

SOFT-SHIELD Conductive Foam Brochure

Products and Custom Integrated Solutions



ENGINEERING YOUR SUCCESS.

Fabric over Foam Products & Custom Solutions

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Finding the Right Conductive SOFT-SHIELD EMI Gasket for You

Parker Chomerics family of SOFT-SHIELD electromagnetic interference (EMI) shielding gaskets are designed for EMI shielding and grounding applications that do not require a weather seal. Ideal as an economical low compression force solution, the SOFT-SHIELD brand consists of two types of gasket constructions:

- Conductive fabric wrapped around non-conductive low-density foam: Commonly referred to as “Fabric Over Foam” these gaskets are available in strip form and a variety of standard catalog and custom profiles.
- Silver-plated nylon fibers knitted into low-density foam: These products are

made in roll and sheet form and can be die cut into custom shapes.

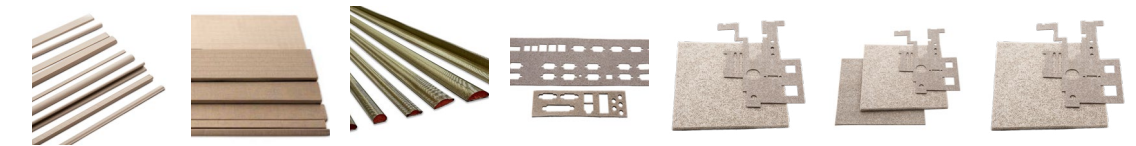
Product Features and Benefits:

- Economical price
- Low compression force
- High Shielding effectiveness
- No degradation of shielding effectiveness after 10,000+ deflection cycles or after accelerated aging
- Ideal for commercial electronic enclosures, medical electronics and other general industrial applications

- Available in many different standard shapes and sizes, with custom profiles and pressure-sensitive adhesive options also possible

Which Is Best for You?

There are many choices when it comes to SOFT-SHIELD gaskets from Parker Chomerics. Is compression set a concern? Is the application in shear? What shielding requirements do you have? High temperature concerns? Is it just a grounding application? Or perhaps you have green initiatives you need to meet. You'll find a SOFT-SHIELD solution for just about any shielding need.



SOFT-SHIELD	3500	3700	3800	4800	4840	4850	4860
Shielding Effectiveness (dB)	>100	>100	>100	95	60	95	95
Operating Temperature °F (°C)	-40 to 158 (-40 to 70)	-40 to 257 (-40 to 125)	-40 to 257 (-40 to 125)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	-40 to 158 (-40 to 70)	-40 to 257 (-40 to 125)
Product Type	Fabric Over Foam	Fabric Over Foam	Fabric Over Foam	Conductive Foam	Conductive Foam	Conductive Foam	Conductive Foam
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 HF-1	UL 94 V-0	UL 94 V-0	UL 94 V-0
Halogen Free	Available	Yes	Yes	Yes	No	No	Yes
Cost	\$	\$\$	\$\$	\$\$	\$	\$\$	\$\$\$
Profiles	Rectangular & Complex	Rectangular	Complex & Custom	Custom Die Cut	Custom Die Cut	Custom Die Cut	Custom Die Cut

SOFT-SHIELD® 3500

Plated-Fabric Wrapped Foam Economical EMI Shielding Gaskets for Electronics

Parker Chomerics SOFT-SHIELD® 3500 fabric-over-foam (FoF) EMI shielding gaskets are low-closure EMI shielding gaskets for indoor applications. Available in strip form, SOFT-SHIELD 3500 is an ideal solution for EMI shielding and electrical grounding in shear and compression. By combining the shielding effectiveness of an electrically conductive fabric along with the conformability afforded by a foam core construction, SOFT-SHIELD 3500 ensures both high shielding and reliability for the life of the equipment.

SOFT-SHIELD 3500 is flammability rated to UL 94 V-0 and is available with various profile cross sections each engineered to optimize mechanical form, fit and function while also optimizing electrical performance.

There are two fabric choices both wrapped around open cell urethane foam, available in either nickel-plated copper woven taffeta or nickel-plated copper polyester woven RipStop fabric with halogen-free versions of each. Each fabric option is available without pressure sensitive adhesive (PSA), with PSA or with a second PSA version with an extended liner for easier removal of the backing.

SOFT-SHIELD® 3500's wrap-around technology grounds the gasket from point to point, ultimately eliminating any EMI gaps, and typically requires less than 1 lb/in (0.175 N/mm) closure force, making it effective for low-closure-force applications.

SOFT-SHIELD 3500 takes less than 15% compression set, less than most other fabric-over-foam EMI gaskets on the market. This results in more reliable and repeatable shielding performance, is an excellent alternative shielding solution to traditional spring finger type products and makes this product family one of the most versatile EMI FoF products offered to the market.

