EMI
CATALOG

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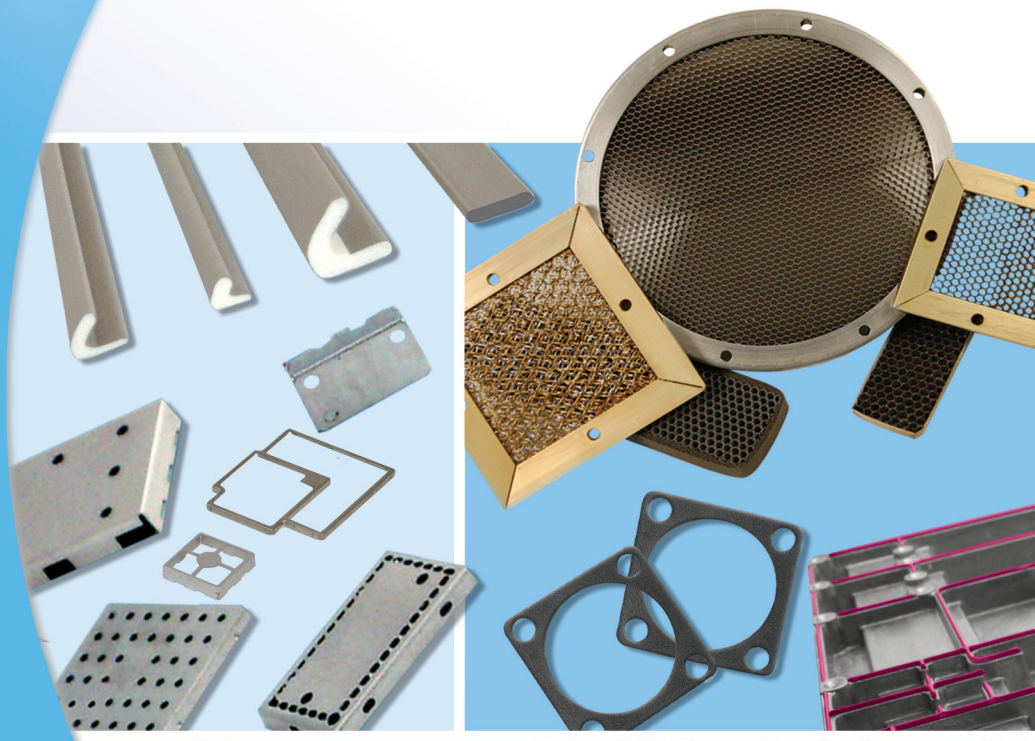

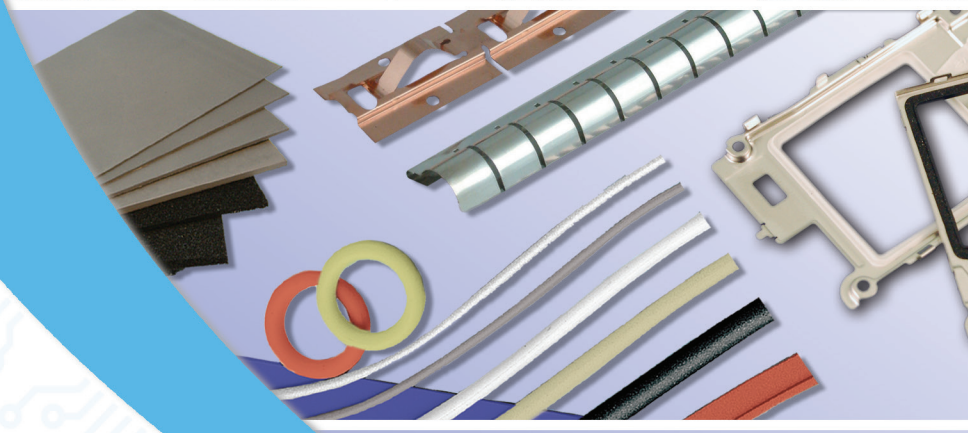

Laird™

ABOUT **LAIRD**

Laird is a global technology business focused on enabling wireless communication and smart systems, and providing components and systems that protect electronics. Laird operates through two divisions, Wireless Systems and Performance Materials. Wireless Systems solutions include antenna systems, embedded wireless modules, telematics products and wireless automation and control solutions. Performance Materials solutions include electromagnetic interference shielding, thermal management and signal integrity products. As a leader in the design, supply and support of innovative technology, our products allow people, organisations, machines and applications to connect effectively, helping to build a world where smart technology transforms the way of life. Custom products are supplied to major sectors of the electronics industry including the handset, telecommunications, IT, automotive, public safety, consumer, medical, rail, mining and industrial markets. Providing value and differentiation to our customers though innovation, reliable fulfilment and speed, Laird PLC is listed and headquartered in London, and employs over 9,000 people in more than 58 facilities located in 18 countries.

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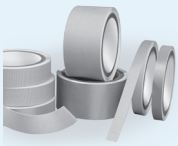
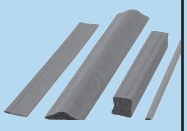
Laird™

FABRIC-OVER FOAM
PRODUCT SELECTION GUIDE

Product Type	Material Designation		Material Type: Metal Plating	Base Material / Fabric Type: Taffeta	Ripstop	Mesh	Non-Woven
			NiCu	Plain Weave Good Shielding Common Use	Ripstop Weave Good Shielding High Abrasion	Knitted Breathability	Bonded Fiber High Shielding Sturdy/Firm
FABRIC TAPES							
Single Sided		86726	X	X			
		86785	X	X			
		86203	X	X			
		86205	X	X			
		87580	X	X			
		86750	X	X			
		PNW	X				X
		NNW	X				X
Double Sided		DN05A	X				X
		DT17A	X	X			
WRAPPED GASKETS							
FOF, Conductive fabric wrapped over non-conductive foam gasketing		51H	X	X			
		51L	X	X			
		501	X	X			
		51G	X		X		
		51Y	X			X	
		T1G	X		X		
		R1G	X		X		
		221	X	X			
		HIK	X		X		
		HIL	X	X			
		51M		X			
CONDUCTIVE FOAM							
CF, Layered and fully conductive foam		G1W	X			X	

