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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



EMI CATALOG



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 through 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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EMI INTRODUCTION

Overview of EMC/RFI Issues

The phenomenon of electromagnetic interference (EMI) is familiar to virtually everyone, even if they do not understand the underlying principles. Most people have witnessed firsthand the effects of interference. To control EMI, government organizations, such as the FCC, CSA, and EEC, mandate that manufacturers may not design, produce or sell electronic equipment that jams the public broadcast services. In other instances, however, EMI can constitute more than a mere nuisance. The military and medical communities, for example, require trouble-free operation of their electronic equipment in adverse electromagnetic environments since malfunctions could jeopardize missions and personnel. The European Union's EMC directive also mandates that "the apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance to enable it to operate as intended".

EMC Design of High Speed Systems

The interference and susceptibility (immunity) effects of electronic apparatus are created by time-variant electromagnetic fields which may be propagated along a conducting medium or by radiation through space. Because the source of the conducted and radiated interference energy levels may be related, a coordinated systems design effort is required to reduce these effects.

A design program for an equipment item that must meet both an emission and an immunity requirement consists of:

- Suppression: Reducing the interference at its source.
- Isolation: Isolating the offending circuits by filtering, grounding and shielding.
- Desensitization: Increasing the immunity of any susceptible circuits.

These three steps should be carried on throughout the entire equipment design and implemented as early as possible within the design program.

Effects of Logic Speed

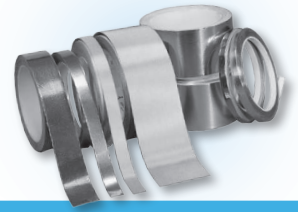
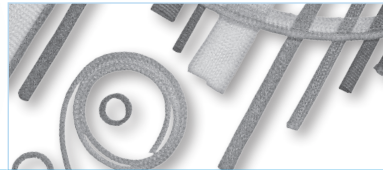
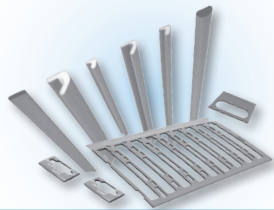
The trend in today's electronic devices is faster, smaller, and digital rather than analog. Most equipment (95%) of today contains digital circuits. Today's digital designer must create a circuit board that has the lowest possible EMI, combined with the highest possible operating/processing speeds. Design of the PCB is the most critical EMC influencing factor for any system, since virtually all active devices are located on the board. It is the changing current (accelerated electron movement) produced by the active devices that result in EMI.

Design Approaches

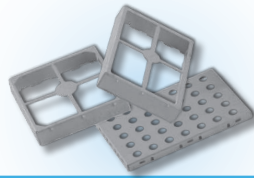
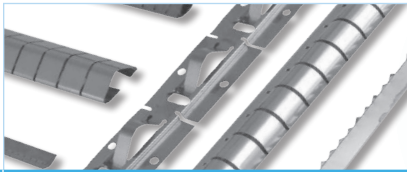
There are two approaches that can be used to reduce the emission from the PC board. The first approach is to operate the circuit at the slowest speeds consistent with the functionality of the system, lay out the PCB with the smallest possible loop areas (especially the high speed devices), and insert suppression components such as filters, ferrite beads, and bypass capacitors into the circuit to reduce its bandwidth. These techniques will result in a desired decrease in the high frequency harmonic amplitudes and circuit bandwidth and a corresponding undesired decrease in both the operating speed and system reliability. The use of slower speeds with reduced bandwidth will help to desensitize the circuit to external susceptibility fields.

The second is to use shielding. Shielding is the only non-invasive suppression technique. Since the shielding is not inserted into the circuit, it does not affect the high frequency operating speed of the system, nor does it affect the operation of the system should changes be made to the design in the future. In addition, shielding does not create timing problems and waveform distortion; it does not decrease system reliability; and it reduces crosstalk. Plus, shielding works for both emission suppression as well as susceptibility (immunity) problems.

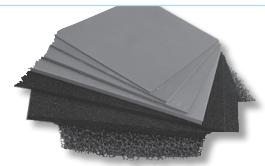
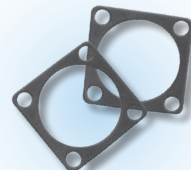
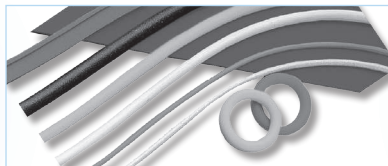
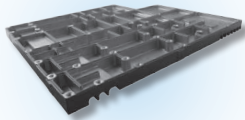
Even with the overall advantages of shielding, the most cost-effective approach is to use a combination of circuit suppression/hardening and shielding.



	Fabric-Over-Foam and Conductive Foam	Wire Mesh	Tape
Applications	<ul style="list-style-type: none"> Shielding or grounding of computer and telecommunication equipment seams and apertures 	<ul style="list-style-type: none"> Covers opened infrequently for servicing (6-12 times per year) Long lasting resiliency is ideal for highly sensitive components in permanent or semi-permanent enclosures Consistent point-to-point contact for high shielding effectiveness over the life of the gasket 	<ul style="list-style-type: none"> Design flexibility provides grounding and shielding solutions for I/O shielding panels, disk drive insulators, ground planes or circuit boards, electromedical devices, keyboard devices Mask-and-peel tape for painted electronic enclosures Cable and wire harness wrapping
Features and Benefits Product Highlights	<ul style="list-style-type: none"> UL 94VO and HB flame retardant Ideal for applications requiring low pressure force Self-terminating cut-to lengths High conductivity and shielding attenuation Galvanically-compatible with most mating surfaces High abrasion and shear resistance 	<ul style="list-style-type: none"> Most economical gasket for low-cycling applications High shielding effectiveness over broad frequency range Available in wide variety of sizes and shapes Knit construction for long lasting resiliency Versatile mounting options Available with elastomer gasket for moisture and dust sealing 	<ul style="list-style-type: none"> Simple installation Ideally suited for thin or low-profile applications Conductive foil tape with release mask for painted enclosures Tin copper cloth and nickel copper cloth versions provide easy-to-handle alternatives to foils
Electrical Shielding Effectiveness Transfer Impedance (500 MHz)	>85 dB	90 - 105 dB	—
H-field (200 MHz) Modified Mil 285	30 - 45 dB	55 - 65 dB	—
Plane Wave (2 GHz) Modified Mil 285	90 - 100 dB	80 - 115 dB	85 - 95 dB
Surface Resistivity	<0.07 ohms/square	N/A	Low surface resistivity based on material selection
Volume Resistivity	N/A	0.0004 - 0.114 ohm-cm	N/A
Mechanical Available Size Range	Height: 0.015 - 0.945 (0,038 - 24,0)	Height: 0.062 - 0.500 (1,57 - 12,7)	Width: 0.025 - 2.00 (6,4 - 50,8) Thickness: 0.003 - 0.007 (0,08 - 0,18)
Deflection Operating Range	20 - 75% deflection	20 - 70% deflection	N/A
Compression Force (based on shape selection)	3 - 10 lbs/in. ft. (4,5 - 15,0 Kg/m) @ 20% deflection (dependent on foam selection and shape)	From 6 - 50 lbs/in. ft. (8,8 - 74 Kg/m) round	N/A
Compression Set	<4 - 20% @ 50% deflection	10% @ 20% compression	N/A
Joint Unevenness Accommodation	0.020 - 0.050 (0,51 - 1,27)	0.010 - 0.300 (0,25 - 7,6)	N/A
Compound/Material Availability	Cover: Flame retardant metallized Ni/Cu, Tin/Cu and silver woven or non-woven textile. Core: Flame retardant urethane, TPE	BeCu, Monel, aluminum, tin-plated steel, tin-plated brass, Enviroseal version with neoprene or silicone	Tin-plated copper, copper foil, nickel copper cloth tape
Temperature Range	-40 - 158°F (-40 - 70°C)	Enviroseal -103 - 500°F (-75 - 260°C)	50 - 500°F (10 - 260°C) based on material selection
Available Profiles	Round, rectangular, square "D", "C", "J", "P", "U", clip-on, knife edge	Round, rectangular, square, single-round with fin, double-round with fin	Rolls
Mounting Methods	Groove, PSA, clip-on, dart	Groove, pressure-sensitive adhesive, mechanical fasteners, channel mount	Pressure-sensitive adhesive, conductive or non-conductive
Custom Shapes Available	Cut-to lengths, mitered and spliced corners, kiss-cut, other profiles	Cut-to lengths, mitered corners, flat tape, and EMI washers	Die-cut shapes
Environmental Fluid Seal	N/A	Enviroseal product only: moisture, rain	N/A
Air/Dust	Provides barrier against dust	Enviroseal product only	N/A
Galvanic Compatibility	Compatible with a wide variety of mating surfaces—zinc, aluminum, stainless steel, etc.	Variety of platings to ensure galvanic compatibility with mating surface	Wide variety of materials available to meet galvanic compatibility requirements



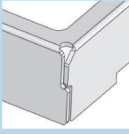

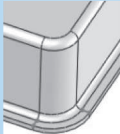
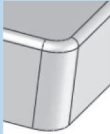




