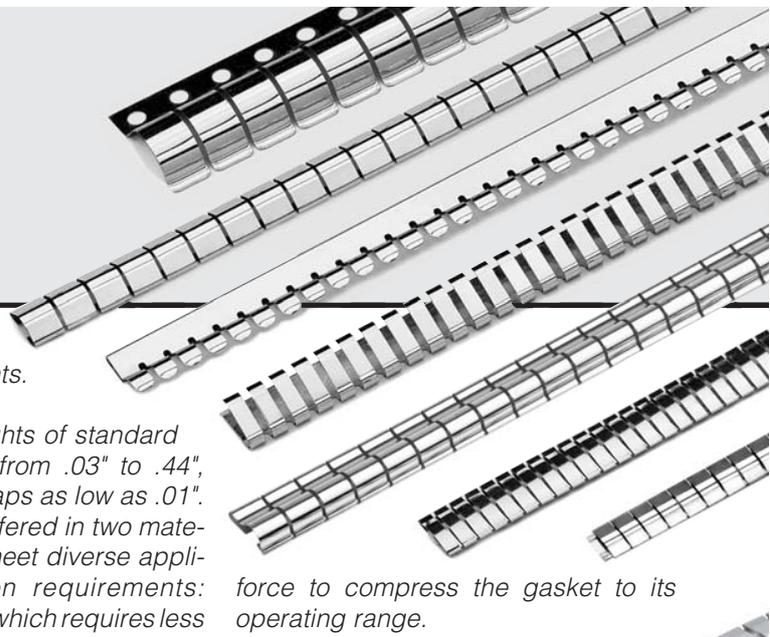


Shielding Strips



Tech-Etch offers the most complete line of standard BeCu shielding strips in the industry. Shielding strips are designed for a wide variety of application requirements. They are available in strips ranging from 16 to 24 inches in length, in continuous coils up to 35 feet long, as single fingers, or cut to requested full-finger lengths. Consult our engineering department for special modifications to

suit your requirements.

Uncompressed heights of standard finger stock range from .03" to .44", which will occupy gaps as low as .01". Many gaskets are offered in two material thicknesses to meet diverse application compression requirements: "Standard" and "TF", which requires less

force to compress the gasket to its operating range.

Beryllium Copper

Beryllium Copper (BeCu) is a high performance metal which can be fabricated into a wide variety of components. Its mechanical and electrical properties make it the ideal material for EMI/RFI shielding products.

Beryllium copper's electrical properties provide shielding effectiveness over an extremely broad frequency range. At the same time, its mechanical properties yield a high deflection range, in addition to a long life

without compression set. BeCu finger stock provides maximum spring properties for strength and fatigue resistance, plus excellent conductivity. Available in many plating options, BeCu has a high cycle time and conforms to large gap variations making it the best material for attenuation.

DiamondBack (dB)

DiamondBack shielding with a textured contact surface increases attenuation at 2.5 GHz and above. Nonabrasive DiamondBack

texturing can be applied to most of the standard profiles to achieve up to a 20 dB attenuation improvement at high frequencies without raising the compression force. It has hundreds of raised dimples providing a smooth texture that enhances the conductivity between the gasket and mating surface. DiamondBack is available on numerous mounting and finish options, and offers superior longevity over plated fabrics.

Stainless Steel

Stainless steel is an economical alternative to beryllium copper for shielding applications where high attenuation is not required. It does not have the electrical conductivity of

BeCu and is stiffer. Mechanical considerations generally limit the use of stainless steel to low profile strips and twisted contacts. Items are identified by (SS) in the notes.

