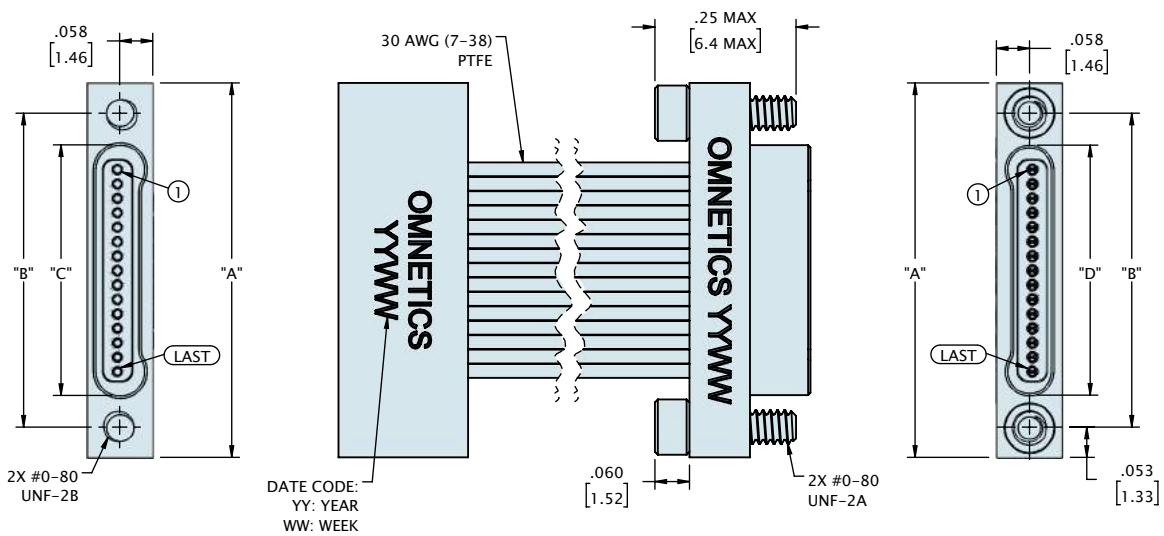
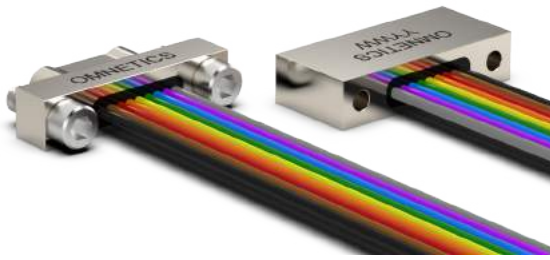


JACKSCREWS HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW MALE TO FEMALE JUMPERS (TYPE JUM)

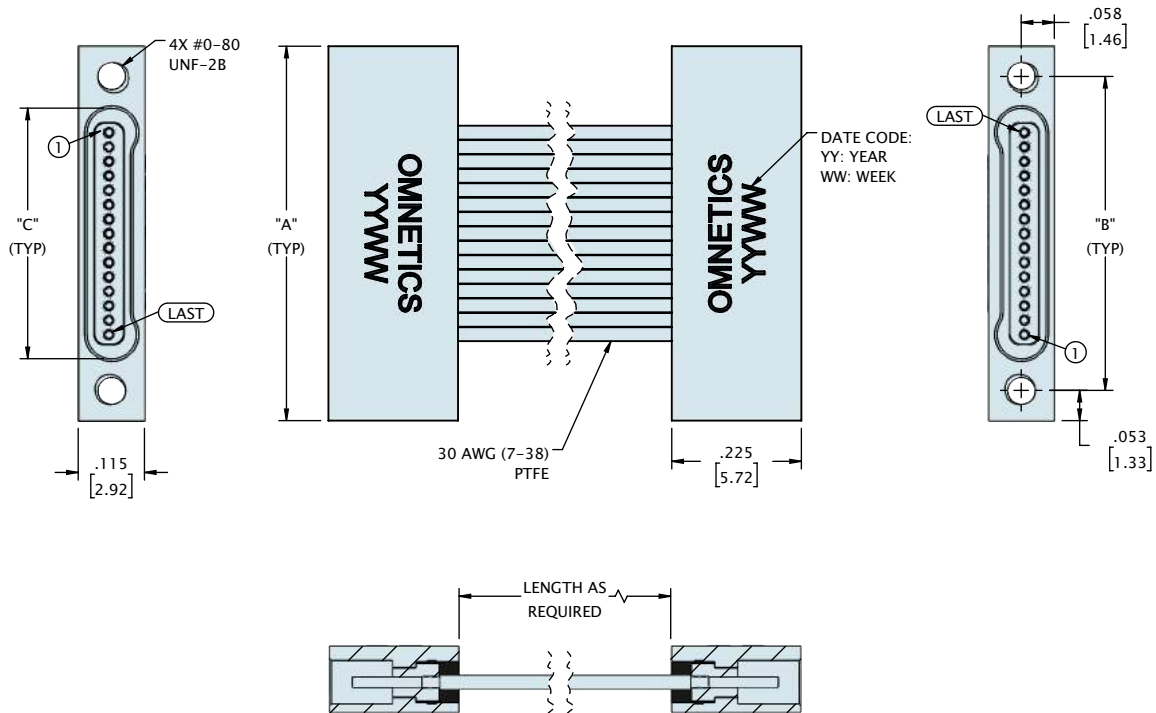
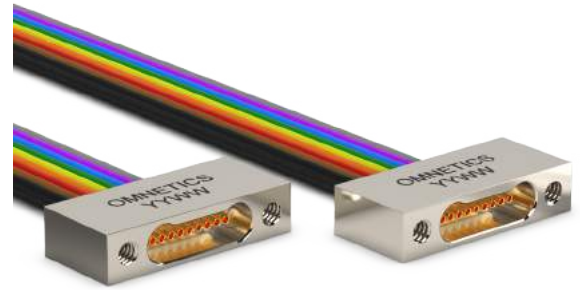