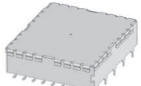
	Fingerstock	Board-Level Shields	Vent Panels and Filters
Applications	<ul style="list-style-type: none"> • Ideal for high-cycling applications requiring frequent access • Ideal in wiping applications when gasket needs to be engaged from either the top or side • Wide variety of profiles and mounting methods accommodating applications from small hand-held devices to room-size enclosures 	<ul style="list-style-type: none"> • All applications that require shielding of board-level components • Low height down to 0.04 (1,0) accommodating mother/daughter board configurations • Secure cover design ideal for applications subject to shock and vibration such as mobile military vehicles, commercial aircraft, and wireless electronics 	<ul style="list-style-type: none"> • Provides air flow for component cooling and a barrier to reduce RF leakage • Sizes range from small muffin fans on desktops to large room-size facilities • Available in commercial and military grade materials
Features and Benefits Product Highlights	<ul style="list-style-type: none"> • Large selection of sizes and shapes • Wide mechanical operating range • Superior performance at elevated temperatures • High shielding effectiveness levels • Ideal for high-cycle applications • Good design flexibility with either wiping action or in compression • For use in a wide variety of slotted and grounding contact applications 	<ul style="list-style-type: none"> • Custom shapes available • Provides isolation of board-level components • Minimizes crosstalk and susceptibility without impacting system speed • Available in tape-and-reel for automated pick-and-place applications • ReCovr/ReMovl features available for convenient component access. 	<ul style="list-style-type: none"> • Available in a wide range of materials and platings that meet a broad range of shielding effectiveness requirements • Varied mounting configurations meeting environmental space criteria • Available protective grille for high traffic areas • Provides cooling of electronic equipment while maintaining EMI integrity of enclosure • MaxAir vent panels offer 10-20% additional airflow over frames Al vent panels
Electrical Shielding Effectiveness Transfer Impedance (500 MHz)	80 - 100 dB	—	—
H-field (200 MHz) Modified Mil 285	60 - 70 dB	48 dB	40 - 70 dB
Plane Wave (2 GHz) Modified Mil 285	75 - 120 dB	40 - 60 dB	45 - 115 dB
Surface Resistivity	N/A	N/A	N/A
Volume Resistivity	N/A	N/A	N/A
Mechanical Available Size Range	Selection of various sizes and configurations to accommodate gaps from 0.010 - 0.400 (0,25 - 10,2)	Fence and lid: 0.130 - 1.00 (3,3 - 25,4) height 6.000 (152,4) width One-piece construction: 0.04 - 0.25 (1,0 - 6,4) height, 0.250 - 0.375 (6,35 - 9,53) width	Thickness: 0.25 - 0.500 (6,35 - 12,7)
Deflection Operating Range	20 - 80% deflection, Maximum deflection is dependent on the part profile	N/A	N/A
Compression Force (based on shape selection)	UltraSoft® 98 Series: 1.6 lbs/in. ft. (2,4 Kg/m) to 41 lbs/in. ft. (61 Kg/m) Standard 97 Series: 3.1 lbs/in. ft. (4.6 Kg/m) to 118 lbs/in. ft. (176 Kg/m)	N/A	N/A
Compression Set	None within operating range	N/A	N/A
Joint Unevenness Accommodation	0.003 - 0.350 (0,08 - 8,89) maximum	N/A	N/A
Compound/Material Availability	Standard material is Beryllium Copper, other beryllium free variants on request	Tin-plated phosphor bronze, tin-coated steel, stainless steel, brass, BeCu, and nickel silver; other materials also available	Gasket material: Monel, tin/copper/steel, BeCu, metallized fabric-over-foam Fingerstock frame: aluminum alloy, steel, brass Honeycomb material: aluminum, steel, brass, metallized polymeric
Temperature Range	Continuous operation @ 250°F (121°C)	Withstands reflow and solder temperature	N/A
Available Profiles	Over 350 standard shapes available, as well as cut-to lengths and modified standards that include finger removal, notches, punch holes, etc.	Squares, rectangles, L-shapes, 90° inside corners, and other custom shapes	N/A
Mounting Methods	Clip-on, Sticky Fingers® (pressure-sensitive adhesive tape), rivet, weld, solder, and slot mount	Surface mount/thru-hole, various pin styles available	Captive fastener thru-holes
Custom Shapes Available	Custom designs to meet specific applications	Flexible fence with flat lid, photo etched flat blanks for hand forming, solid can construction, supplied with dividers to provide isolation	Available in circular configurations and custom shapes
Environmental Fluid Seal	None	N/A	Drip-proof versions available
Air/Dust	Limited to twist series with Poron seal	N/A	95% open area for minimal pressure drop
Galvanic Compatibility	Over 20 plating finishes available to ensure galvanic compatibility with mating surface	Compatible with all solder materials	Gasket materials compatible with wide variety of plated surfaces



Form-In-Place	Electrically Conductive Elastomers	Oriented Wire	Microwave Absorbers
<ul style="list-style-type: none"> Ideal for applications with miniature electrical housings, thin wall construction, and intricate multi-components (i.e., cell phones, hand-held devices, medical instrumentation and equipment) 	<ul style="list-style-type: none"> EMI and environmental sealing applications where flat or groove mounting surface requires a complex molded or extruded shape 	<ul style="list-style-type: none"> Providing both EMI shielding and an environmental seal on cast or machined surfaces Vulcanized frame configurations can be used with pre-cast housings, vent panels, and computer terminal window frames Die-cut wall widths as low as 0.090 (2,27) for circular military connectors and D-sub connectors 	<ul style="list-style-type: none"> Antenna sidelobe reduction Surface current suppression Applied directly to the top of high-speed CPUs, LSIs, and ICs Crosstalk suppression Improves antenna gain in RFID applications Radar cross-section reduction
<ul style="list-style-type: none"> Automated process offers cost savings on raw material, labor and assembly time Small dimension which provide critical packaging space for board level components Fast prototyping and turn over to mass production Various bead size and cross section shape available Dispense on metal or plastics 	<ul style="list-style-type: none"> Meets military and commercial standards Provides EMI and environmental shielding Extruded shapes ideal for extremely narrow mounting surfaces Custom die-cut and molding available Wide variety of material compounds for galvanic compatibility to mounting surfaces High corrosion-resistant compounds available 	<ul style="list-style-type: none"> Provides both EMI and moisture seal Available in sponge or solid silicone with Monel or aluminum wire Can be die-cut in complex shapes Monel wire bonded into the silicone provides multiple spring effect with each contact point resulting in low compression set 	<ul style="list-style-type: none"> Higher frequency use than traditional shielding Frequency range extended used with other shielding Variety of types for custom solutions Easy installation into noisy cavities with pressure-sensitive adhesive EMI and radar cross-section reduction Internal EMI and cavity resonance reduction, used in conjunction with board-level shielding
85 - 120 dB	40 - 105 dB	60 - 100 dB	N/A
50 - 70 dB	30 - 75 dB	25 - 60 dB	N/A
70 - 100 dB	40 - 120 dB	30 - 95 dB	N/A
N/A	N/A	N/A	N/A
0.002 - 0.03 ohm-cm	0.002 - 5 ohm-cm	0.006 ohm-cm	N/A
Height: 0.014 - 0.090 (0,36 - 2,3) Width: 0.020 - 0.125 (0,5 - 3,1)	Sheet: 0.020 (0,51) - 0.125 (3,17) thick O-strip: 0.040 (1,02) - 0.250 (6,35) dia. O-tubing: 0.090 (2,28) O.D. x 0.050 (1,27) I.D. to 0.4371 (11,10) O.D. x 0.250 (6,35) I.D.	Thickness: 0.032 - 0.250 (0,81 - 6,35)	Offered in sheets as a die-cut or kiss-cut component
15 - 20% deflection	Sheet: 10% deflection Solid extrusions: 10 - 25% deflection Hollow extrusions: 20 - 50% deflection	10 - 20% deflection	N/A
1.5 lbs/in. ft. (0,27 Kg/cm) @ 0.222 (0,56) height @ 20% deflection	Sheet: 75 - 100 PSI (516,7 - 689 kPa)	25 - 100 PSI (125 - 689 KPa)	N/A
<20% @ 50% deflection	15 - 50% @ 50% deflection	2 - 5% @ 50 PSI (344,5 KPa)	N/A
0.002 - 0.006 (0,05 - 0,15)	Sheet: 0.005 - 0.010 (0,13 - 0,25) Tubing: 0.005 - 0.300 (0,13 - 7,6)	0.005 - 0.015 (0,13 - 0,38)	N/A
Elastomer silicone fillers: Ag/Al, Ag/Cu, Ag/Ni, Ni/graphite	Compounds that meet MIL-G-83528: Elastomers: silicone, fluorosilicone, EPDM Fillers: Ag, Ag/Cu, Ag/Al, Ag/Ni, Ag/GI, CAR, Ni/graphite. Available in NASA-specified ES75 compounds for outgassing	Elastomer: solid or sponge silicone Wire: Monel, aluminum	Microwave absorbing elastomers (Q-Zorb) are offered in silicone; microwave absorber foam is urethane-based, open-celled foam
-58 - 212°F (-50 - 100°C)	-67 to 302°F (-55 to 150°C)	80 - 500°F (26 - 260°C)	Q-Zorb: -85 - 350°F (-65 - 175°C) RF foam: -85 - 250°F (-65 - 120°C)
"D" shape bead	Solid extrusions: rectangular, round, "D", and U-channel Hollow extrusions: square, round, "D", "P", modified standards, cut-to length sheets	Rectangular, strip, flat sheets; die-cut shapes	Q-Zorb thickness: 0.006 - 0.375 (0,15 - 9,53) RF Foam thickness: 0.125 - 0.250 (3,18 - 6,35)
Directly applied to mounting surface	Groove, pressure-sensitive adhesive, channel clip-on, mechanical fastening	Groove, pressure-sensitive adhesive	Pressure-sensitive adhesive
Infinite variety of patterns and larger custom bead sizes	Large variation on extruded shapes, complex die-cuts, and molded parts	Complex die-cut shapes, bonded or vulcanized	Infinite die-cut shapes and molded parts
Moisture, rain seal	Moisture, rain, jet fuel, and nuclear biological chemical (NBC) UL compounds	Moisture and rain	Moisture, rain, jet fuel, and nuclear biological chemical (NBC) UL compounds
In limited applications	Excellent sealing against air and dust	Provides barrier against dust	Available in limited applications
Available in four compounds to provide galvanic compatibility with most mating materials	21 standard variations	Monel and aluminum wire are compatible with a broad range of mating surfaces	Moisture, rain, jet fuel, and nuclear biological chemical (NBC) UL compounds