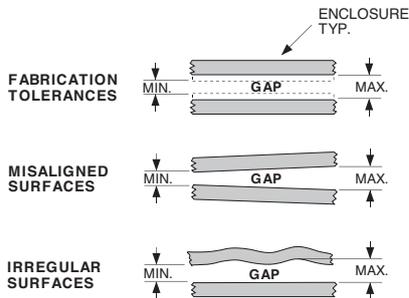
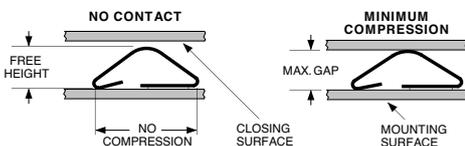
Attenuation

For maximum attenuation of a gasketed gap, the contact resistance of the mounting joint and closing joint must be very low and remain so throughout the life of the product. While a gasket may have the potential for very high attenuation under ideal conditions, over time oxidation, corrosion and dirt

at the mounting and closing joints may reduce effectiveness. Factors influencing contact resistance over the life of the product are pressure (closing force), plating, and wiping action. Our engineers can help you determine the optimal specifications to ensure sustained attenuation.

Compression

The purpose of shielding is to occupy and thereby shield the gap that exists between two adjoining surfaces. In order to be effective, shielding gaskets must be able to occupy both the maximum and minimum gaps, which exist due to fabrication tolerances, misalignment of surfaces, or irregular surfaces. Proper compression management is essential to ensure effective EMI shielding. Tech-Etch will be pleased to assist you in specifying the most effective gasket for your requirements.



$$\text{OPERATING RANGE} = \text{MAX. GAP} - \text{MIN. GAP}$$

Materials

Beryllium Copper (BeCu) ASTM B194 Material Specifications

Chemical Composition

Beryllium	1.80-2.00%
Cobalt plus nickel	0.20% Min.
Cobalt + nickel + iron	0.6% Max.
Copper	Balance

Physical Properties (heat treated)

Electrical conductivity (% IACS)	22-25
Modulus of elasticity (psi)	18.5×10^6

Mechanical Properties (heat treated)

Temper (1,000 psi) ¼ HT ½ HT		
Tensile strength	175 Min.	185 Min.
Yield strength		
.2% offset	150 Min.	160 Min.

Stainless Steel Material Specifications

Type 301 Stainless steel possesses good heat and corrosion resistance.

AISI 301 Analysis

C: .15 Max.
Mn: 2.00 Max.
Si: .750 Max.
P: .040 Max.
S: .030 Max.
Cr: 16.00/18.00
Ni: 6.00/8.00

Shielding Strips Installation Options



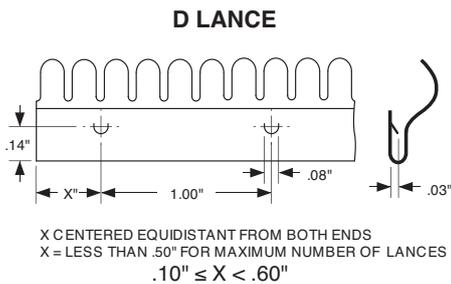
Shielding strips are designed for a wide variety of application requirements, and can be supplied cut to length or full size in any of the following mounting configurations. Consult our engineering department for special modifications to suit your requirements.

If you know the Shielding Strip Part Number you are looking for, see the directory on page 7.

Clip-on Mounting



Clip-on Mounting provides a reliable mechanical installation when there is an accessible mounting flange. Various flange thicknesses can be accommodated, and lances can be added to enhance the holding force to the flange.

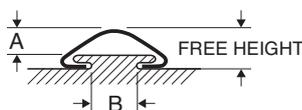


Certain Clip-on strips have lance locations other than shown above. These dimensions are specified on the product drawings in the Clip-on section.

Extrusion Mounting

Tech-Etch "S" Series symmetrical shielding strips can be installed on extrusions specially designed to provide a useful free height. A durable shielding solution for applications requiring bi-directional motion. The drawing below illustrates guidelines for designing the extrusion.

Dimension "A" less allowance for initial contact is the compression range. Dimension "B" should be approximately .020" less than the open dimension of the shielding strip.



Stick-on Mounting

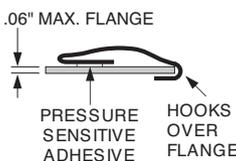


Pressure Sensitive Mounting provides double-sided pressure sensitive transfer tape for a fast, reliable installation. 3M F9469PC transfer tape or equivalent may be used at ambient temperatures from -67°F to 300°F. Apply only on a clean, oil-free surface, and allow a 24-hour cure time. Consult the factory for other adhesives and extended liner options.