High Flex Tape Numbering Key

XXXXX XXXX X XXXX

Product Type — Material Width — Size Option — Material Length

			Material Thickness	Specifications			Application Specific	
Foam	PSA Attachment Method		(mm)	Temperature	UL Flame	Compression Set	Application Differentiation	Color
Core for Wrapped Gaskets	Acrylic Based Adhesive			Operating Limit		% of Original Height at 70°C		
	CONDUCTIVE		0.13	80°C	-	N/A	CABLE WRAPPING	NICKEL
	CONDUCTIVE		0.12	80°C	-	N/A	GENERAL USE	NICKEL
	CONDUCTIVE		0.10	80°C	-	N/A	CABLE WRAPPING	BLACK
	CONDUCTIVE		0.09	80°C	-	N/A	GENERAL USE	BLACK
	CONDUCTIVE		0.13	80°C	UL510	N/A	UL REQUIRED	GRAY OR BLACK
	CONDUCTIVE		0.08	80°C	-	N/A	THIN APPLICATIONS	NICKEL
	CONDUCTIVE		0.40	80°C	-	N/A	HIGH SHIELDING/ THICK	NICKEL
	CONDUCTIVE		0.60	80°C	-	N/A	HIGH SHIELDING/ THICK	NICKEL
	CONDUCTIVE		0.05	80°C	-	N/A	DOUBLE SIDED	NICKEL
	CONDUCTIVE		0.17	80°C	-	N/A	DOUBLE SIDED	NICKEL
PU	OPTIONAL WITH STANDARD OR CONDUCTIVE	SEE PROFILE SELECTION LIST		70°C	UL94V0	< 20	STANDARD	NICKEL
PU				70°C	UL94V0	< 20	STANDARD	BLACK
PU				70°C	-	< 20	NON-UL	ni
PU				70°C	UL94V0	< 20	RIPSTOP FABRIC	ni
PU				70°C	UL94V0	< 20	MESH / BREATHABLE	NICKEL
PU				70°C	UL94V0	< 15	LOWER COMPRESS	NICKEL
PU				85°C	UL94V0	< 20	HIGHER TEMP	NICKEL
PU				70°C	UL94HB	< 20	MOISTURE / FIRM	NICKEL
PU				70°C	UL94V0	*	COMPLEX / 'C' SHAPES	NICKEL
PU				70°C	UL94V0	*	COMPLEX / 'C' SHAPES	BLACK
PU				70°C	UL94V0	< 20	NON-EMI	WHITE
PU	STANDARD CONDUCTIVE	1.0, 1.5, 2.0, 2.5, 3.2		70°C	UL94V0	< 20	Z-AXIS CONDUCTIVITY / COMPLEX DIE CUTS	NICKEL

FOF Numbering Key

4693 - PA - 51H - 01200

Profile Shape & Size | **Attachment & Part Specific Details** | **Core Materials** H=Sculpted Urethane 5=Soft Urethane | **Flame Rating** 1=UL94 V0 | **Fabric Cover** H=Ni/Cu Taffeta | **Part Length**

FABRIC-OVER FOAM
METALLIZED SHIELDING GASKETS

Laird is a fully integrated manufacturer of profile and Input/Output (I/O) EMI shielding gaskets. The metallized Fabric-Over-Foam product line has been expanded greatly due to our committed efforts in new product development and meeting or surpassing regulatory requirements.

This catalog is designed to provide helpful information to engineers on our expanded product line. In this section, you will find benefits for Fabric-Over-Foam gaskets, material options and an extensive list of profile and I/O sizes and configurations.

Laird specializes in quick turnaround of custom shapes and sizes of EMI shielding gaskets. If you don't find exactly what you need, our engineers will help you design the right solution to your shielding problem.

A sampling for standard profiles are shown; custom configurations and sizes can be designed to meet your specific requirements. Profiles are shown in ascending order by height (starting on page 58).

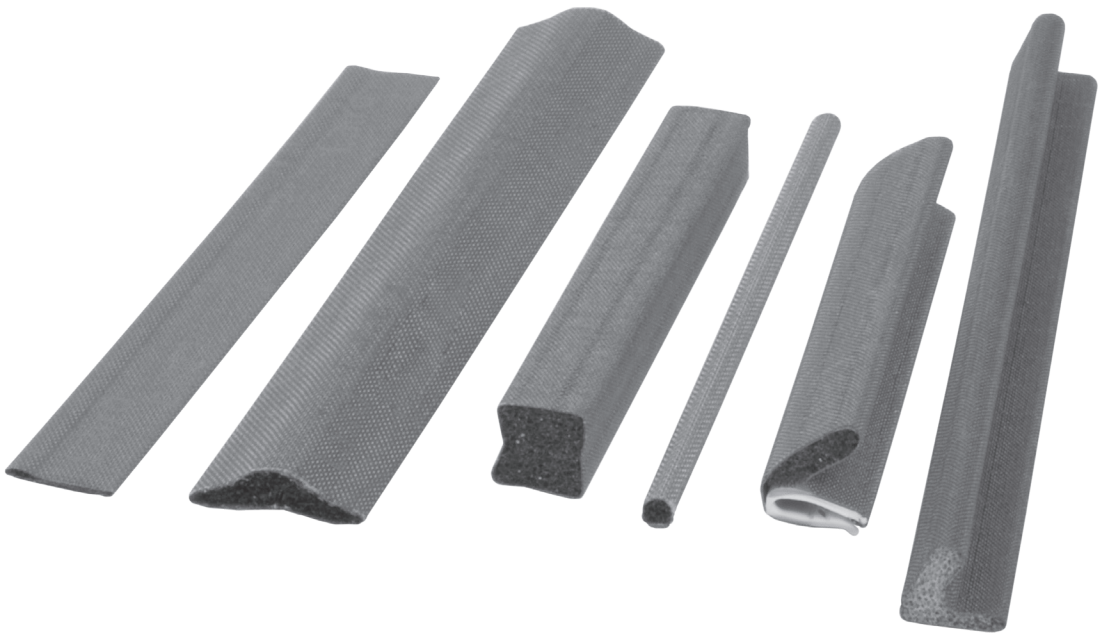
The recommended operating compression for Fabric-Over-Foam EMI Gaskets will vary depending on the shape and size of the particular gasket.

Typically, D-Shaped, Rectangular Shaped, and Square Shaped Fabric-Over-Foam EMI Gaskets should be compressed between 30% and 50% of the foam height.

Similarly, C-Shaped Fabric-Over-Foam EMI Gaskets should typically be compressed between 50% and 75% of the gasket height.

Force Displacement Resistance (FDR) graphs are available upon request. Please contact engineering department at Laird when unsure.

Certain combinations of materials may not be available for all Profiles or I/Os. Please consult the Engineering Department at Laird when unsure.