Product Features

- >100 dB shielding effectiveness 20 MHz to 10 GHz
- Low closure force for optimum performance
- Low compression set of less than 15%
- Over 250 profiles available to the market
- Readily available in bulk, cut to length or with cut-outs / features
- Available with or without non-conductive pressure sensitive adhesive (PSA)

Typical Applications

- Server faceplates and blade cards
- Electronic enclosures
- Consumer electronics
- Door seals
- EMI window/vent seals
- Grounding applications



SOFT-SHIELD® 3500 Available Profiles

Contact Chomerics for any other special requirements and an updated profile list.



Table 1 - Rectangle Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3042	0.015 (0.38)*	0.472 (11.9)
3268	0.020 (0.51)	0.157 (3.99)
3216	0.020 (0.51)*	0.197 (5.00)
3232	0.020 (0.51)	0.394 (10.01)
3273	0.020 (0.51)*	0.500 (12.70)
3442	0.020 (0.51)*	0.925 (23.50)
3211	0.039 (0.99)	0.118 (3.00)
3214	0.039 (0.99)	0.157 (3.99)
3217	0.039 (0.99)	0.197 (5.00)
3224	0.039 (0.99)	0.276 (7.01)
3230	0.039 (0.99)	0.315 (8.00)
3233	0.039 (0.99)	0.394 (10.01)
3392	0.039 (0.99)	0.512 (13.00)
3420	0.039 (0.99)	0.709 (18.01)
3455	0.039 (0.99)	0.925 (23.50)
3291	0.039 (0.99)	1.142 (29.01)
3234	0.047 (1.19)	0.394 (10.01)
3434	0.050 (1.27)	1.320 (33.53)
3370	0.059 (1.50)	0.157 (3.99)
3219	0.059 (1.50)	0.197 (5.00)
3241	0.059 (1.50)	0.512 (13.00)
3418	0.060 (1.52)	0.118 (3.00)
3226	0.060 (1.52)	0.275 (6.99)
3389	0.060 (1.52)	0.394 (10.01)
3471	0.060 (1.52)	0.670 (17.02)
3101	0.078 (1.98)	0.118 (3.00)
3104	0.078 (1.98)	0.157 (3.99)
3120	0.078 (1.98)	0.236 (5.99)
3136	0.078 (1.98)	0.315 (8.00)
3258	0.078 (1.98)	1.378 (35.00)
3109	0.079 (2.01)	0.197 (5.00)
3133	0.079 (2.01)	0.276 (7.01)



Table 1 - Rectangle Profiles (continued)

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3151	0.079 (2.01)	0.394 (10.01)
3164	0.079 (2.01)	0.472 (11.99)
3187	0.079 (2.01)	0.591 (15.01)
3248	0.079 (2.01)	0.827 (21.01)
3402	0.079 (2.01)	0.984 (24.99)
3435	0.090 (2.29)	0.100 (2.54)
3110	0.098 (2.49)	0.197 (5.00)
3335	0.098 (2.49)	0.512 (13.00)
3249	0.098 (2.49)	0.826 (20.98)
3463	0.100 (2.54)	0.375 (9.53)
3102	0.118 (3.00)	0.118 (3.00)
3106	0.118 (3.00)	0.157 (3.99)
3153	0.118 (3.00)	0.394 (10.01)
3424	0.120 (3.05)	1.610 (40.89)
3148	0.125 (3.18)	0.375 (9.53)
3173	0.125 (3.18)	0.500 (12.70)
3421	0.125 (3.18)	1.000 (25.40)
3439	0.125 (3.18)	1.850 (46.99)
3472	0.125 (3.18)	2.000 (50.80)
3108	0.126 (3.20)	0.189 (4.80)
3128	0.126 (3.20)	0.252 (6.40)
3195	0.126 (3.20)	0.626 (15.90)
3557	0.134 (3.40)	0.689 (17.50)
3145	0.137 (3.48)	0.354 (8.99)
3298	0.138 (3.51)	0.197 (5.00)
3469	0.138 (3.51)	0.826 (20.98)
3336	0.138 (3.51)	0.512 (13.00)
3107	0.157 (3.99)	0.157 (3.99)
3129	0.157 (3.99)	0.250 (6.35)
3138	0.157 (3.99)	0.315 (8.00)
3318	0.157 (3.99)	0.354 (8.99)
3154	0.157 (3.99)	0.394 (10.01)

* This profile height is held to ±.010" (0.25mm)

SOFT-SHIELD® 3500 Available Profiles

Contact Chomerics for any other special requirements and an updated profile list.