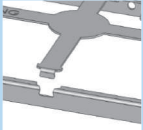
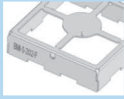

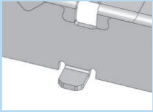
BOARD LEVEL SHIELDS

PRODUCT SELECTION GUIDE

BLS Design Type / Features		Key Attributes & Application Consideration	Corner Feature			
			Traditional Folded	Rigid Corner	Full Drawn w/ Flange	Full Drawn Zero Flange
						
				Improves Flatness by increasing torsional rigidity	Most mechanically rigid, but depth attainable is material and configuration dependent	Similar to Full Drawn, Tooling more complex.
SINGLE PIECE						
Single Piece		Simple low cost BLS Solution	Opt	Std	Opt (height/matl limits)	Opt
TWO PIECE						
Traditional		Post Reflow Component Access for inspect, test, cleaning, etc. Various cover retention features available to address rattling, EMI, and shock/vibration concerns. Optional pre-assembled deliverable				
Frame			Opt	Std	Opt (height/matl limits)	Low Height Option
Cover			Std	Opt	Opt (height/matl limits)	N/A
ReCovr		Lower total cost 2 piece solution. Eaveless side wall for maximum component access.	N/A	Req'd	N/A	N/A
EZ Peel		Support for legacy products. ReCovr can often be a more reliable alternative. EZ Peel can utilize a separate replacement cover if desired.	Std	N/A	Opt	
97-2000		Large BLS Applications. Can accommodate internal walls for EMI compartmentation.				
Frame			N/A	N/A	N/A	N/A
Cover			Std	N/A	N/A	N/A

BLS MATERIALS MATRIX

Material Type	Description / Specs	Comments
CRS, Tin Plated	1010 / 1008 CRS	High Permeability Material for low Freq Applications, Very Good Solderability, Mitigation options for Tin Whisker Growth, Pre-plated, Bare stamped edges
Nickel Silver	CA770, CA752	Environmental Performance & Aesthetic Quality, Good Mechanical / Strength Properties, Good Solderability, Active Flux may be required
Stainless Steel	Typical 301 and 316 Series	Environmental Performance, Good option for the cover of 2 piece designs
Copper Alloys	Phosphor Bronze, Beryllium Copper, Brass	Can be chosen for unique requirements that integrate spring contacts, Typically Plated for Solderability and/or corrosion resistance

Unique Product Features	Mounting Features			Size & Shape					
	ReMovl Pick & Place Bridge	SMT Castellations	Thru Hole Loc Pins	Pins, Tabs, Etc.	Interior Walls	Typical Material Thickness	Low Height (less than 2 mm)	Typical Length & Width	Flatness (Size Dep)
 Easy removal of pick and place bridge for post reflow inspection									
N/A	Std	Opt	Opt	No	0.2	Yes	10- 75 mm	0.08	
Opt	Std	Opt	Opt	Opt	0.2	Yes	10- 75 mm	0.08	
N/A	N/A	N/A	N/A	N/A	0.15	Yes	10- 75 mm	0.15	
N/A	Std	N/A	Opt	No	0.3	No	10-40 mm	0.1	
N/A	Std	N/A	Opt	No	0.12	Yes	10-30 mm	0.1	
N/A	Std	Opt	Opt	Opt	0.4	No	50-300 mm	0.2	
N/A	N/A	N/A	N/A	0.25	0.25	No	50-300 mm	0.2	

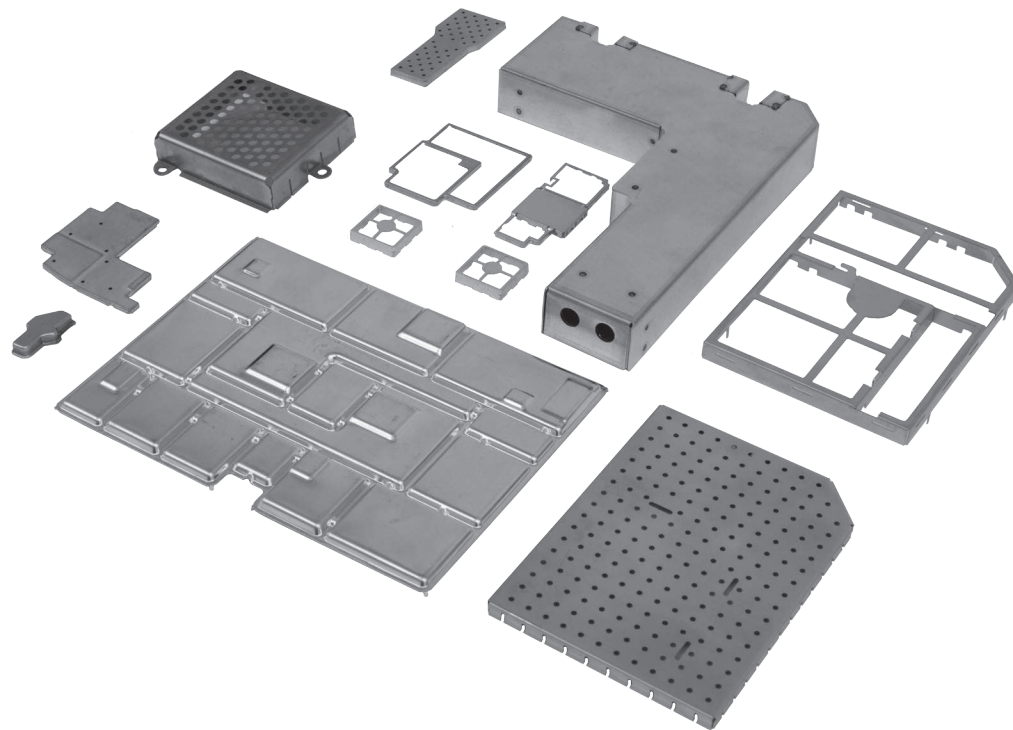
Cost Position	Applications
Best	Most common BLS solutions
Good	Hi Performance BLS solutions (Mechanical & Environmental)
Better	BLS Covers, Specialty Military
Good	Specialty BLS applications Integrated Spring Contacts

BOARD LEVEL SHIELDS

Whether it's a one-piece shield, multi-compartmental shield or precision contact, each solution Laird delivers is designed to provide maximum performance within a minimum timeline. Laird produces metal electronic components for surface mount applications in a variety of industries. Laird expertise in a number of key areas ensures that the part provided not only performs, but also optimizes applications. After determining the right board level shield or contact design for an application, Laird experts use the latest systems to develop part designs in just hours.

Laird experienced engineers and technical specialists look beyond the component to the total application.

They work with you to engineer the ideal finished product at the best value.



BOARD LEVEL SHIELDS

STANDARD DESIGN SHIELDS

STANDARD SURFACE MOUNT SHIELDS —

ONE-PIECE

Off the Shelf, On Spec and On Budget

Standard surface mount shields are available in both one-piece and two-piece designs. One-piece shields offer six sides of protection, with the sixth side being the board itself. One-piece designs offer economical shielding protection where access to covered components is not necessary. There are no tooling costs associated with either the one and/or two-piece standard design.

TYPICAL PROPERTIES AND PERFORMANCE

ALL PART NUMBERS

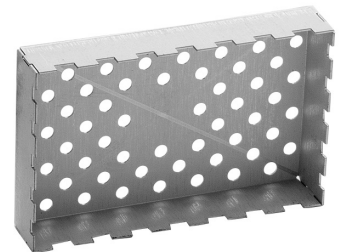
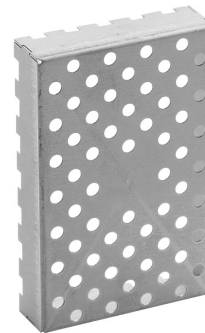
PROPERTY	TEST METHOD	RESULT
Co-planarity	LTWI-1119	< 0.10 mm
Solderability	ANSI/JSTD-002	>99%
Solderability	MIL-STD-202 Method 208	>99%
Surface mount solderability	ANSI/EIA 638	Passes
Appearance	LTIES-125	Passes
Adhesion	ASTM B-571	Passes
3 Axis mechanical shock	LTES-461	Passes

Features and Benefits:

- Available in both one-piece and two-piece designs
- One-piece designs offer economical shielding protection
- No tooling costs associated with one or two-piece standard designs

STANDARD ONE-PIECE BOARD LEVEL SHIELDS

PART NUMBER	MAXIMUM OVERALL LENGTH in (mm)	MAXIMUM OVERALL WIDTH in (mm)	MAXIMUM OVERALL HEIGHT in (mm)	PARTS PER REEL
BMI-S-101	.538 (13,66)	.476 (12,10)	.100 (2,54)	1000
BMI-S-102	.650 (16,50)	.650 (16,50)	.142 (3,60)	700
BMI-S-103	1.032 (26,21)	1.032 (26,21)	.200 (5,08)	300
BMI-S-104	1.260 (32,00)	1.260 (32,00)	.236 (6,00)	225
BMI-S-105	1.500 (38,10)	1.000 (25,40)	.236 (6,00)	250
BMI-S-106	1.450 (36,83)	1.326 (33,68)	.200 (5,08)	300
BMI-S-107	1.747 (44,37)	1.747 (44,37)	.384 (9,75)	120
BMI-S-111	1.032 (26,21)	1.032 (26,21)	.079 (2,00)	625



BOARD LEVEL SHIELDS

STANDARD DESIGN SHIELDS

STANDARD SURFACE MOUNT SHIELDS — TWO-PIECE

Reduce Board Damage From Inspection and Repairs

Two-piece board level shields offer users the flexibility to inspect or repair shielded components without having to risk board damage by removing the entire shield or incur any tooling costs. Covers snap on and off with ease, which makes repair of the component under the shield quicker and easier and reduces board re-work. Two-piece shields are available unassembled*, and are designed to survive drop, shock and no-rattle tests.