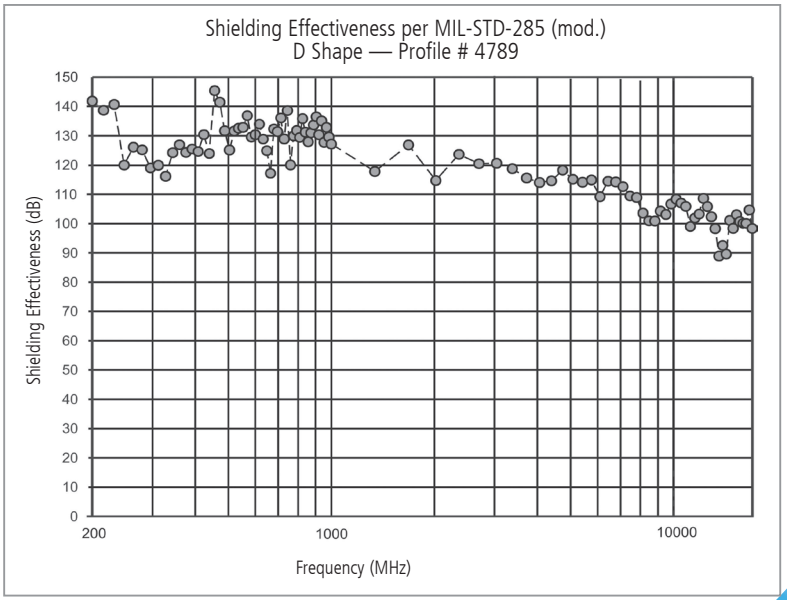


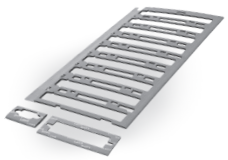
FABRIC-OVER FOAM
METALLIZED SHIELDING GASKETS

BENEFITS OF FABRIC-OVER-FOAM GASKETS

- Shielding effectiveness of >100 dB across a wide spectrum of frequencies (see figure 2).
- Extremely low compression forces allow for use of lighter materials (see figure 1).
- Low Surface Resistivity as low as 0.07 ohms/square dependent on the fabric. Fabric-Over-Foam gaskets provide improved conductivity (ASTM F390).
- A wide range of flame retardant gaskets are available (UL recognized per UL94 V0 or UL94 HB). More information is available at ul.com.
- Abrasion resistant metallized fabrics show virtually no degradation in shielding performance.
- Urethane core provide low compression set ensuring long-term reliability of gasket performance. Contact Engineering for profile specific data.
- Service temperatures from -40°F to 158°F (-40°C to 85°C).
- Available in Nickel/Copper (Ni/Cu) and Tin/Copper (Sn/Cu) to ensure galvanic compatibility with a wide variety of host materials. Both versions display no significant performance degradation after environmental exposure per the Accelerated Aging Test (ASTM B845-93 Method H).
- Prototype samples can be provided quickly utilizing laser technology, CAD/CAM equipment, and customer supplied drawings in DWG®, DXF®, IGS, PRT®, DRW®, STP®, and CT® file formats.
- Profile and I/O gaskets are available with a variety of pressure sensitive adhesive (PSA) tapes, including Easy Peel® with extra wide release liner to facilitate quick assembly.
- Profile gaskets can be cut to specified lengths, kiss-cut on release liner, or mitered to form frame configurations.
- UL94 V0 and Halogen-free gaskets to meet stringent environmental / safety requirements

FIGURE 2





ECOGREEN™
ENVIRONMENTALLY FRIENDLY FABRIC-OVER-FOAM SHIELDING GASKETS

Laird is pleased to introduce the next generation in RoHS-compliant EMI shielding technology.

While Laird Fabric-Over-Foam EMI gaskets are RoHS compliant, we are proactively strengthening our compliancy by engineering halogen-free EcoGreen™ shields.

Not only are the patented EcoGreen™ shields environmentally friendly, they offer high EMI shielding effectiveness, extremely low compression forces, abrasion-resistant metallized fabrics, large service temperature ranges, and multiple profile/gasket options.

Laird shields are flame retardant and pass the stringent UL94-VO burn test and the whole gasket is Halogen-free.

ENVIRONMENT & SAFETY

- Halogen-free and RoHS compliant; per the IEC 61249-2-21 standard
- UL94 V0

PERFORMANCE AND BENEFITS

- Profiles and I/O gaskets are available with a pressure sensitive adhesive (PSA) tape
- Profiles can be cut to specified lengths, kiss-cut release liner or mitered to form frame configurations

HIGH SHIELDING EFFECTIVENESS

- Shielding effectiveness of > 100 dB
- Extremely low compression forces allow lighter weight materials, with less fastening and hinge hardware.
- Low surface resistivity as low as <0.07 ohms/square provides improved conductivity (ASTM F390)
- Service temperature range from - 40°F to 158°F (- 40°C to 70°C)

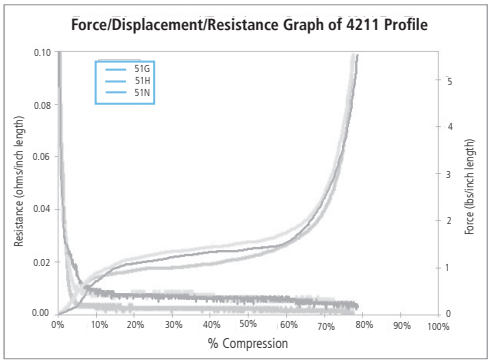
APPLICATIONS

- Computer servers
- Desktop computers
- Digital cameras
- Internal/external hard drives
- Liquid Crystal Displays (LCDs)
- Medical equipment
- Notebook computers
- Plasma Display Panels (PDPs)
- Printers
- Set-top boxes
- Telecommunications enclosure cabinets

AGENCY APPROVALS

- UL designation V0 041
- UL file #OCDT2.E170327
- More information is available at ul.com

FIGURE 1



Fabric

Fabric Type	Metal Coating	Conductivity	Application	Benefits
Ripstop	Ni/Cu	<0.07 ohms/square	I/O or Profile Gaskets	Flame retardant, high abrasion resistance
Taffeta	Ni/Cu	<0.07 ohms/square	I/O or Profile Gaskets	Flame retardant, abrasion resistant
Knit Mesh	Ni/Cu	<0.10 ohms/square	I/O or Profile Gaskets	Low cost, flame retardant
Black Taffeta	Ni/Cu	<0.07 ohms/square	I/O or Profile Gaskets	Black UL94V0, similar properties to Taffeta fabric
High Performance Taffeta	Ni/Cu	<0.05 ohms/square	I/O or Profile Gaskets	EMI tape, highest shielding effectiveness