Table 1 - Rectangle Profiles (continued)

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3423	0.160 (4.06)	0.577 (14.66)
3113	0.197 (5.00)	0.197 (5.00)
3139	0.197 (5.00)	0.315 (8.00)
3156	0.197 (5.00)	0.394 (10.01)
3190	0.197 (5.00)	0.591 (15.01)
3126	0.236 (5.99)	0.236 (5.99)
3149	0.250 (6.35)	0.375 (9.53)
3174	0.250 (6.35)	0.500 (12.70)
3270	0.251 (6.38)	0.251 (6.38)
3338	0.255 (6.48)	0.512 (13.00)
3572	0.255 (6.48)	1.000 (25.40)
3300	0.276 (7.01)	0.276 (7.01)
3323	0.276 (7.01)	0.394 (10.01)
3339	0.276 (7.01)	0.512 (13.00)
3159	0.315 (8.00)	0.394 (10.01)
3299	0.370 (9.40)	0.250 (6.35)
3150	0.375 (9.53)	0.375 (9.53)
3175	0.375 (9.53)	0.500 (12.70)
3313	0.394 (10.01)	0.315 (8.00)
3161	0.394 (10.01)	0.394 (10.01)
3358	0.394 (10.01)	0.787 (19.99)




Table 1 - Rectangle Profiles (continued)

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3342	0.413 (10.49)	0.512 (13.00)
3314	0.472 (11.99)	0.315 (8.00)
3346	0.472 (11.99)	0.590 (14.99)
3176	0.500 (12.70)	0.500 (12.70)
9118	0.500 (12.70)	1.181 (30.00)
3162	0.512 (13.00)	0.394 (10.01)
3529	0.590 (14.99)	0.394 (10.01)
3532	0.669 (16.99)	0.500 (12.70)
3438	0.740 (18.80)	0.510 (12.95)
4063	0.748 (19.00)	0.629 (15.98)
3461	0.750 (19.05)	0.250 (6.35)
3527	0.787 (19.99)	0.750 (19.05)
3360	0.787 (19.99)	0.787 (19.99)
3239	0.826 (20.98)	0.314 (7.98)
3235	0.866 (22.00)	0.375 (9.53)
3223	0.866 (22.00)	0.787 (19.99)
3103	0.905 (22.99)	0.500 (12.70)
9009	1.000 (25.40)	0.750 (19.05)
3228	1.023 (25.98)	0.393 (9.98)
3544	1.140 (28.96)	1.180 (29.97)
3486	1.375 (34.93)	0.750 (19.05)
3142	1.575 (40.01)	0.750 (19.05)

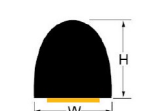


Table 2 - D-Shape Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3607	0.060 (1.52)	0.150 (3.81)
3664	0.070 (1.78)	0.180 (4.57)
3674	0.075 (1.91)	0.150 (3.81)
3610	0.079 (2.01)	0.197 (5.00)
3628	0.079 (2.01)	0.394 (10.01)
3601	0.090 (2.29)	0.091 (2.31)
3648	0.090 (2.29)	0.150 (3.81)
3671	0.100 (2.54)	0.250 (6.35)
3669	0.110 (2.79)	0.225 (5.72)

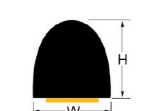


Table 2 - D-Shape Profiles (continued)

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3608	0.118 (3.00)	0.150 (3.81)
3622	0.118 (3.00)	0.354 (8.99)
3629	0.118 (3.00)	0.394 (10.01)
3651	0.120 (3.05)	0.250 (6.35)
3624	0.125 (3.18)	0.375 (9.53)
3682	0.130 (3.30)	0.188 (4.78)
3616	0.134 (3.40)	0.256 (6.50)

SOFT-SHIELD® 3500 Available Profiles

Contact Chomerics for any other special requirements and an updated profile list.




Table 2 - D-Shape Profiles (continued)

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3684	0.138 (3.51)	0.394 (10.01)
3650	0.142 (3.61)	0.252 (6.40)
3668	0.150 (3.81)	0.354 (8.99)
3685	0.157 (3.99)	0.500 (12.70)
9023	0.157 (3.99)	0.150 (3.81)
3649	0.157 (3.99)	0.236 (5.99)
3666	0.157 (3.99)	0.150 (3.81)
3631	0.177 (4.50)	0.393 (9.98)
3620	0.189 (4.80)	0.299 (7.59)
3611	0.196 (4.98)	0.196 (4.98)
3617	0.197 (5.00)	0.256 (6.50)
3662	0.250 (6.35)	0.250 (6.35)
3626	0.250 (6.35)	0.375 (9.53)
3643	0.375 (9.53)	0.500 (12.70)
3694	0.500 (12.70)	0.500 (12.70)