JACKSCREWS HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"	"D"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.184 [4.67]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.284 [7.21]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.434 [11.02]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.584 [14.83]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.684 [17.37]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.834 [21.18]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.984 [24.99]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]	1.334 [33.88]

DIMENSIONS IN [] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

SINGLE ROW FEMALE TO FEMALE JUMPERS (TYPE JUM)

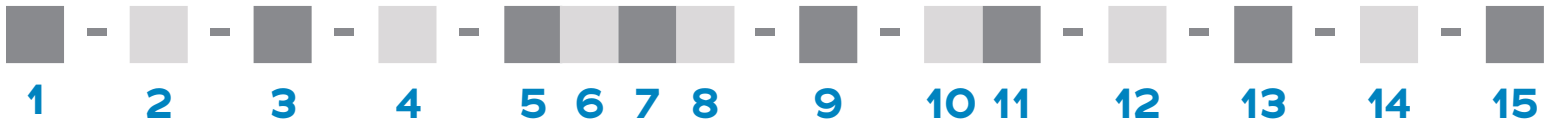


CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]
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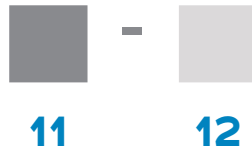
SINGLE ROW JUMPERS (TYPE JUM)

ORDERING GUIDE



1 Series	JUM Jumpers	
2 Number Of Contacts	05 09 15 21 25 31 37 51	
3 Connector 1	MBPS Metal Bi-Lobe Pin Single Row	MBSS Metal Bi-Lobe Socket Single Row
4 Connector 2	MBPS Metal Bi-Lobe Pin Single Row	MBSS Metal Bi-Lobe Socket Single Row
5 Termination	WD Discrete Leadwire WC Cable WX Multiple Wire Types TW Twisted Wires	
6 Wire AWG	0 30 AWG 2 32 AWG	
7 Wire Type	Q NEMA HP3 R M22759/11 S M22759/33 X Other Wire Types	
8 Wire Length	18.0 XX.X	
9 Color Coded	C 10 Repeating Colors Per MIL STD 681 Y All Other Wire Colors	
10 Shell / Material Finish	N Aluminum Shell, Electroless Nickel Plated T Titanium Shell, Unplated B Aluminium Shell, Black Anodized CD Aluminium Shell, Cadmium Plated BN Aluminium Shell, Black Nickel Plated P Stainless Steel Shell, Passivated	
11 Hardware	See table page 101	
12 Common Options	See table page 101	
13 Shield / Jacket	D Slip On Metal Braid E Machine Braid F Flexo Braid J Nomex Braid ST Shrink Tube	
14 Mod Codes	M50 Space Grade Micro-D, SPT1 M53 Space Grade Micro-D, SPT2	
15 Special Instructions	YYY Describe anything that is not covered in standard options	

ORDERING GUIDE



11 Hardware

- 00** None, Ø .092 Hole (STD)
- 01** Fixed Jack-Posts (STD)
- 02** Jackscrews, STD Length, Hex Head (STD)
- 03** Jackscrews, STD Length, Slotted
- 04** Jackscrews, Long, Hex
- 05** Jackscrews, Long, Slotted
- 06** Float Mount, Front Mounted
- 07** Float Mount, Rear Mounted
- 08** Non-removable
- 13** Fixed Jackspots (STD)
- 14** Jackscrews STD Length, Hex Head (STD)
- 15** One set of each, Fixed Jackspots & Jackscrews, Standard Length, Hex Head (STD)
- YY** Non Standard Hardware

12 Common Options

- | | |
|--------------------------------------|--|
| ETH End Threaded Hole, #0-80 | EJS End Jack Screw |
| HT High Temp. Epoxy | RH RoHS Compliant |
| FP Front Panel Mount | SR Strain Relief |
| CS Customer Supplied Material | RP Rear Panel Mount |
| IS Inline Shell | OR O-Ring |
| OM Overmold | BS1 Standard Straight Backshell |
| BS2 45 Oval | BS3 90/RA Oval |
| BS4 2 Piece BS | BSY Custom Backshell |