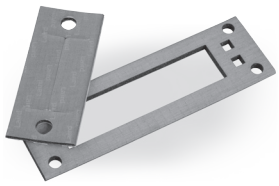
Foam

Foam Type	Compression Set (ASTM D 3574)	Color	Application	Benefits
Urethane (Polyester)	5-10%	Charcoal	I/O or Profile Gaskets	Simple, moderate shapes, low compression force/compression set, flame retardant

Pressure Sensitive Adhesive

Pressure Sensitive Adhesive	Thickness	Benefits
Acrylic Non-conductive	0.005"	High Peel Strength, Temperature Resistant
Acrylic Conductive	0.004"	Electrically Conductive in Z-Axis Direction

FABRIC-OVER-FOAM I/O GASKET SELECTION GUIDE



Part Number Example:

Digits: 1 2 3 4 5 6 7 8 9 10 11 12 13 14

4693 - PA - 51H - 0120 0

Profile Shape & Size

Attachment & Part Specific Details

Core Materials
5 = Soft Urethane
R = High Temp
T = Low Compression Set / Force
0 = No Foam
H = Sculpted Foam / 'C' Shapes

Flame Rating
0 = Not Rated
1 = UL V0

Fabric Cover
8, K, B = Ni/Cu Ripstop
Y, 6 = Ni/Cu Knit Mesh
H = Ni/Cu Taffeta
L = Black Ni/Cu Taffeta

Part Length

* Certain combinations of materials may not be available for all Profiles or I/Os. Please consult the Engineering Department at Laird when unsure.

See back cover for contact information.

DIGITS 1 THROUGH 4

Designate profile number. Select profile or I/O and sizes from pages 58-61 (Profile) or 62-64 (I/O).

DIGITS 5 THROUGH 6

Designate part-specific attributes of the product including cutouts, notches, tape and a variety of other customized details. PA STD PSA / PB STD PSA W/ ERL / PC STD CPSA

DIGITS 7 THROUGH 9

Designate the core materials, flame rating and fabric cover combinations. Select these options from the recommended list in the table below.

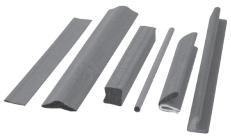
DIGITS 10 THROUGH 14

Designate the part length in inches to two decimal places. For the example shown above, the "01200" denotes a 12.00 inch (304,8 mm) long gasket).

Fabric	Non-Rated RoHS Compliant	UL94-VO Rated RoHS Compliant	UL94-VO Rated RoHS Compliant Halogen-Free EcoGreen™	Typical Apps	Shielding
Ni/Cu Mesh	506		51N	Compros Only	Medium
Ni/Cu Taffeta	501		51H	Comp/Shear	High
Ni/Cu NRS	50B		51G	Comp/Shear	High
Ni/Cu NRS		H1K		C-Fold Only	High
Sn/Cu NRS			51S	Comp/Shear Harsh Environment	High
Ni/Cu NRS			T1G	Low Compression Set / Force	High
Ni/Cu NRS			R1G	85°C Applications	High
Ni/Cu Black Taffeta			51L	Visible Applications	High

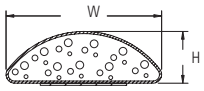
RoHS

All parts listed in this catalog are lead free and RoHS compliant.



FABRIC-OVER-FOAM PROFILE SELECTION GUIDE

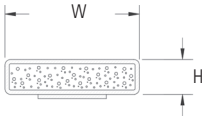
D-SHAPED



Profile Number	inches (mm) H	inches (mm) W
4584	0.040 (1,0)	0.150 (3,8)
4320	0.050 (1,3)	0.140 (3,6)
4541	0.050 (1,3)	0.250 (6,4)
4358	0.060 (1,5)	0.098 (2,5)
4184	0.060 (1,5)	0.150 (3,8)
4548	0.060 (1,5)	0.250 (6,4)
4356	0.070 (1,8)	0.180 (4,6)
4052	0.080 (2,0)	0.080 (2,0)
4283	0.080 (2,0)	0.157 (4,0)
4181	0.080 (2,0)	0.394 (10,0)
4053	0.090 (2,3)	0.090 (2,3)
4912	0.090 (2,3)	0.150 (3,8)
4375	0.094 (2,4)	0.200 (5,1)
4240	0.100 (2,5)	0.300 (7,6)
4742	0.120 (3,0)	0.150 (3,8)
4202	0.120 (3,0)	0.250 (6,4)
4078	0.120 (3,0)	0.360 (9,1)
4090	0.125 (3,2)	0.090 (2,3)

Profile Number	H inches (mm) H	W inches (mm) W
4906	0.130 (3,3)	0.188 (4,8)
4692	0.140 (3,6)	0.250 (6,4)
4228	0.150 (3,8)	0.150 (3,8)
4123	0.150 (3,8)	0.354 (9,0)
4112	0.158 (4,0)	0.433 (11,0)
4120	0.160 (4,1)	0.240 (6,1)
4295	0.170 (4,3)	0.250 (6,4)
4609	0.180 (4,6)	0.400 (10,2)
4787	0.200 (5,1)	0.250 (6,4)
4134	0.197 (5,0)	0.394 (10,0)
4607	0.200 (5,1)	0.480 (12,2)
4242	0.250 (6,4)	0.250 (6,4)
4542	0.248 (6,3)	0.291 (7,4)
4789	0.250 (6,4)	0.375 (9,5)
4368	0.299 (7,6)	0.272 (6,9)
4105	0.375 (9,5)	0.500 (12,7)
4060	0.500 (12,7)	0.500 (12,7)