STICK-ON GASKET



HOOK & STICK-ON GASKET



Hook and stick fingers are ideal for flange mounting applications requiring low compression forces and small gap shielding.

Non-conductive .010" thick adhesive may be specified for improved adhesion on rough surfaces. Conductive adhesives and extended liners are also available. Consult the factory for these options.

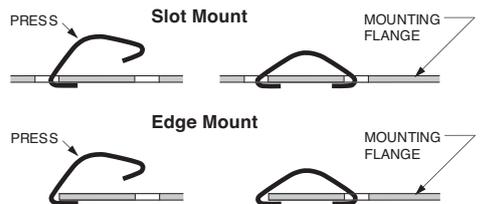
Special Mounting

Special Mounting shielding strips can be installed by spot welding or soldering. Rivets can be used for the 375A and 500A profiles and conductive pressure sensitive adhesives are available. Consult the factory.

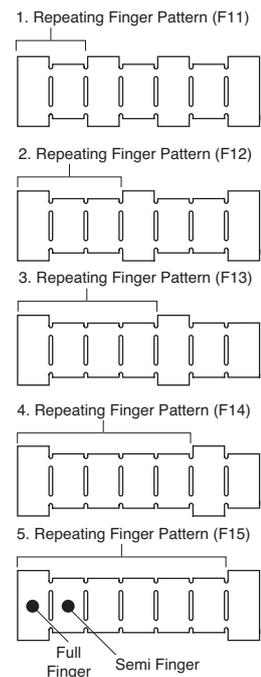
Snap-on Mounting



Slot and Edge Mount Symmetrical fingers using single or double fingers are very economical for applications such as sliding drawers, doors, rack-mounted assemblies and covers. They perform well in bi-directional applications and the snap-on capability makes them easy to install.



When continuous shielding is required the V Series or VE Series utilizing the same snap on mounting feature can be used. The figure below illustrates available repeating finger patterns for the V and VE Series.



Consult factory for the availability of other patterns.

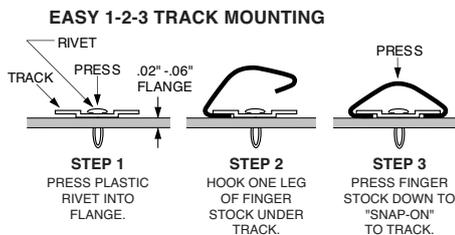
Track Installation Options & Accessories



Track / Extrusion Mounting

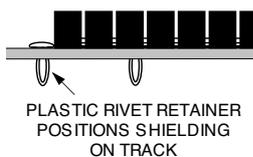
Track or extrusion mounted symmetrical fingers provide a durable shielding solution for applications requiring bi-directional motion, such as drawers and plug-in modules.

TR Series Track is typically installed with plastic rivets, but is also available with pressure sensitive tape for adhesive mounting. The track can be installed prior to the assembly of the finger strips to avoid damaging the fingers. See below. Photos at right illustrate several methods of retention, including "T" Retaining Caps. Retention stops can also be incorporated in the sheet metal.



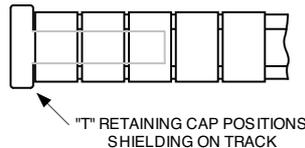
Plastic Rivets

Plastic rivets can be used to install Track and as rivet stops to retain shielding on a track as shown below and in the photo on the right. When used on a flange, the hole diameter for the rivet should be .125". Two rivets are available: PR45 and PR60 (See Track Accessories below.).

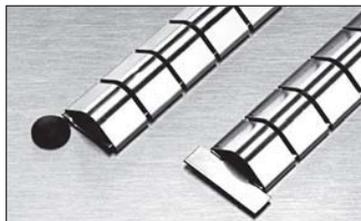
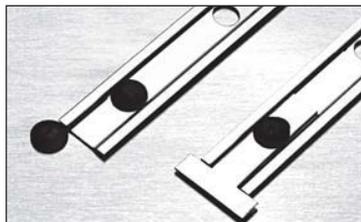


"T" Retaining Caps

"T" Retaining Caps (See Track Accessories below) can also be used to hold shielding on the Track as illustrated here.