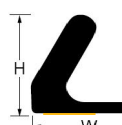


Table 3 - C-Fold Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3848	0.236 (5.99)	0.236 (5.99)
3803	0.315 (8.00)	0.315 (8.00)
3843	0.315 (8.00)	0.315 (8.00)
3806	0.385 (9.78)	0.421 (10.69)
3836	0.395 (10.03)	0.430 (10.92)
3834	0.400 (10.16)	0.430 (10.92)
3830	0.465 (11.81)	0.421 (10.69)
3901	0.465 (11.81)	0.421 (10.69)
3822	0.465 (11.81)	0.421 (10.69)
3807	0.675 (17.15)	0.580 (14.73)




Table 4 - P-Shape Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3816	0.130 (3.30)	0.520 (13.21)
3898	0.145 (3.68)	0.520 (13.21)
3895	0.165 (4.19)	0.520 (13.21)
3877	0.200 (5.08)	0.520 (13.21)




Table 5 - Stealth Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3902	0.070 (1.78)	0.564 (14.33)
3856	0.080 (2.03)	0.300 (7.62)
3844	0.080 (2.03)	0.500 (12.70)
3845	0.080 (2.03)	0.675 (17.15)
3840	0.100 (2.54)	0.300 (7.62)
3823	0.100 (2.54)	0.394 (10.01)
3922	0.110 (2.79)	0.620 (15.75)
3828	0.120 (3.05)	0.320 (8.13)
3890	0.120 (3.05)	0.400 (10.16)
3926	0.122 (3.10)	0.255 (6.48)
3850	0.134 (3.40)	0.625 (15.88)
3839	0.140 (3.56)	0.500 (12.70)
3891	0.157 (3.99)	0.500 (12.70)
3842	0.197 (5.00)	0.675 (17.15)
3894	0.215 (5.46)	0.500 (12.70)
3995	0.285 (7.24)	0.650 (16.51)
3913	0.350 (8.89)	0.629 (15.98)

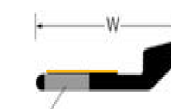


Table 6 - Knife-Edge Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)
3941	0.105 (2.67)	0.320 (8.13)
3826	0.106 (2.69)	0.445 (11.30)
3837	0.106 (2.69)	0.445 (11.30)
3893	0.106 (2.69)	0.320 (8.13)
3811	0.252 (6.40)	0.751 (19.08)

Table 7 - Other Profiles

Profile	Height inches (mm) ±0.020 (0.51)	Width inches (mm) ±0.020 (0.51)	Profile Shape
3914	0.152 (3.86)	0.250 (6.35)	"T"
3849	0.394 (10.01)	0.590 (14.99)	"L"
9005	0.157 (3.99)	0.257 (6.53)	"L"
3860	0.181 (4.60)	0.244 (6.20)	"T"

SOFT-SHIELD® 3500 Product Information

Table 8 - Typical Properties

Typical Properties	Value	Test Method
Shielding Effectiveness 20MHz to 10 GHz	> 100 (dB)	CHO-TM-TP08
35% Compression Deflection lb/in (N/mm), [0.125 x 0.375 in. cross-section]	< 1 (<0.175)	ASTM C165
Compression Set	<15%	ASTM D3574
Operating Temperature °F (°C)	-40 to 158 (-40 to 70)	--
Acrylic Adhesive Peel Strength, lb/in (N/mm) [Min. value]	4 (0.7)	ASTM D1000
Recommended % Deflection Range	20 - 60%	--
Flammability (See UL File Number E140244)	V-0	UL 94
Shelf Life, months from date of sale	24	--
Storage Conditions, °F (°C) @ 50% Relative Humidity	70 ± 20 (21± 10)	--

Table 9 - Tolerances

Dimensional Tolerances	
Minimum Wall Width inches (mm) 0.060 (1.52)	
Cut Length inches (cm)	inches (mm)
up to 5.00 (up to 12.7)	±0.030 (0.76)
5.01 to 10.00 (12.7 to 25.4)	±0.060 (1.52)
10.01 to 15.00 (25.4 to 38.1)	±0.070 (1.78)
15.01 to 20.00 (38.1 to 50.8)	±0.080 (2.03)
20.01 to 30.00 (50.8 to 76.2)	±0.100 (2.54)
30.01 to 48.00 (76.2 to 121.92)	±0.200 (5.08)
48.01 to 95.00 (121.92 to 241.3)	±0.250 (6.35)
over 95.00 (over 241.3)	±0.500 (12.7)
Die-Cut inches (mm)	inches (mm)
up to 10.00 (up to 254)	±0.020 (0.51)
10.01 to 20.00 (254.3 to 508)	±0.030 (0.76)
20.01 to 30.00 (508.3 to 762)	±0.040 (1.02)
over 30.00 (over 762)	±0.060 (1.52)