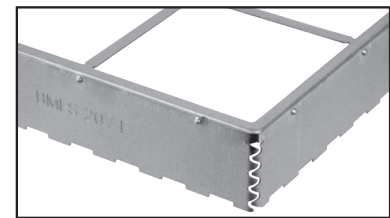
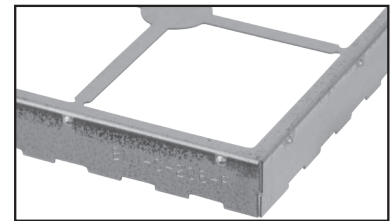
*Pre-assembly is an option. Consult sales

STANDARD TWO-PIECE BOARD LEVEL SHIELDS

PART NUMBER	OVERALL LENGTH in (mm)	OVERALL WIDTH in (mm)	OVERALL HEIGHT in (mm)	PARTS PER REEL
BMI-S-201-F	.538 (13,66)	.476 (12,10)	.100 (2,54)	1000
BMI-S-202-F	.650 (16,50)	.650 (16,50)	.142 (3,60)	700
BMI-S-203-F	1.032 (26,21)	1.032 (26,21)	.200 (5,08)	300
BMI-S-204-F	1.260 (32,00)	1.260 (32,00)	.236 (6,00)	225
BMI-S-205-F	1.500 (38,10)	1.000 (25,40)	.236 (6,00)	250
BMI-S-206-F	1.450 (36,83)	1.326 (33,68)	.200 (5,08)	300
BMI-S-207-F	1.747 (44,37)	1.747 (44,37)	.384 (9,75)	120
BMI-S-209-F	1.156 (29,36)	0.728 (18,50)	.275 (7,00)	400
BMI-S-210-F	1.732 (44,02)	1.201 (30,50)	.118 (3,00)	370
BMI-S-230-F	1.500 (38,10)	2.000 (50,80)	.200 (5,08)	250
BMI-S-230-F-R	1.500 (38,10)	2.000 (50,80)	.200 (5,08)	250
BMI-S-305	1.500 (38,10)	1.000 (25,40)	.236 (6,00)	250

Features and Benefits:

- Offers flexibility to inspect or repair shield components without risking board damage
- Covers snap on and off with ease



DESIGN PARAMETERS – ALL PART NUMBERS

PICK-UP SPOT DIAMETER MATERIAL	MATERIAL	THICKNESS CARRIER TAPE	MATERIAL
6 mm or greater 0,20 mm	CRS Tin, Nickel Silver, 300 Series SS	0,20 mm	LTIMS-LCB
COVER TAPE	MATERIAL	REEL	DIAMETER
LTIMS-PSA	330 mm (101, 102, 103, 104, 201, 202, 203, 204) 381 mm (105, 106, 107, 205, 206, 207)	Plastic	EIA-481

BOARD LEVEL SHIELDS

EZ PEEL™

PATENTED SHIELDS ARE SCORED TO ALLOW PEEL-OFF WHEN ACCESS IS NEEDED

These patented shields have a solid top, scored to allow peel-off when access to board level components within the shield is required.

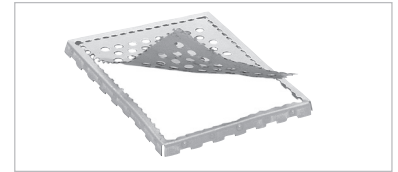
The peel-off feature prevents damage to the board and components by eliminating the need for labor intensive de-soldering, which can often result in increased scrap. Peeling off the cover is accomplished by using a small starter hole for simple removal. This hand operation requires minimal force using a hook scribe or tweezers.

After repair, replacement or adjustment of internal components, the shield can be resealed using a replacement cover. Laird offers two replacement cover options: a snap-in cover and a dish cover.

The snap-in cover utilizes a lance and hole design. The replacement cover snaps into place and locks into a lance feature on the frame of the original shield.

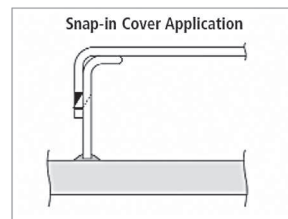
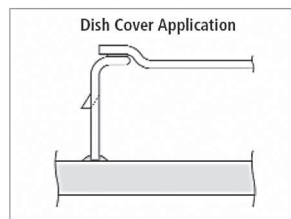
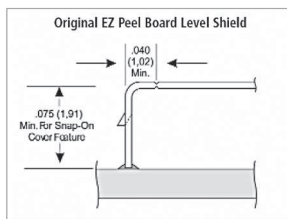
The other option is a dish cover that gets soldered into place on the board. The dish shape allows for self-location of the cover for soldering.

EZ Peel board level shields can be packaged in tape and reel formats for easy SMT installation using conventional pick-and-place equipment. The four standard sizes are also available without the EZ Peel (scored) feature.



Features and Benefits:

- Easy removal of scored cover area
- Only requires 1.5 lbs force for cover removal
- Simple replacement technique for cover
- Use on surface mount or through-hole applications
- Shield retains all physical properties after PCMCIA/JEIDA testing for shock, bending, torque, drop and vibration
- CRS 1008/1010 (tin plated) for solderability



RIGID CORNER

The rigid corner board-level shield incorporates a corner design that optimizes component rigidity for increased part and printed circuit board (PCB) firmness. As PCB designers are increasingly using thinner substrates, a rigid frame reinforces the assembly, thereby improving overall ruggedness and performance. The shield has improved solder joint reliability and resistance to solder joint fracture, especially in drop testing performance with thin PCBs. Several standard Laird EMI style parts including single-piece, two-piece, and multi-compartmental board-level shields use this new rigid corner design, along with availability in custom sizes as well.

The rigid corner shield is stronger and more robust than traditional formed shields, which results in coplanarity improvement of the solder castellations. The shield can tolerate more deflection (i.e., more handling) without plastic deformation. Elimination of drawn flange reduces the space needed on the PCB for shielding trace width by potentially ~0.3 mm, allowing for the shield to be more closely placed on the PCB. Elimination of draft allows for more undershield space and improved component clearance.

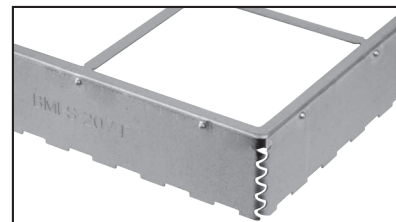
The partially drawn corner is located near the top portion the shield, resulting in improved torsional rigidity with no drawn lip and no draft. For parts over 2 mm, the corner is both drawn and formed with an interlocking multi-radius corner, which provides superior EMI shielding effectiveness. The interlocking corner can be meshed and closed in during the forming and drawing process for additional improved rigidity for parts taller than 2 mm. For parts under 2 mm, the entire corner is drawn without an interlocking corner.

FEATURES

- Corner openings are reduced, improving shielding performance
- Partially drawn corner located near the top portion of the corner combined with 90° straight forming of wall sections for improved torsional rigidity.
- U.S. Patent No. 7,488,902

MARKETS

- Computing
- Telecommunications
- Data Transfer and Information Technology
- Automotive
- Consumer Electronics
- Aerospace / Defense
- Medical
- Portability
- Industrial & Instrumentation
- Public Utilities



BOARD LEVEL SHIELDS

RECOVR™

The proprietary and patented ReCovr™ product line incorporates the functionality of a two-piece shield without the need for a separate frame and cover. The shield is specially designed with a locking mechanism that allows for easy removal of the shield cover when access to board-level components is required. The locking mechanism makes repair of components under the shield quick and easy by eliminating the need for removing the entire shield and reducing board re-work. The removable top shield also integrates Laird patented rigid corner board-level shield technology, which incorporates a new corner design that optimizes component rigidity for increased part and printed circuit board (PCB) firmness.

FEATURES

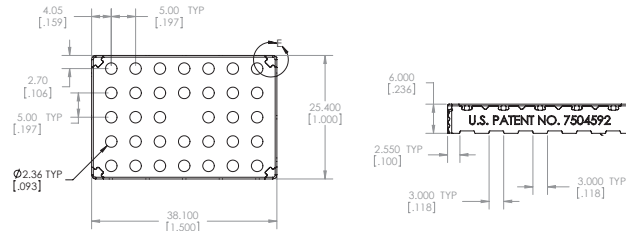
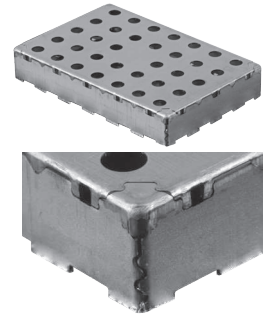
- Single-piece board-level shield with a removable top cover
- Eave-less side walls when the cover is removed
- SMT or through-hole pin configurations available
- U.S. Patent No. 7504592
- Other characteristics typical to one-piece shields: vent hole patterns, castellations, trace clearance notches, etc.