RECTANGLE SHAPED

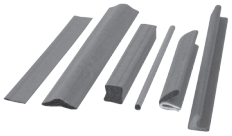


Profile Number	inches (mm) H	inches (mm) W
*4570	0.015 (0,4)	0.200 (5,1)
*4577	0.015 (0,4)	0.276 (7,0)
*4572	0.015 (0,4)	0.394 (10,0)
*4300	0.017 (0,4)	0.826 (21,0)
*4058	0.020 (0,5)	0.157 (4,0)
*4569	0.020 (0,5)	0.196 (5,0)
*4500	0.020 (0,5)	1.217 (30,9)
*4501	0.020 (0,5)	1.970 (50,0)
*4850	0.030 (0,8)	0.900 (22,9)
4245	0.040 (1,0)	0.120 (3,0)
4223	0.040 (1,0)	0.157 (4,0)
4220	0.040 (1,0)	0.200 (5,1)
4404	0.040 (1,0)	0.236 (6,0)
4215	0.040 (1,0)	0.275 (7,0)
4208	0.040 (1,0)	0.395 (10,0)
4219	0.040 (1,0)	0.510 (13,0)
4259	0.040 (1,0)	0.600 (15,2)
4677	0.040 (1,0)	0.709 (18,0)
4532	0.040 (1,0)	0.750 (19,1)
4597	0.040 (1,0)	0.900 (22,9)
4297	0.040 (1,0)	1.000 (25,4)
4363	0.040 (1,0)	1.126 (28,6)
4179	0.040 (1,0)	1.431 (36,3)
4512	0.040 (1,0)	1.640 (41,7)
4270	0.040 (1,0)	1.770 (45,0)
4573	0.040 (1,0)	1.840 (46,7)
4394	0.040 (1,0)	3.300 (83,8)
4246	0.050 (1,3)	0.090 (2,3)
4088	0.050 (1,3)	0.220 (5,6)
4086	0.060 (1,5)	0.850 (21,6)
4273	0.060 (1,5)	0.125 (3,2)
4056	0.060 (1,5)	0.200 (5,1)
4157	0.060 (1,5)	0.280 (7,1)
4629	0.060 (1,5)	0.394 (10,0)
4051	0.060 (1,5)	0.500 (12,7)
4455	0.060 (1,5)	0.551 (14,0)
4430	0.060 (1,5)	0.591 (15,0)
4626	0.060 (1,5)	0.608 (15,4)
4606	0.060 (1,5)	0.620 (15,7)
4579	0.060 (1,5)	0.650 (16,5)
4164	0.060 (1,5)	0.750 (19,1)

Profile Number	inches (mm) H	inches (mm) W
4170	0.060 (1,5)	0.866 (22,0)
4225	0.060 (1,5)	0.900 (22,9)
4080	0.060 (1,5)	1.000 (25,4)
4599	0.060 (1,5)	1.063 (27,0)
4518	0.060 (1,5)	1.235 (31,4)
4079	0.060 (1,5)	1.330 (33,8)
4161	0.060 (1,5)	1.370 (34,8)
4163	0.060 (1,5)	1.400 (35,6)
4591	0.060 (1,5)	1.455 (37,0)
4091	0.060 (1,5)	1.525 (38,7)
4628	0.060 (1,5)	1.575 (40,0)
4231	0.060 (1,5)	1.615 (41,0)
4679	0.060 (1,5)	1.693 (43,0)
4408	0.060 (1,5)	1.740 (44,2)
4148	0.060 (1,5)	1.878 (47,7)
4169	0.060 (1,5)	1.900 (48,3)
4160	0.060 (1,5)	2.305 (58,5)
4235	0.060 (1,5)	2.52 (64,0)
4596	0.060 (1,5)	3.091 (78,5)
4907	0.060 (1,5)	3.780 (96,0)
4071	0.062 (1,6)	0.300 (7,6)
4171	0.062 (1,6)	0.870 (22,1)
4143	0.062 (1,6)	2.000 (50,8)
4268	0.070 (1,8)	0.160 (4,1)
4302	0.070 (1,8)	0.551 (14,0)
4199	0.070 (1,8)	0.650 (16,5)
4410	0.070 (1,8)	1.063 (27,0)
4688	0.079 (2,0)	0.118 (3,0)
4392	0.079 (2,0)	0.354 (9,0)
4094	0.080 (2,0)	0.160 (4,1)
4186	0.080 (2,0)	0.200 (5,1)
4602	0.080 (2,0)	0.236 (6,0)
4096	0.080 (2,0)	0.275 (7,0)
4650	0.080 (2,0)	0.295 (7,5)
4601	0.080 (2,0)	0.315 (8,0)
4357	0.080 (2,0)	0.394 (10,0)
4182	0.080 (2,0)	0.400 (10,2)
4675	0.080 (2,0)	0.535 (13,6)
4359	0.080 (2,0)	0.710 (18,0)
4571	0.080 (2,0)	0.787 (20,0)
4200	0.080 (2,0)	0.827 (21,0)

All dimensions shown are in inches (millimeters) unless otherwise specified.
* Gaskets less than 0.040" thick are constructed without foam.

FABRIC-OVER-FOAM PROFILE SELECTION GUIDE

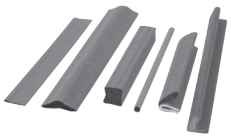


Rectangle Shaped Continued

Profile Number	inches (mm) H	inches (mm) W
4361	0.080 (2,0)	0.900 (22,9)
4325	0.080 (2,0)	0.984 (25,0)
4194	0.080 (2,0)	1.126 (28,6)
4389	0.080 (2,0)	1.259 (32,0)
4315	0.080 (2,0)	1.345 (34,2)
4531	0.080 (2,0)	1.550 (39,4)
4263	0.080 (2,0)	1.615 (41,0)
4260	0.080 (2,0)	1.842 (46,8)
4262	0.080 (2,0)	1.736 (44,1)
4355	0.080 (2,0)	5.340 (135,6)
4339	0.090 (2,3)	0.200 (5,1)
4903	0.090 (2,3)	0.535 (13,6)
4248	0.090 (2,3)	1.060 (26,9)
4254	0.090 (2,3)	1.370 (34,8)
4255	0.090 (2,3)	1.655 (42,0)
4256	0.090 (2,3)	1.700 (43,2)
4801	0.100 (2,5)	0.265 (6,7)
4082	0.100 (2,5)	0.375 (9,5)
4612	0.100 (2,5)	0.500 (12,7)
4133	0.100 (2,5)	0.354 (9,0)
4285	0.100 (2,5)	1.330 (33,8)
4582	0.100 (2,5)	1.500 (38,1)
4330	0.100 (2,5)	1.625 (41,3)
4083	0.110 (2,8)	0.240 (6,1)
4042	0.118 (3,0)	0.125 (3,2)
4619	0.118 (3,0)	0.197 (5,0)
4272	0.118 (3,0)	0.315 (8,0)
4286	0.118 (3,0)	0.394 (10,0)
4583	0.118 (3,0)	0.787 (20,0)
4126	0.118 (3,0)	1.717 (43,6)
4209	0.120 (3,0)	0.155 (3,9)
4210	0.120 (3,0)	0.355 (9,0)
4264	0.120 (3,0)	0.750 (19,1)
4536	0.120 (3,0)	1.551 (39,4)
4788	0.125 (3,2)	0.250 (6,4)
4694	0.125 (3,2)	0.500 (12,7)
4065	0.125 (3,2)	0.600 (15,2)
4247	0.125 (3,2)	0.700 (17,8)
4376	0.125 (3,2)	0.720 (18,3)
4064	0.125 (3,2)	1.000 (25,4)
4603	0.125 (3,2)	1.125 (28,6)
4066	0.125 (3,2)	1.250 (31,8)
4158	0.125 (3,2)	1.400 (35,6)
4239	0.125 (3,2)	1.615 (41,0)
4238	0.125 (3,2)	1.850 (47,0)
4693	0.130 (3,3)	0.190 (4,8)
4062	0.130 (3,3)	0.380 (9,7)
4694	0.130 (3,3)	0.500 (12,7)
4632	0.125 (3,2)	1.625 (41,3)
4575	0.125 (3,2)	2.000 (50,8)
4615	0.138 (3,5)	0.197 (5,0)
4594	0.138 (3,5)	0.350 (8,9)
4525	0.140 (3,6)	0.512 (13,0)
4203	0.150 (3,8)	0.100 (2,5)
4047	0.150 (3,8)	0.500 (12,7)
4533	0.156 (4,0)	0.630 (16,0)
4799	0.156 (4,0)	0.650 (16,5)
4914	0.156 (4,0)	0.709 (18,0)
4499	0.157 (4,0)	0.197 (5,0)
4741	0.157 (4,0)	0.256 (6,5)