Track the in top photo shows two shielding retainer options: Plastic Rivet Stop on the left and "T" Retainer on the right. Bottom photo shows the same track with shielding snapped into place.



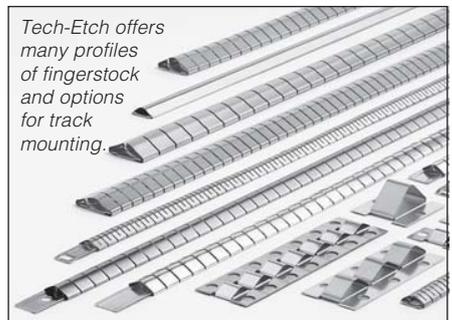
Pressure Sensitive Transfer Tape Mounting



Perhaps the easiest track mounting option is with double sided pressure sensitive transfer tape. Simply apply on a clean, oil-free surface, and allow a 24-hour cure time.

Omni Track

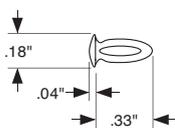
Omni Track is designed to provide a track type mounting for single finger applications. It is typically supplied with pressure sensitive tape for adhesive mounting. Holes are available for rivet mounting.



Track Accessories

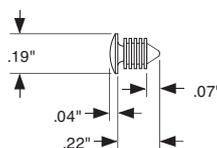
PR45 PLASTIC RIVET

Used on Snap-on Track and OMNI Mounting Pads.
Panel Hole Dia. .123" - .127"
Panel Thickness .02" - .06"
Order PR45 Rivets, if required for your application.



PR60 PLASTIC RIVET

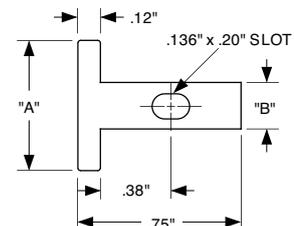
Used on Snap-on Track and OMNI Mounting Pads.
Panel Hole Dia. .118" - .125"
Panel Thickness .045" - .075"
Order PR60 Rivets, if required for your application.



TCXX "T" RETAINING CAPS

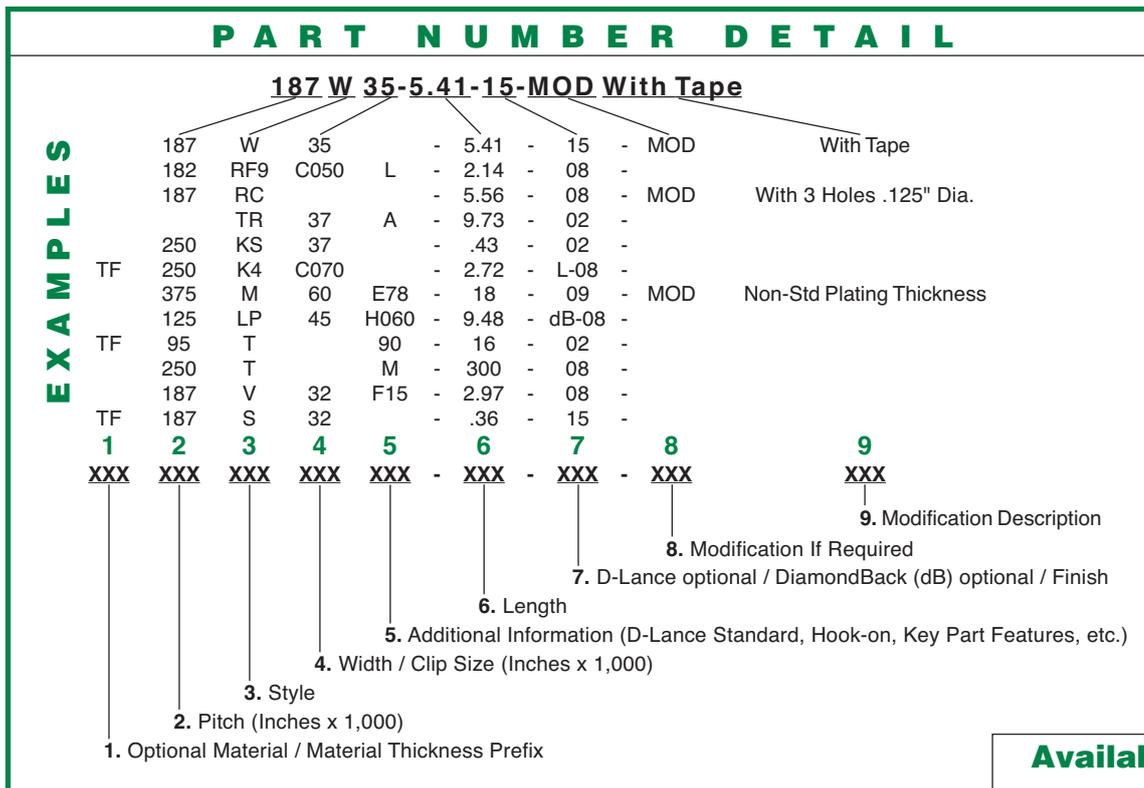
"T" Retaining Caps are used at the ends of Mounting Track to hold finger stock in place.
Material: Brass.
Finish: Bright.