BENEFITS

- Eliminates need for replacement covers
- Offered as an assembled product only: tape and reel, tray pack, or layer pack
- Excellent for periodic testing or rework applications.
- Limited footprint configurations (L-shapes, etc)
- Available in select Laird standard board-level sizes or custom configurations

MARKETS OR APPLICATIONS

- Computing
- Telecommunications / Datacom
- Automotive
- Consumer Electronics
- SMART Metering
- Aerospace / Defense
- Medical
- Industrial & Instrumentation



REMOVL™

The ReMovl feature incorporates the ReCovr attachment mechanism applied to the pickup bridge of a BLS frame to allow for easy, tool less detachment of the bridge after the frame is soldered to the PCB. Ease of detachment along with reliable and consistent separation force will allow for automated detachment.

FEATURES

- Detachment is permanent – cannot be replaced like ReCovr
- Min Height: 2.0 mm (.080") Lower heights required Product Development Review
- Top Flange Width: 1.8 mm (.071")
- Flatness: Part Size Dependent, but typical to other Frame BLS parts
- Configurations Min 4 legs/branches required (see BLS Style options)
- Limitations: Must be folded or rigid corner type BLS. (No fully drawn parts.)
- Pull Force (Typ) 0.5 – 1.0 lbs

MARKETS

- Ideal for customer manufacturing processes where post reflow detachment of the pickup bridge is required or desired. Applications that often require the bridge to be detached include:
 - Inspection
 - Rework
 - TIM Assembly into cover
 - Cover with contact fingers to chip, etc.
 - Noise / Vibration concerns of bridge to cover

Note: Due to delicate nature of the attachment of the pickup bridge, there will be some risk to the bridge separating during pick and place operations depending on customer manufacturing processes. Pick and place head depth tolerance (z axis) -.020"



BOARD LEVEL SHIELDS

INTRODUCTION

The complexities of today's electronics pose several design challenges. Resolving EMI needs to be balanced with space, weight and production restraints. When designing a custom shielding solution, beginning in the earliest stages of the application design allows effective elimination of EMI while meeting all specifications.

Laird board level shielding experts work through all phases of development. From design, rapid prototyping and pre-production through production and automated packaging, Laird has the experience to help speed a product to market and stay within budget.

To increase manufacturing throughput and reduce costs, Laird has developed a proprietary in-line production process that includes part formation, wash, assembly, inspection and automated packaging.

By integrating quality processes, board level shield quality and performance is ensured from design stage through final packaging. One process is the automated co-planarity inspection system. Laird replicates the customer application by measuring shields in the same plane as the printed circuit board. This is accomplished without "securing" or "touching" shields, which could throw off measurement and/or deform parts. Laird measures shields immediately prior to placement into carrier tape at speeds that match automation packing. Shield base materials include our exclusive Shield-Lite™, CRS 1008/1010, beryllium copper alloys, nickel-silver alloys, copper-based alloys and spring steels. All shields are fully solderable.

ONE-PIECE SHIELD DESIGN LOW COST/EXCELLENT EFFECTIVENESS

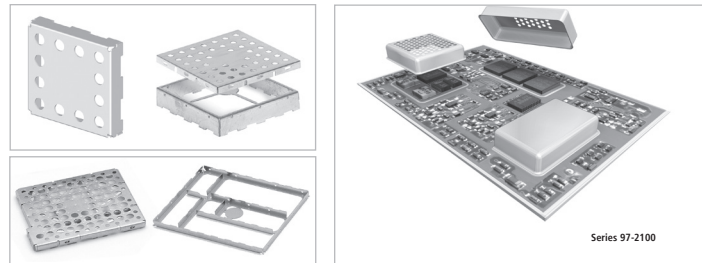
Custom surface mount shields are available in both one-piece and two-piece designs. One-piece shields provide six sides of protection, with the sixth side being the board itself. One-piece designs offer economical shielding alternatives where access to covered components for repair is not necessary.

TWO-PIECE SHIELD DESIGN QUICK, EASY REPAIR AND INSPECTION OF COVERED COMPONENTS

Two-piece board level shields offer users the flexibility to inspect or repair shielded components without having to risk board damage by removing the entire shield. Covers snap on and off with ease, making repairs quicker and easier, and reducing board re-work. Two-piece shields are available pre-assembled or unassembled. Large locking dimples snap into slots on covers to provide mechanical retention force. Smaller grounding dimples provide electrical grounding for proper shielding and to prevent rattle. Two-piece shields survive drop, shock and no-rattle tests. Here are critical test results:

- Able to withstand acceleration of 4g from 10 Hz to 2000 Hz for three hours in each of three planes as per SAE J1455
- Pass EN 50 155 for railway electrical equipment including vibration test of 30g from 5 Hz to 200 Hz in 3 directions and a shock test with 500 m/s for 11/ms
- Pass standard telecommunications drop tests [6 faces, dropped 1 meter onto concrete floor]

Notice: The data set forth in all text, tables, charts, graphs and figures herein are based on samples tested and are not guaranteed for all samples or applications. Such data are intended as guides and do not reflect product specification for any specific part. Material properties are for reference only. Product testing by purchaser is recommended to confirm. Laird assumes no liability for product failure unless specifically stated in writing.



MULTI-COMPARTMENTAL SHIELD DESIGN SHIELD MULTIPLE CIRCUIT GROUPS SAVE PCB SPACE AND PRODUCTION TIME

Multi-compartmental shields feature internal dividing walls of one material thickness and meet all on-board shield requirements for FCC, VDE, CISPR and CE. These shields are available in two-piece designs, either assembled or unassembled. Our unassembled versions allow for automatic optical inspection prior to cover placement. As in all our shielding offerings, Laird proprietary process for 100% automatic optical inspection verifies co-planarity including inner walls.

DRAWN BOARD LEVEL SHIELDS SEAMLESS CORNERS ADDRESS HIGH-FREQUENCY LEAKAGE

As microprocessor speeds continue to increase, so does the potential for EMI leakage through the smallest apertures in board level shields. Laird drawn board level shields are designed to provide additional near-field and far-field circuit isolation (attenuation) at higher frequencies by eliminating the apertures found in the corners of traditional board level solutions. Drawn board level shields utilize small ground trace sizes, thereby preserving space on the circuit board.

- Solid corner designs when additional circuit isolation (attenuation) is required at higher frequencies
- Available in custom heights up to .250" (6,4 mm) with length and width dimensions from .300" (7,6 mm) to 2.0" (50,8 mm)
- Tape and reel packaging provides an economical and automated SMT attachment method
- Available in cold rolled steel, brass, stainless steel and nickel silver
- Molded Compartment Shields and Form-In-Place elastomers can be combined with drawn board level shields to achieve shielding of multiple components with a single part
- Available with an EZ Peel scored cover feature; allows for easy top section removal for component repair and re-sealing
- Ventilation holes as needed for solder outgassing.
- Online shielding effectiveness calculator

SURFACE MOUNT SHIELDS MATERIAL VARIATIONS

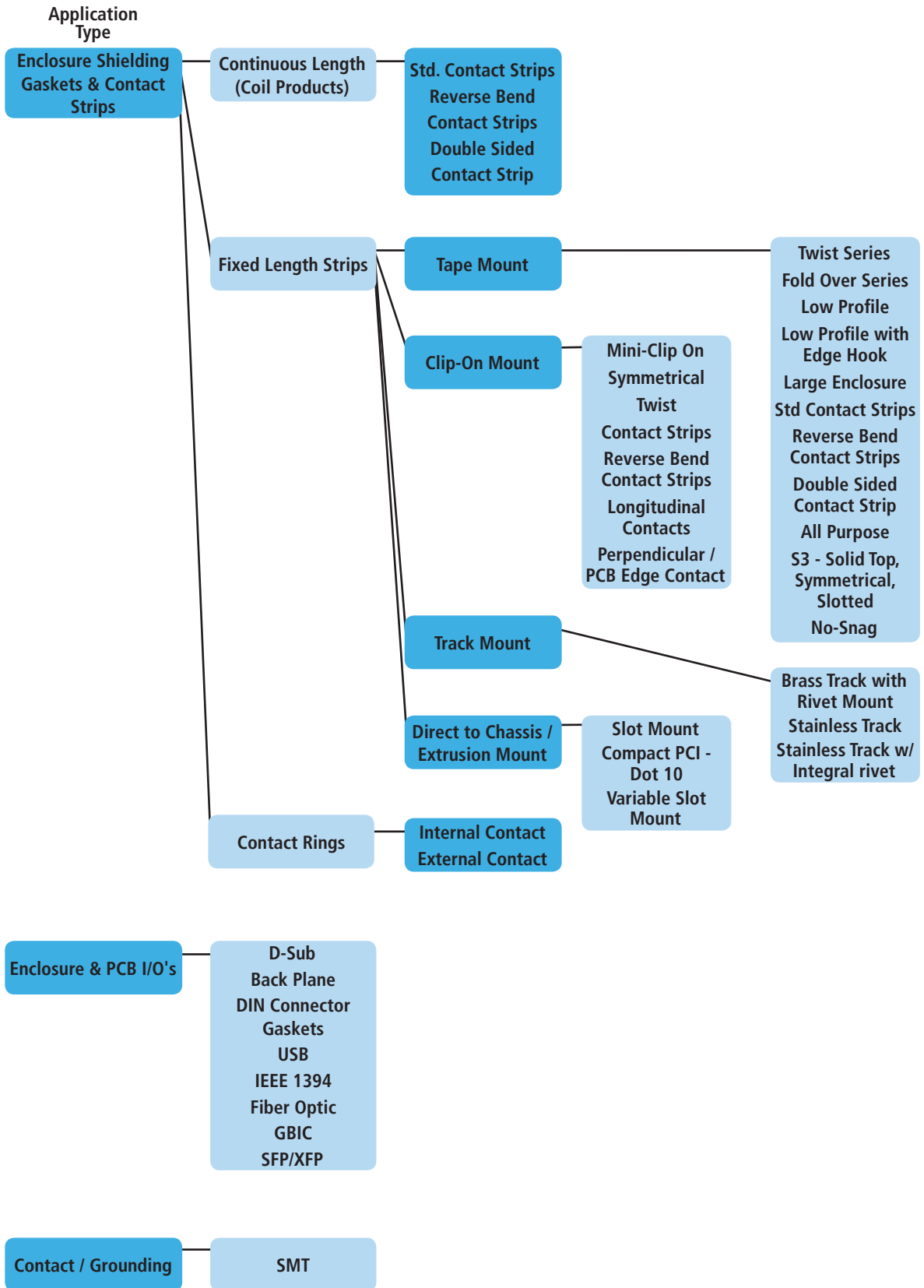
RAW MATERIAL*	THICKNESS in (mm)	COMMENTS
Cold Rolled Steel 1008/1010	0.005 to 0.090 (0,127 to 2,286)	Pre-plated Tin
Nickel-silver alloys	0.004 to 0.016 (0,102 to 0,406)	No plating required for SMT solderability
Phosphor Bronze alloys	0.004 to 0.020 (0,100 to 0,510)	Pre-tempered & Preplated

*Other materials may be available, please consult sales.