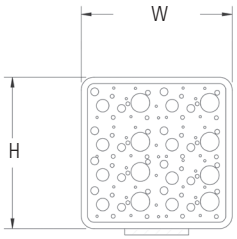
Profile Number	inches (mm) H	inches (mm) W
4055	0.157 (4,0)	0.315 (8,0)
4516	0.157 (4,0)	0.354 (9,0)
4791	0.157 (4,0)	0.394 (10,0)
4098	0.157 (4,0)	0.591 (15,0)
4704	0.158 (4,0)	0.236 (6,0)
4241	0.160 (4,1)	0.200 (5,1)
4253	0.160 (4,1)	0.280 (7,1)
4114	0.158 (4,0)	0.433 (11,0)
4115	0.160 (4,1)	0.590 (15,0)
4249	0.160 (4,1)	0.790 (20,1)
4257	0.160 (4,1)	0.880 (22,4)
4252	0.160 (4,1)	0.985 (25,0)
4250	0.160 (4,1)	1.375 (34,9)
4251	0.160 (4,1)	1.700 (43,2)
4142	0.177 (4,5)	0.354 (9,0)
4370	0.180 (4,6)	2.000 (50,8)
4902	0.196 (5,0)	0.315 (8,0)
4258	0.190 (4,8)	1.625 (41,3)
4698	0.195 (5,0)	0.130 (3,3)
4211	0.195 (5,0)	0.395 (10,0)
4674	0.197 (5,0)	0.512 (13,0)
4360	0.197 (5,0)	0.591 (15,0)
4281	0.200 (5,1)	3.900 (99,1)
4365	0.216 (5,5)	0.394 (10,0)
4100	0.216 (5,5)	0.500 (12,7)
4786	0.217 (5,5)	0.394 (10,0)
4528	0.217 (5,5)	0.709 (18,0)
4087	0.225 (5,7)	0.218 (5,5)
4701	0.250 (6,4)	0.375 (9,5)
4795	0.250 (6,4)	0.500 (12,7)
4798	0.250 (6,4)	0.600 (15,2)
4226	0.250 (6,4)	0.750 (19,1)
4224	0.250 (6,4)	1.000 (25,4)
4705	0.256 (6,5)	0.236 (6,0)
4740	0.256 (6,5)	0.394 (10,0)
4649	0.275 (7,0)	0.394 (10,0)
4568	0.275 (7,0)	0.511 (13,0)
4113	0.276 (7,0)	0.433 (11,0)
4227	0.283 (7,2)	1.180 (30,0)
4222	0.295 (7,5)	0.591 (15,0)
4237	0.295 (7,5)	1.500 (38,1)
4057	0.315 (8,0)	0.157 (4,0)
4687	0.315 (8,0)	0.236 (6,0)
4216	0.315 (8,0)	0.395 (10,0)
4610	0.335 (8,5)	0.394 (10,0)
4702	0.375 (9,5)	0.250 (6,4)
4081	0.375 (9,5)	0.500 (12,7)
4070	0.375 (9,5)	0.750 (19,1)
4192	0.375 (9,5)	1.000 (25,4)
4176	0.394 (10,0)	0.787 (20,0)
4513	0.413 (10,5)	0.394 (10,0)
4173	0.413 (10,5)	0.512 (13,0)
4524	0.452 (11,5)	0.472 (12,0)
4391	0.500 (13,0)	0.984 (25,0)
4172	0.591 (15,0)	0.394 (10,0)
4233	0.600 (15,2)	1.000 (25,4)
4136	0.670 (17,0)	0.591 (15,0)
4900	0.700 (17,8)	0.500 (12,7)
4686	0.709 (18,0)	0.394 (10,0)
4744	0.787 (20,0)	0.580 (14,7)

All dimensions shown are in inches (millimeters) unless otherwise specified.



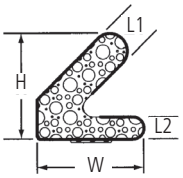
FABRIC-OVER-FOAM PROFILE SELECTION GUIDE

SQUARE SHAPED



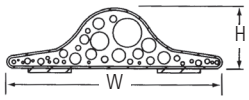
Profile Number	inches (mm) H	inches (mm) W
4520	0.080 (2,0)	0.080 (2,0)
4046	0.118 (3,0)	0.118 (3,0)
4522	0.157 (4,0)	0.157 (4,0)
4212	0.195 (5,0)	0.195 (5,0)
4048	0.236 (6,0)	0.236 (6,0)
4049	0.250 (6,4)	0.250 (6,4)
4695	0.375 (9,5)	0.375 (9,5)
4206	0.395 (10,0)	0.395 (10,0)
4084	0.500 (12,7)	0.500 (12,7)
4204	0.670 (17,0)	0.670 (17,0)
4517	0.750 (19,1)	0.750 (19,1)
4089	0.787 (20,0)	0.787 (20,0)