Figure 1

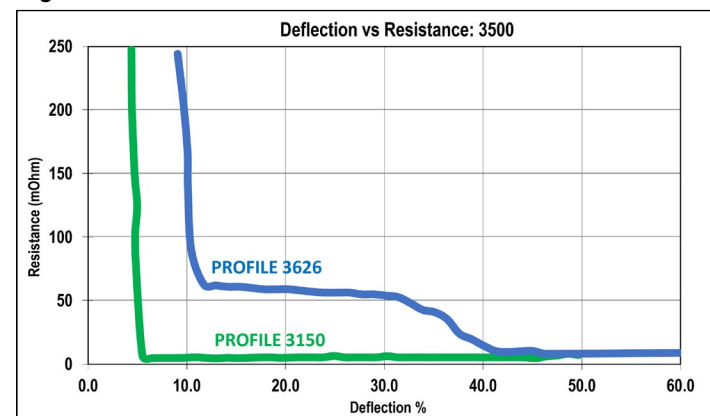
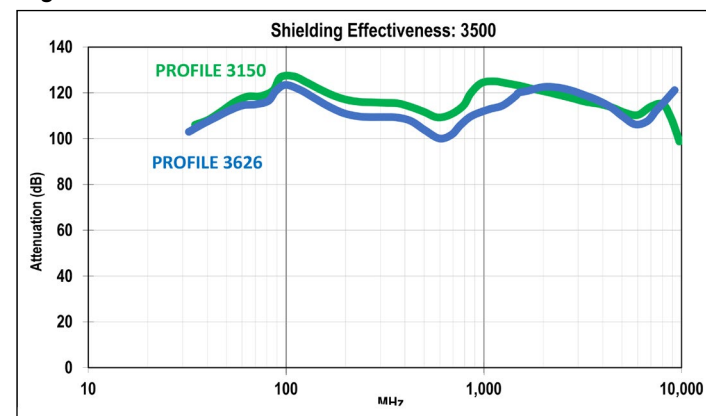
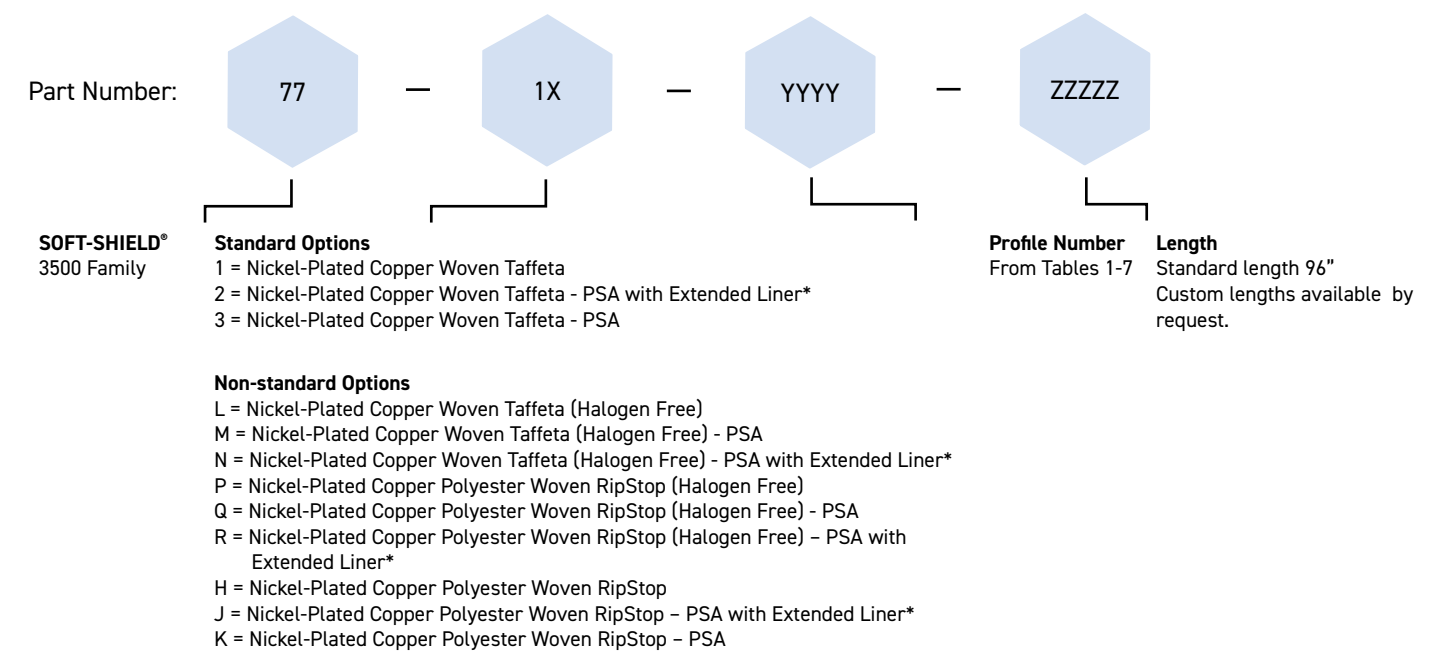