"T" CAP	"A"	"B"
TC37	.45"	.16"
TC60	.70"	.26"
TC80	1.00"	.35"



How To Order Shielding Strips

Tech-Etch Part Numbers are unique because they describe the actual part. This makes it easy to order and also to understand the specifications of any strip. The chart below explains how to read and create Part Numbers.



Available Finishes	
Finish*	Ordering Code
Solderable	01
Clean and Bright	02
Gold	03
Silver	04
Cadmium/Clear Chromate	05
Tin Lead	07
Bright Tin	08
Nickel	09
Zinc/Clear Chromate	15
Electroless Nickel	18
Other	00

* For other requirements and specifications of these finishes, consult the factory.

- Optional Material / Material Thickness Prefix:** Leave blank for standard thickness. Add "TF" for low compression force. "SS" indicates Stainless Steel.
- Pitch:** Center-to-center distance from one finger to the next (Inches x 1,000).
- Style:** Part Style or Series.
- Width:** Part Width, typically measured parallel to fingers and slots.
Clip Size: "CXXX"=Clip Size, where XXX is typically flange size +.010".
- Additional Information:** "L"=Standard D-Lance; "H060"=Hook-on; "90"=90° Bend; "R" and "A, B, C, T"=Track features; "E50, E78"=Extended Leg; "M"=Clip-on Feature; "FXx"=Determines Repeating Finger Pattern for Variable Snap-on (See page 4.)
- Length:** Full Strips=Length to nearest inch as listed in catalog (24, 18, 16, etc.).
Length: Rolls=Length to nearest inch as listed in catalog (300, 420, etc.). Also add "M" to Additional Information for all T-Series rolls. (See column 5).
Length: All Cut-to-Length Parts= Length to 2 decimals: (.XX)=(Pitch) x (Number of Fingers) minus (one slot dimension). Since individual fingers may not be cut, length is a multiple of a full finger (the Pitch), less the slot dimension. Exceptions are 95A, 95T, 165T, 165T2, 250T, 500T and KS Series, where cut-to-length parts are to 2 decimals and: (.XX)=(Pitch) x (Number of Fingers).
- D-Lance:** "L-" for optional, non-standard D-Lance. **DiamondBack:** Optional DiamondBack texturing "dB"
Finish: See table for available finishes.
- Modification If Required:** Add "MOD" for all modified parts. A description of the modification is also required.
- Modification Description:** Specific description of the modification. For example: With 2 Holes .100 Dia., With Conductive Tape, Less Tape, Special Width, Non-Standard Tolerances, Non-standard Material Thickness, Non-standard Plating Thickness, Special Packaging, etc.