C-FOLD SHAPED



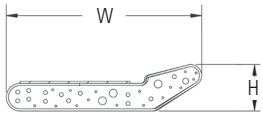
Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1	inches (mm) L2
4593	0.250 (6,4)	0.280 (7,1)	0.125 (3,2)	0.060 (1,5)
4168	0.315 (8,0)	0.315 (8,0)	0.080 (2,0)	0.080 (2,0)
4198	0.385 (9,8)	0.420 (10,7)	0.115 (2,9)	0.060 (1,5)
4243	0.400 (10,2)	0.430 (10,9)	0.125 (3,2)	0.060 (1,5)
4600	0.415 (10,5)	0.450 (11,4)	0.135 (3,4)	0.650 (1,7)
4529	0.465 (11,8)	0.420 (10,7)	0.115 (2,9)	0.060 (1,5)
4697	0.675 (17,1)	0.590 (15,0)	0.165 (4,2)	0.156 (4,0)
4703	0.947 (24,1)	0.550 (14,0)	0.157 (4,0)	0.170 (4,3)

BELL SHAPED



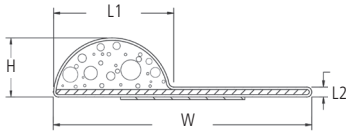
Profile Number	inches (mm) H	inches (mm) W
4630	0.070 (1,8)	0.180 (4,6)
4379	0.070 (1,8)	0.564 (14,3)
4387	0.080 (2,0)	0.675 (17,1)
4633	0.100 (2,5)	0.300 (7,6)
4131	0.140 (3,6)	0.500 (12,7)

KNIFE SHAPED



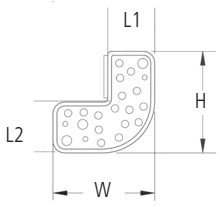
Profile Number	inches (mm) H	inches (mm) W
4797	0.106 (2,7)	0.445 (11,3)
4097	0.106 (2,7)	0.315 (8,0)
4796	0.110 (2,8)	0.450 (11,4)
4205	0.250 (6,4)	0.750 (19,1)
4106	0.312 (7,9)	0.707 (18,0)
4189	0.350 (8,9)	0.750 (19,1)

P-SHAPED



Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1	inches (mm) L2
4150	0.118 (3,0)	0.520 (13,2)	0.242 (6,1)	0.020 (0,50)
4699	0.145 (3,7)	0.520 (13,2)	0.150 (3,8)	0.020 (0,50)
4792	0.200 (5,1)	0.480 (12,2)	0.170 (4,3)	0.090 (2,3)
4537	0.374 (9,5)	0.887 (22,5)	0.500 (13,0)	0.051 (1,0)

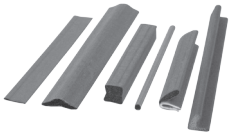
J-SHAPED



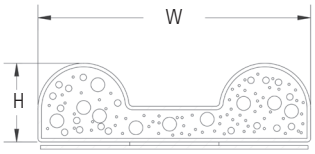
Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1	inches (mm) L2
4117	0.130 (3,3)	0.130 (3,3)	0.060 (1,5)	0.065 (1,7)
4054	0.209 (5,3)	0.130 (3,3)	0.063 (1,6)	0.071 (1,8)
4502	0.400 (10,2)	0.300 (7,6)	0.175 (4,4)	0.140 (3,6)

All dimensions shown are in inches (millimeters) unless otherwise specified.

FABRIC-OVER-FOAM PROFILE SELECTION GUIDE

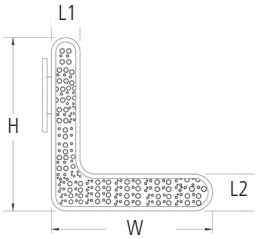


DOUBLE D-SHAPED



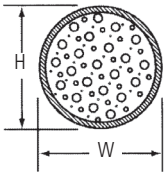
Profile Number	inches (mm) H	inches (mm) W
4299	0.110 (2,8)	0.382 (9,7)

L-SHAPED



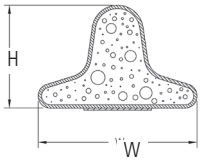
Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1	inches (mm) L2
4469	0.216 (5,5)	0.354 (9,0)	.138 (3,5)	.118 (3,0)
4534	0.591 (15,0)	0.551 (14,0)	.098 (2,5)	.126 (3,2)

ROUND SHAPED

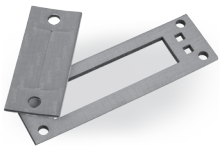


Profile Number	inches (mm) H	inches (mm) W
4201	0.100 (2,5)	0.100 (2,5)
4372	0.125 (3,2)	0.125 (3,2)

T-SHAPED



Profile Number	inches (mm) H	inches (mm) W
4349	0.157 (4,0)	0.244 (6,2)
4857	0.172 (4,4)	0.244 (6,2)
4A58	0.152 (3,9)	0.235 (6,0)

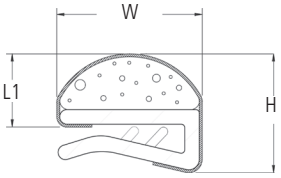


FABRIC-OVER-FOAM I/O SELECTION GUIDE

DIVERSE ASSEMBLY OPTIONS

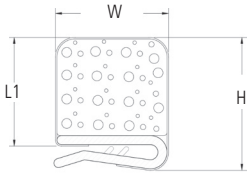
Multiple attachment options provide a variety of ways to install critical EMI products. Pressure Sensitive Adhesive (PSA) has been complemented with the Easy Peel® release liner and rigid clip configurations. These mechanical attachment options enable you to take advantage of existing tooling on doors and enclosures as well as offer alternate attachment methods to better meet design requirements.