Figure 2



SOFT-SHIELD® 3500 Ordering Information



* Extended Liner option offers easy-peel capability.

Example Part Number: 77-12-3108-09600 (Description: SOFT-SHIELD 3500 Nickel-Plated Copper Woven Taffeta - PSA with Extended Liner, Profile 3108 and 96 inches long)

SOFT-SHIELD® 3700

Low Closure Force, High Temperature, Conductive Fabric Over Foam EMI Shielding Gaskets

SOFT-SHIELD® 3700 allows the use of fabric over foam EMI/grounding gasketing technology to be used in elevated temperature applications where continuous operating temperatures of 125° C or less are required.

These cost effective, high performance gaskets with a UL 94-V0 flammability rating, provide EMI shielding solutions for the automotive, military and information technology market applications in higher temperature areas previously not possible with urethane foam based products. SS3700 can be rapid prototyped in many configurations and allows flexibility integrating it into new or current designs. The part will not require expensive tooling, virtually eliminating supply start up costs. The material is highly reliable ensuring years of positive performance. The nickel plated copper polyester rip stop fabric is resistant to oxidation thus delivering years of shielding and electrical grounding.

Further, the characteristic low compression set of these foam based gaskets provides more reliable long term shielding, especially in applications where gasketed enclosure flanges are frequently opened and closed. Unlike alternative solutions such as metallic fingers, the material will not break or crack during handling thus improving production floor yields and avoiding the potential for a broken fragment falling onto a PCB. The material delivers shielding/grounding at a low deflection force over a large deflection range allowing for a relaxation of mechanical tolerances. SS3700 can accommodate up to 50% of its cross sectional height enabling it to accommodate a wide range of tolerance stack up and still shield. This reduces dimensional constraints and cost on all other components.

Since they are offered with a conductive Pressure Sensitive Adhesive (PSA), installation of SOFT-SHIELD 3700 gaskets is made simple and can be delivered in several ways to the factory floor.



Product Features

- Operation range from -40° C to 125° C
- Low-closure force, requires less than 1 lb./inch (0.175 N/mm)
- Low compression set, <10%
- UL 94 V-0 flammability rating
- Excellent shielding effectiveness, >100 dB, 100 MHz – 3 GHz
- Abrasion and shear resistant conductive fabric jacket
- ROHS and REACH compliant
- Low cost compared to industry alternative, i.e., fingerstock
- Supplied with conductive acrylic - Pressure Sensitive Adhesive (PSA)
- Available in square and rectangular cross-sections, and can be cut-to-length or die cut to readily fit a design
- Available in standard 96" (240 mm) lengths

Typical Applications

- Between screws and chassis
- Panel seals
- Cover seals
- Door seals
- Grounding tabs
- Vent seals
- Improved ground paths

SOFT-SHIELD® 3700 Available Profiles

Available Profiles

Contact Chomerics for any other special requirements and custom profiles.

For non-rectangular profiles see [SOFT-SHIELD 3800](#).

Table 1 - Rectangle Profiles inches (mm)

Profile	Shape	Height ±0.020 (0.51)	Width ±0.020 (0.51)
1008	Rect.	0.075 (1.91)	0.118 (2.99)
1003	Rect.	0.075 (1.91)	0.157 (3.99)
1011	Rect.	0.075 (1.91)	0.197 (5.00)
1004	Rect.	0.075 (1.91)	0.236 (5.99)
1012	Rect.	0.075 (1.91)	0.276 (7.01)
1005	Rect.	0.075 (1.91)	0.315 (8.00)
1013	Rect.	0.075 (1.91)	0.394 (10.00)
1014	Rect.	0.075 (1.91)	0.472 (11.99)
1009	Rect.	0.075 (1.91)	0.500 (12.70)
1015	Rect.	0.075 (1.91)	0.591 (15.01)
1016	Rect.	0.075 (1.91)	0.827 (21.00)
1017	Rect.	0.075 (1.91)	0.984 (24.99)
1007	Rect.	0.075 (1.91)	1.614 (40.99)
1010	Rect.	0.075 (1.91)	1.890 (48.00)
1024	Rect.	0.105 (2.67)	0.157 (3.99)
1018	Rect.	0.105 (2.67)	0.197 (5.00)
1023	Rect.	0.105 (2.67)	0.236 (5.99)
1000	Rect.	0.105 (2.67)	0.250 (6.35)
1021	Rect.	0.105 (2.67)	0.264 (6.71)
1025	Rect.	0.105 (2.67)	0.375 (9.53)
1022	Rect.	0.105 (2.67)	0.394 (10.00)
1001	Rect.	0.105 (2.67)	0.500 (12.70)