Note: Co-planarity dependant on design

FINGERSTOCK

PRODUCT SELECTION GUIDE



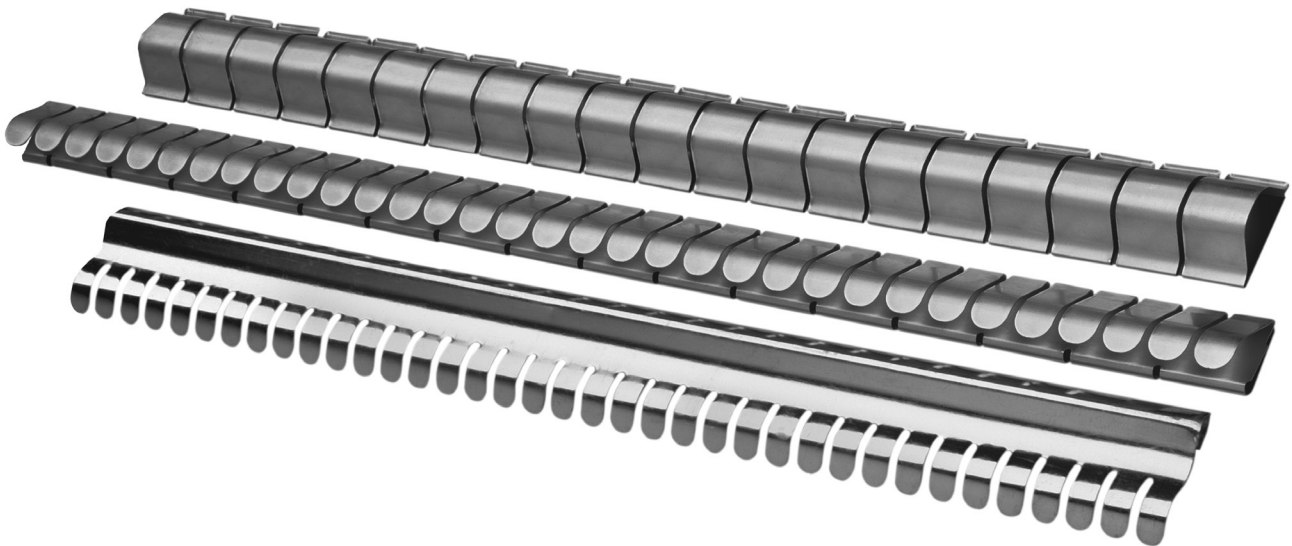
FINGERSTOCK

Engineered metal Fingerstock solutions from Laird dates from 1938. Laird specializes in designing miniature parts of thin strip metal in quantities ranging from thousands of pieces to millions of pieces. With over 3,400 standard parts, Laird probably already has an off-the-shelf solution that meets your application's requirements.

When custom designs are needed, Laird engineering staff helps construct efficiencies in performance, cost and manufacturability from the very beginning stages of the application.

Laird specialized capabilities:

- Assembly • Heat staking (both hand and automatic)
- Heat treating • In-house die and fixture manufacturing
- Multislid equipment • Photoetching
- Plating • Progressive die stamping
- Prototype fabrication • Resistance welding
- Riveting • Secondary fabrication
- Wire EDM

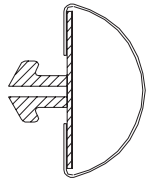


FINGERSTOCK MOUNTING METHODS

UNIVERSAL MOUNTING

A stainless steel mounting track is available for use with our full line of gasketing materials. Its unique design offers a secure mounting option versatile enough for use with fingerstock, ElectroNit[®] mesh, ElectroSeal elastomers, UltraSoft[®] Knit and fabric-over-foam products.

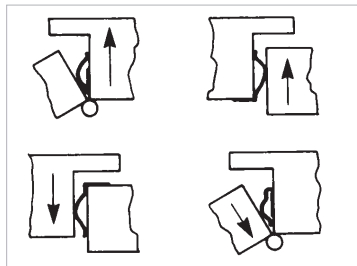
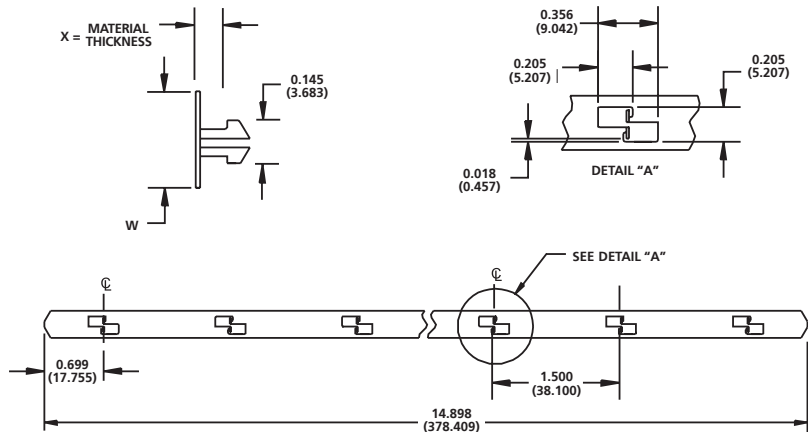
PART NUMBER	WIDTH
0095-X996-00	0.310 (7.874)
0095-X997-00	0.430 (10.922)
0095-X998-00	0.600 (15.240)



Universal Mount

MATERIAL THICKNESS
A = 0.030 (0.762)
B = 0.045 (1.143)
C = 0.060 (1.524)
D = 0.090 (2.286)
E = 0.150 (3.810)

To identify proper mounting track, select width and corresponding part number from the above chart. Replace the "X" with required material thickness.



^ Shielding gaskets may be mounted for either wiping or compression closing applications. Proper positioning of the shielding gasket must take into consideration the closing design and the configuration of the mounting surface.

Laird shielding devices may be mounted quickly and easily using any of several different methods. Each installation method is described in the text that follows. However, if you should run into a unique situation not resolved by any of these methods, give us a call. More than likely we can provide the exact answer you need.

RIVET MOUNT

Riveting produces a tight, long-lasting installation. Either plastic or metal rivets may be used.

SLOT MOUNT

Slot mounted parts are easily installed using slots where bi-directional movement is required. Simply install part into one slot and snap it into the second slot or over the edge of the frame.

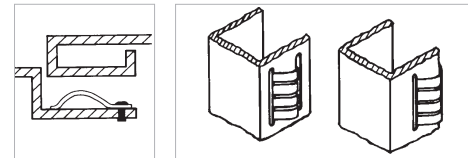
ADHESIVE MOUNTING

Sticky Fingers[®] is an instant, pressure-sensitive adhesive bonding system, ideal for all-purpose contact strips for metal cabinets and electronic enclosures, and is unaffected by temperatures from -67 to +250°F (-55 to +121°C).

Simply follow these four easy steps:

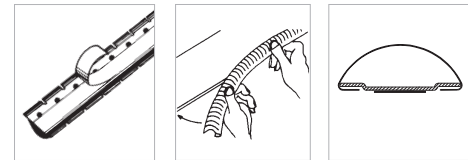
1. Remove all grease and oily residue with solvent. Smooth the mounting surface with emery cloth.
2. Peel off protective paper backing.
3. Place gasket in correct position. (See mounting methods diagrams A through E.) Press firmly to ensure a good adhesive bond. Avoid repositioning, which might impair the effectiveness of the adhesive or may bend or kink the strip.

NOTE: On items where fingers cover the solid portion of the gasket, pressure may be applied by inserting a mandrel in the strip and pressing down. For contact strips with Magnefil[®] insert, simply press down on the fingers.



Rivet Mount

Slot Mount



Sticky Fingers[®]

Clip-On Mounting

Tape Track Mounting

4. Allow 24 hours minimum curing time.

Standard parts are supplied with nonconductive tape. For rough surface applications, such as flame-sprayed surfaces, 0.010 in. (0.254 mm) thick nonconductive tape is recommended. Optional conductive tape is also available. Contact a sales department representative for additional ordering information.

CLIP-ON MOUNTING

Clip-on gaskets hold firmly in place due to their own spring characteristics. Simply push the strips onto the edge or flange of the door or enclosure. Also available are clip-on gaskets with either "T" or "D" lances.

TAPE TRACK MOUNTING

Stainless Steel mounting track with PSA (pressure sensitive adhesive) is available on the Symmetrical Slotted Series and Slot Mount Series.

WELDING

Welded mounting requires simple, traditional welding techniques.

SOLDERING

Solder mounting requires normal low temperature soldering techniques, including cleaning and fluxing of parts with common copper flux materials.