D-SHAPED CLIP



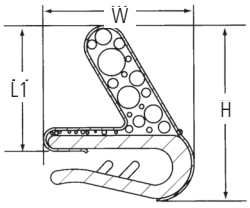
Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1
4110	0.203(5,2)	0.250 (6,4)	0.125 (3,2)
4111	0.243(6,2)	0.250 (6,4)	0.165 (4,2)
4039	0.304(7,7)	0.480 (12,2)	0.195 (5,0)
4033	0.35(8,9)	0.480 (12,2)	0.240 (6,1)
4121	0.358(9,1)	0.250 (6,4)	0.280 (7,1)
4040	0.41(10,4)	0.480 (12,2)	0.300 (7,6)
4038	0.43(10,9)	0.490 (12,4)	0.310 (7,9)
4043	0.43(10,9)	0.490 (12,4)	0.310 (7,9)
4085	0.43(10,9)	0.490 (12,4)	0.310 (7,9)
4041	0.568(14,4)	0.480 (12,2)	0.458 (11,6)

RECTANGLE SHAPED CLIP



Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1
4913	0.440 (11,2)	0.375 (9,5)	0.360 (9,1)
4413	0.485 (12,3)	0.390 (9,9)	0.405 (10,3)

C-FOLD WITH CLIP



Profile Number	inches (mm) H	inches (mm) W	inches (mm) L1
4E42	0.335 (8,5)	0.284 (7,3)	0.240 (6,1)

All dimensions shown are in inches (millimeters) unless otherwise specified.

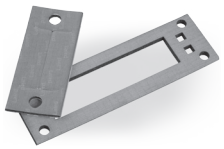
PROFILE GASKET TOLERANCES

Profile	Tolerance Inches (Millimeters)
Height & Width	± .020 (0,5)
Length Inches (Millimeters)	Tolerance Inches (Millimeters)
1 to 6 (25,4 – 152,4)	± .030 (0,8)
>6 to 11 (152,4 – 279,4)	± .050 (1,3)
>11 to 48 (279,4 – 1219,2)	± .100 (2,5)
>48 to 70 (1219,2 – 1778,0)	± .187 (4,7)
>70 to 96 (1778,0 – 2438,4)	± .250 (6,4)

For parts shorter than 1 inch (25,4 mm), or longer than 96" (2438,4 mm), please consult Engineering for tolerances. See back cover for contact information.

All dimensions shown are in inches (millimeters) unless otherwise specified.

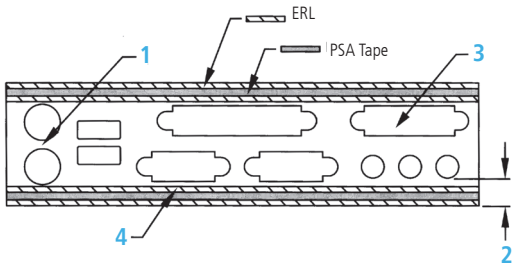
FABRIC-OVER-FOAM I/O SELECTION GUIDE



The following pages show examples of standard I/O gaskets used in computer and telecommunication applications. If you have different requirements, the Engineering Department will design gaskets to the specifications you supply. Laird will design your I/O from a fully detailed print, drawing file, or the actual panel to which the gasket is to be applied.

I/O GASKET TOLERANCES	
Height tolerance	± .020" (±0.5 mm)
Width tolerance	± .020" (±0.5 mm)
Length tolerance	± .020" (±0.5 mm)
Cutout tolerance	± .020" (±0.5 mm)

If different tolerances are required, please consult Engineering. See back cover for contact information.



BASIC I/O GASKET DESIGN

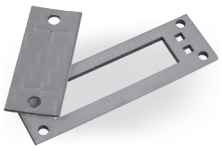
1. Space between required cutouts should match or exceed 0.060" (1,5 mm).

2. Distance from the edge of a cutout should be at least 0.060" (1,5 mm) from the edge of the gasket. In most cases, a slot can be used in place of a hole that is positioned too close to the gasket edge.

3. All cutouts and locations are designed customer specifications.

4. Pressure Sensitive Adhesive (PSA) and Extended Release Liner (ERL) can be applied in parallel with the long edge of the gasket.

   The recommended operating compression for Fabric-Over-Foam EMI gaskets will vary depending on the shape and size of the particular gasket. Typically, I/O gaskets should be compressed between 30% and 50% of the foam height.



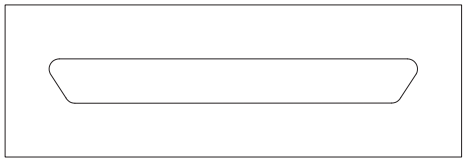
FABRIC-OVER-FOAM I/O GASKET SELECTION GUIDE

SCSI + 50 PIN CONNECTOR, PART NUMBER 4164-FE

Usage: Peripheral, Hard Disk, CD-ROM

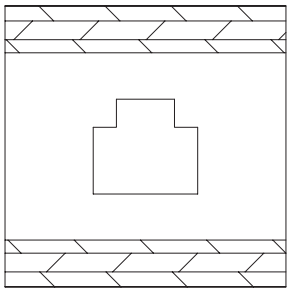
SCSI + 68 PIN CONNECTOR, PART NUMBER 4164-FF

Usage: Peripheral, External Hard Drive



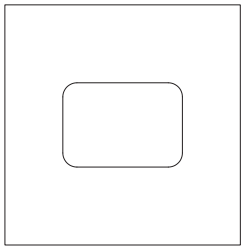
RJ-11 CONNECTOR, PART NUMBER 4164-FH

Usage: Telecom, Ethernet Networking



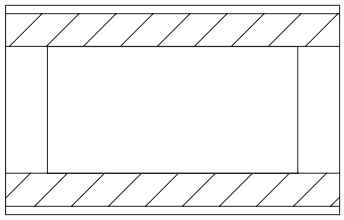
USB PORT 4 PIN CONNECTOR, PART NUMBER 4219-EB

Usage: Multi-use, hot plug-and-play



IEEE 1394 I/O 4 Pin Connector, Part Number 4051-EE

Usage: Plug-and-Play Serial Port (Digital Cameras, Printers, Keyboards, Mouse)



D-SUB CONNECTOR SERIES

Laird Part number	D-Sub Pins	D-Sub Design	PSA
4N64EA51N00138	9	Female	No
4N64EB51N00138	9	Male	No
4N64EC51N00171	15	Female	No
4N64ED51N00171	15	Male	No
4N64EE51N00225	25	Female	No
4N64EF51N00225	25	Male	No
4N64EG51N00290	37	Female	No
4N64EH51N00290	37	Male	No
4N64EJ51N00281	50	Female	No
4N64EK51N00281	50	Male	No
4N64EL51N00138	9	Female	Yes
4N64EM51N00138	9	Male	Yes
4N64EM51N00171	15	Female	Yes
4N64EP51N00171	15	Male	Yes
4N64ER51N00225	25	Female	Yes
4N64ES51N00225	25	Male	Yes
4N64ET51N00290	37	Female	Yes
4N64EU51N00290	37	Male	Yes
4N64EV51N00281	50	Female	Yes
4N64EW51N00281	50	Male	Yes