Table 1 - Rectangle Profiles inches (mm) (continued)

Profile	Shape	Height ±0.020 (0.51)	Width ±0.020 (0.51)
1020	Rect.	0.105 (2.67)	0.512 (13.00)
1019	Rect.	0.105 (2.67)	0.826 (20.98)
1027	Rect.	0.137 (3.48)	0.197 (5.00)
1026	Rect.	0.137 (3.48)	0.354 (8.99)
1028	Rect.	0.137 (3.48)	0.512 (13.00)
1029	Rect.	0.137 (3.48)	0.826 (20.99)
1030	Rect.	0.200 (5.08)	0.137 (3.48)
1053	Rect.	0.200 (5.08)	0.250 (6.35)
1031	Rect.	0.200 (5.08)	0.295 (7.49)
1035	Rect.	0.200 (5.08)	0.315 (8.00)
1034	Rect.	0.200 (5.08)	0.394 (10.00)
1036	Rect.	0.200 (5.08)	0.591 (15.01)
1032	Rect.	0.200 (5.08)	1.949 (49.50)
1037	Rect.	0.262 (6.65)	0.512 (13.00)
1038	Rect.	0.262 (6.65)	1.000 (25.40)
1041	Rect.	0.387 (9.83)	0.394 (10.00)
1039	Rect.	0.387 (9.83)	0.591 (15.01)
1040	Rect.	0.387 (9.83)	0.787 (19.99)
1043	Rect.	0.387 (9.83)	0.787 (19.99)
1042	Rect.	0.394 (10.00)	0.262 (6.65)
1045	Rect.	0.512 (13.00)	0.387 (9.83)
1044	Rect.	0.512 (13.00)	0.512 (13.00)

SOFT-SHIELD® 3700 Product Information

Table 8 - Typical Properties

Typical Properties	Value	Test Method
Shielding Effectiveness 20MHz to 10 GHz	> 100 (dB)	CHO-TM-TP08
35% Compression Deflection lb/in (N/mm), [0.125 x 0.375 in. cross-section]	< 1 (<0.175)	ASTM C165
Compression Set	<10%	ASTM D3574
Operating Temperature °F (°C)	-40 to 257 (-40 to 125)	--
Acrylic Adhesive Peel Strength, inch (N/mm) [Min. value]	2 (0.35)	ASTM D1000
Recommended % Deflection Range	20 - 50%	--
Flammability (See UL File Number E140244)	V-0	UL 94
Shelf Life, months from date of sale	12	--
Storage Conditions, °F (°C) @ 50% Relative Humidity	70 ± 20 (21± 10)	--

Table 9 - Tolerances

Dimensional Tolerances	
Minimum Wall Width inches (mm) 0.060 (1.52)	
Cut Length inches (cm)	inches (mm)
up to 5.00 (up to 12.7)	±0.030 (0.76)
5.01 to 10.00 (12.7 to 25.4)	±0.060 (1.52)
10.01 to 15.00 (25.4 to 38.1)	±0.070 (1.78)
15.01 to 20.00 (38.1 to 50.8)	±0.080 (2.03)
20.01 to 30.00 (50.8 to 76.2)	±0.100 (2.54)
30.01 to 48.00 (76.2 to 121.92)	±0.200 (5.08)
48.01 to 95.00 (121.92 to 241.3)	±0.250 (6.35)
over 95.00 (over 241.3)	±0.500 (12.7)
Die-Cut inches (mm)	inches (mm)
up to 10.00 (up to 254)	±0.020 (0.51)
10.01 to 20.00 (254.3 to 508)	±0.030 (0.76)
20.01 to 30.00 (508.3 to 762)	±0.040 (1.02)
over 30.00 (over 762)	±0.060 (1.52)