FINGERSTOCK

ORDERING INFORMATION

Part Number Format

Example:
 Stock Item — Unique Part No. — Finish I.D.
 0097 — 0520 — 02

- In the above example, Laird part number 0097-0520-02 is a 97-520 RFI/EMI shielding gasket with a bright finish
- When ordering UltraSoft® items, the stock item prefix will be 0098 or 0078. The above example in UltraSoft would be 0098-0520-02.
- When ordering coil, the prefix 0C should precede the stock item number; for example: 0C97, 0C98, 0C77 or 0C78
- When ordering stainless steel items, the stock item prefix will be 0095
- Standard plating finish is 0.0001 in. (0.0025 mm) min. [gold 0.00005 in. (0.0013 mm) min.] but can be varied to meet your custom needs
- Modifications to standard parts are specified by an X (following finish I.D.) for quoting only. Upon ordering, a specific part number will be assigned.
- For tape options, see Adhesive Mounting — Sticky Fingers® on page 16
- Use the catalog number for the unique part number and refer to the following chart for finish I.D.

Plating Finishes

Finish Designation	Finishes for Fingerstock Products (BeCu and RCC)	Laird ID	Specifications	Specification Details*
Unplated	Bright Finish	02	Laird Designation	Unplated, Bright or Ultrasoft surface
	Solderable Unplated	21	Laird Designation	Solderable bright finish
Gold	Gold	03	ASTM B 488 / SAE AMS 2422	Type I & II, grade C, 1.27 - 2.5 µm thick
	Gold/Nickel Underplate	10	ASTM B 488 / SAE AMS 2403	Type I & II, grade C, 1.27 - 2.5 µm thick
Silver	Silver (matte)	04	ASTM B 700 / QQ-S-305	Type II, grade A, 2.5 - 7.6 µm thick
Cadmium**	Cadmium + Yellow Chromate	05	ASTM B 766 / AMS QQ P 416	Type II, class 5, min 5 µm thick
	Cadmium + Clear Chromate	06	ASTM B 766 / AMS QQ P 416	Type III, class 5, min 5 µm thick
Tin Lead**	Tin Lead [60/40] Solder	07	ASTM B 579 / SAE AMS P 81728	7.6 - 12.7 µm thick
Nickel	Dull Nickel	09	ASTM B 689 / SAE AMS 2403 (QQ-N-290)	2.5 - 7.6 µm thick*
	Bright Nickel	19	ASTM B 689 / SAE AMS 2403 (QQ-N-290)	2.5 - 7.6 µm thick*
	Sulfamate Nickel	24	ASTM B 689 / SAE AMS 2424	2.5 - 7.6 µm thick (1.27 - 2.5 µm underplate)
Electroless Nickel	Electroless Nickel	18	ASTM B 733 / SAE AMS C 26074	2.5 - 7.6 µm thick
Tin	Satin / Matte Tin	08	ASTM B 545 / MIL-T-10727C	Type I, 2.5 - 7.6 µm thick
	Bright Tin	17	ASTM B 545 / MIL-T-10727C	Type I, 2.5 - 7.6 µm thick
Zinc***	Zinc + Yellow Chromate	16	SAE AMS 2402 / ASTM B 633	Type II, 2.5 - 7.6 µm thick
	Zinc + Clear Chromate	15	SAE AMS 2402 / ASTM B 633	Type III, 2.5 - 7.6 µm thick

Notes:

- Laird standard plating codes are defined according to the above specifications. Any non-standard requirements (different classes or types within a specification) must be clearly identified on the production prints.
- The plating thickness indicates the thickness measured on the primary out-surface of fingerstock products.

* Class 1, Grade G in QQ-N-290

** Outsourced process

*** Laird provides RoHS compliant Trivalent Chromate

FINGERSTOCK

ULTRASOFT® SERIES

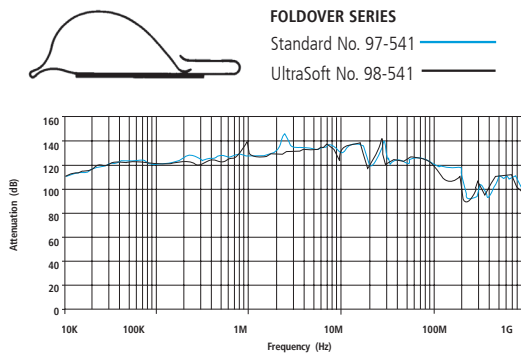
Series UltraSoft® fingers have been designed for communications, computers and electronic systems designers concerned with EMI compliance and lightweight enclosure designs. Available in the same full range of standard configurations, UltraSoft fingers offer designers greater flexibility and versatility than ever before—permitting more extensive use of lighter, thinner construction materials to help cut costs and/or enhance system performance.

The unique advantages of UltraSoft (98-Series) fingers include:

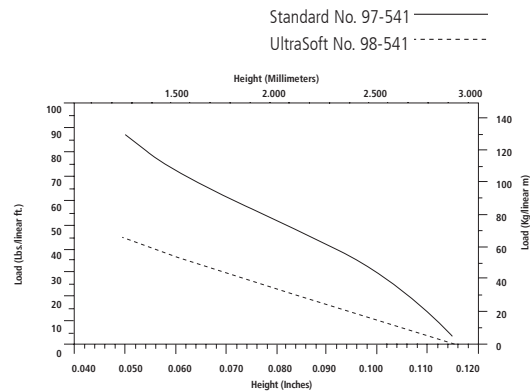
- The lowest compression forces in the industry
- Shielding effectiveness comparable to similarly configured standard 97-Series parts
- Wide selection of sizes and configurations
- Low compression force version available for virtually every standard shielding product

UltraSoft (98-Series) products are available in the same lengths as the standard (97-Series) products. Please refer to the appropriate standard product pages for specific information. All UltraSoft products are also available in your choice of finishes.

Shielding Effectiveness Comparison



Compression Force Comparison



RECYCLABLE CLEAN COPPER™

Recyclable Clean Copper products meld strong stability and tensile strength with high levels of thermal and electrical conductivity making it suitable for utilization in both grounding and shielding applications at a cost that is comparable with traditional metal EMI shields. Shielding effectiveness is similar to other copper alloys with values over 100 dB shielding effectiveness readily achieved.

Recyclable Clean Copper is fully compliant to EU Directive 2002/95/EC and alleviates the environmental, safety and segregation concerns associated with the traditional use and recycling of beryllium-based copper alloys.

This alternative material exhibits excellent corrosion resistance, platability, solderability and stress relaxation properties.

The product is targeted at high volume designs. Custom stampings are available upon customer request. As with all of Laird metal fingerstock gaskets, Recyclable Clean Copper is completely flameproof.

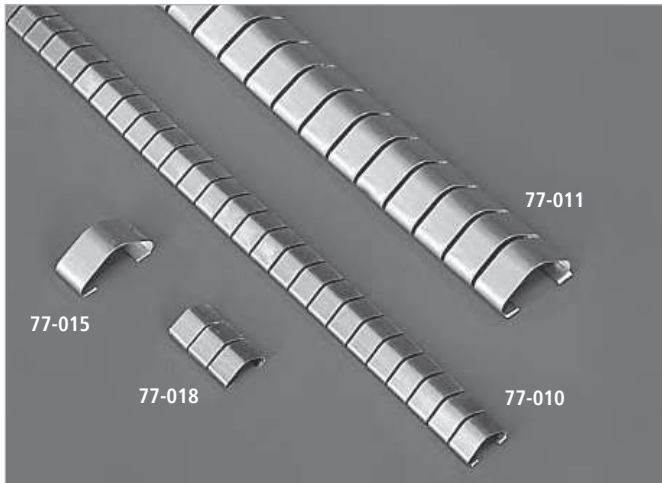
For mounting methods and other specific product information, please see Laird catalog "Fingerstock, Gaskets and Metal Grounding Products".

To find out more about this exciting new product available from Laird please contact sales for assistance or visit us at www.lairdtech.com.

Recyclable Clean Copper (RCC) beryllium-free EMI shielding offers customers an excellent alternative to beryllium containing alloys (BeCu) in a wide range of slotted applications. The conversion of part number (Stock Item) of BeCu to RCC:

BeCu	RCC
0077-	0067-
0c77-	0c67-
0097-	0087-
0c97-	0c87-
0078-	0068-
0c78-	0c68-
0098-	0088-
0c98-	0c88-

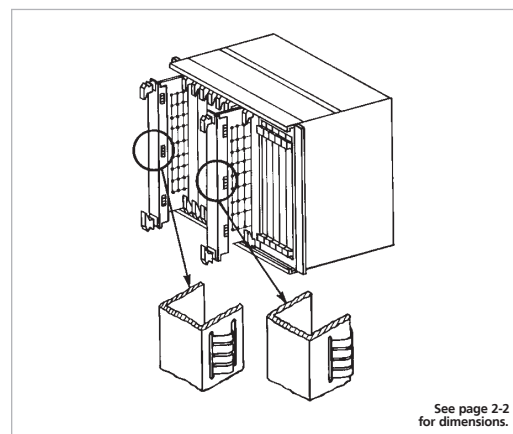
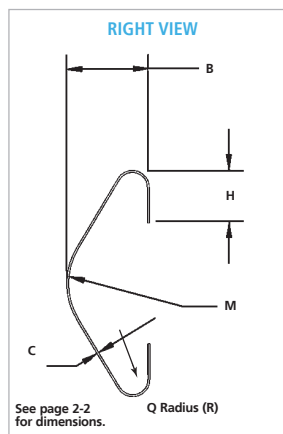
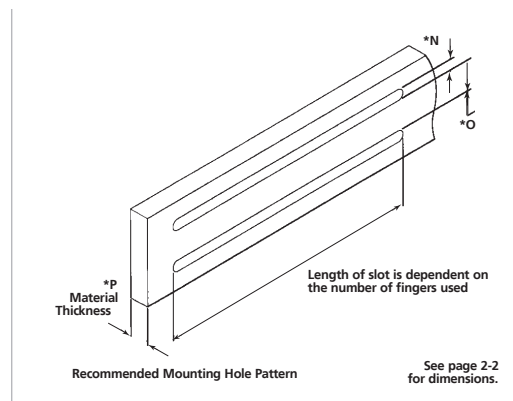
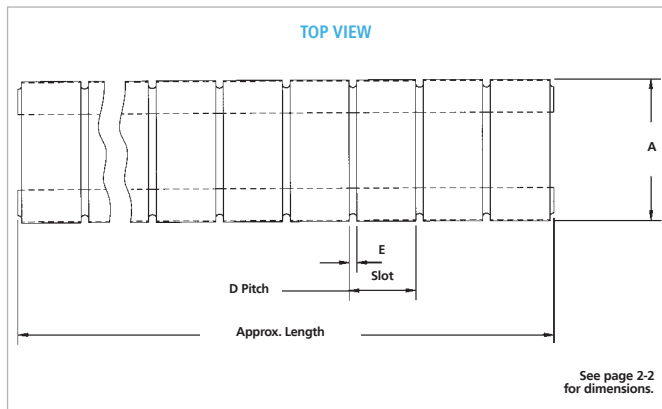
FINGERSTOCK SLOT MOUNT SERIES



Laird Slot Mount Series of beryllium copper shielding gaskets is designed for use in a wide variety of slotted applications. This economical product line is ideal for both grounding and shielding applications.

- Minimal slot fabrication cost
- Easy and cost-effective installation since fasteners and adhesives are not required
- Bi-directional wiping and compression action to accommodate a wide variety of designs
- Ideal for grounding and shielding in the following electronic enclosure applications:
 - Front panel handles
 - Chassis covers
 - Plug-in units
 - Backplanes
 - Subrack assemblies
- Standard (77-Series) and UltraSoft® (78-Series low compression versions) are also supplied in 25.0 ft. (7.6 m) coils

The Slot Mount Series is available in your choice of finishes, see page 17.



Slot Mount Series are available with Universal and Tape Track mounting options, see page 1-9, 1-10.

FINGERSTOCK DUAL SLOT SERIES

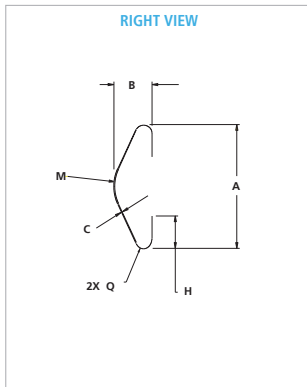
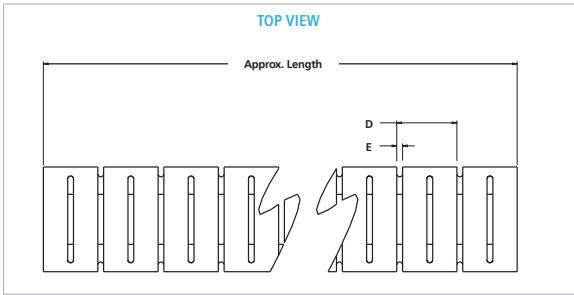


Part No. 77-075, 77-093, 77-110

Dual slot mount parts are available for a variety of slotted applications. The dual slot feature optimizes the compression force and provides a good operating range. This product is ideal for both shielding and grounding applications. The bi-directional wiping and compression action accommodates a wide variety of designs. Ideal for use in the grounding and shielding of front panel handles, sub rack assemblies, plug-in units, back planes and other electronic enclosure applications.

DUAL SLOT SERIES DIMENSIONS

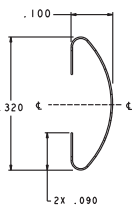
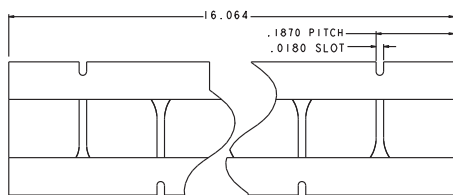
SERIES	A	B	C	D	E	H	M	N	O	P	Q	LENGTH # OF		
												APPROX.	FING.	
77-075	0.325 (8.255)	0.100 (2.54)	0.003 (0.076)	0.187 (4.750)	0.018 (0.457)	0.085 (2.159)	0.110 (2.794)	0.090 (2.286)	0.260 (6.604)	0.040 (1.016)	0.020 (0.508)	16.000 (406.400)	86	—
77-093	0.325 (8.255)	0.140 (3.556)	0.003 (0.076)	0.187 (4.750)	0.018 (0.457)	0.085 (2.159)	0.110 (2.794)	0.090 (2.286)	0.260 (6.604)	0.040 (1.016)	0.020 (0.508)	16.000 (406.400)	86	—
77-110	0.325 (8.255)	0.125 (3.175)	0.003 (0.076)	0.187 (4.750)	0.018 (0.457)	0.085 (2.159)	0.110 (2.794)	0.090 (2.286)	0.260 (6.604)	0.040 (1.016)	0.020 (0.508)	16.000 (406.400)	86	—



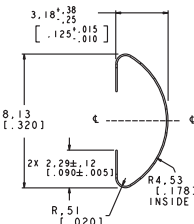
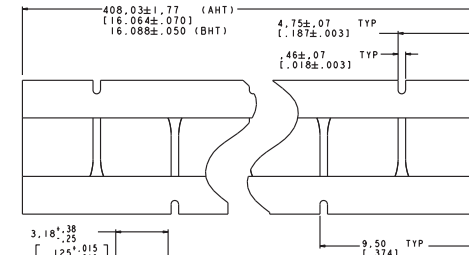
All dimensions shown are in inches (millimeters) unless otherwise specified.

TEARDROP SERIES

Teardrop slot fingerstock gaskets include a shaped cut developed to optimally distribute the mechanical stresses when the part is compressed, and to avoid excessive insertion forces on a stack of rack mounted modules. Please contact a Laird technical resource to review current applications that might benefit from incorporating this feature into existing gaskets where minimal insertion force is desired. Patent # 7,112,740



0097-0987



0097-0988

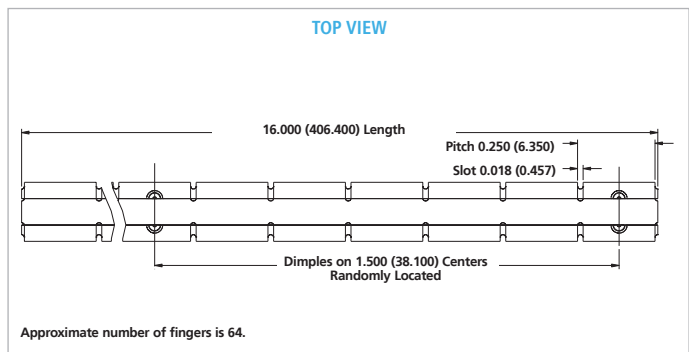
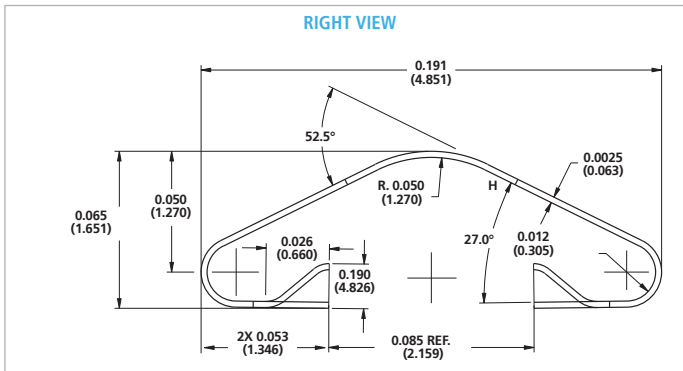
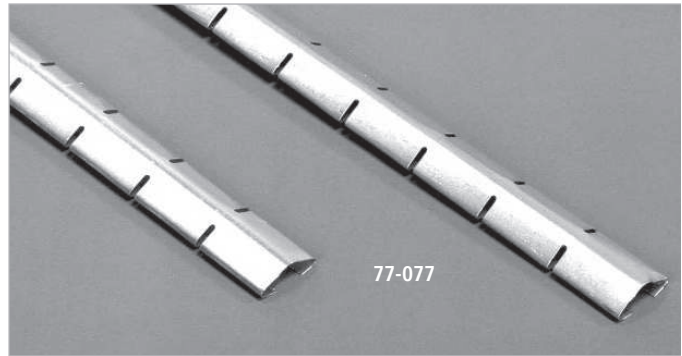
FINGERSTOCK

COMPACT PCI SYMMETRICAL MOUNT

Laird offers a unique product designed to shield the front panels of IEEE standard 1101.10 card cages, commonly referred to as Dot-10, called the Compact PCI gasket.

This front panel shielding has been designed to shield between the front panels on sub racks and plug-in units. This is a beryllium copper solid top symmetrical slotted fingerstock strip pre-plated in sulfamate nickel. It is designed to mount on the "T" shape on a front panel extrusion (see below). Specially designed for wiping applications, this configuration allows total symmetrical compression action with bi-directional engagement.

Standard size shown is based on the 9.5" (241.300) length per the Dot-10 standard. Other lengths and plating finishes are available for your specific application.



ALTERNATE SLOT SERIES

Laird alternating slot/cut design is designed for use in a wide variety of slotted applications, such as front panel handles, plug-in units, subrack assemblies, chassis covers and backplanes.

Available in a wide variety of plating finishes to meet galvanic compatibility requirements.

Available in UltraSoft™, low compression series (-078).