Figure 1

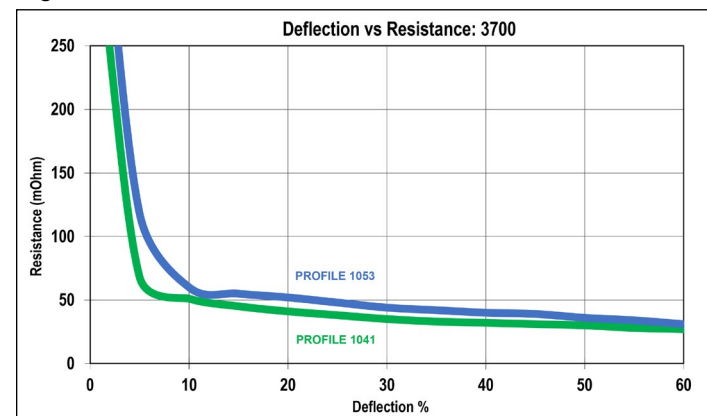
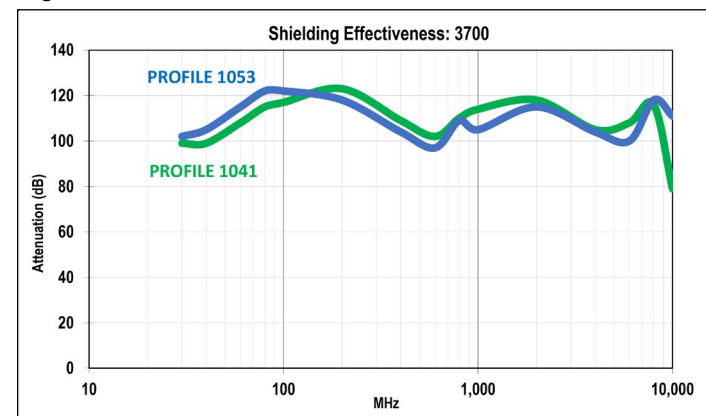
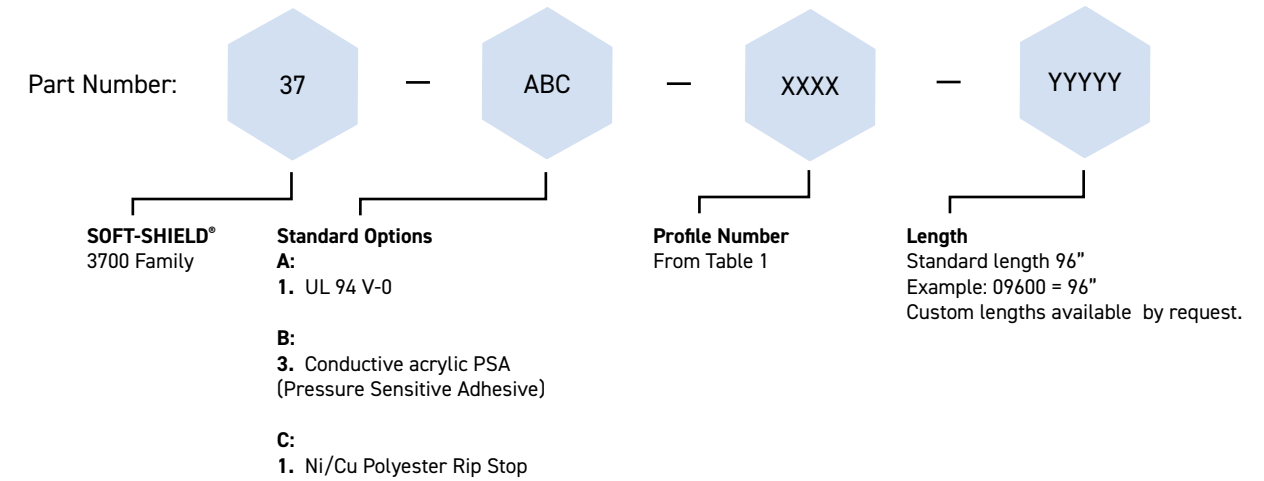


Figure 2



SOFT-SHIELD® 3700 Ordering Information



SOFT-SHIELD® 3800

Non-Rectangular Fabric Over Foam EMI Shielding Gaskets for High Temperature Applications

Parker Chomerics SOFT-SHIELD 3800 is an electrically conductive fabric over a silicone foam EMI shielding and electrical grounding gasket meant for low-closure force and high temperature electronics applications. SOFT-SHIELD 3800 profiles come in complex and unique non-rectangular shapes and are an extension of the rectangular profiles of Parker Chomerics SOFT-SHIELD 3700 product of EMI and grounding gaskets. Both SOFT-SHIELD 3700 and SOFT-SHIELD 3800 are low cost solutions to EMI shielding for electronics applications across a number of industries.

SOFT-SHIELD 3800 is comprised of an electrically conductive nickel-plated copper polyester taffeta weave fabric wrapped around open cell silicone foam. This wrap around technology grounds the gasket from point to point, creating an electrically conductive solution to eliminate EMI gaps. With an operating temperature range up to 125°C, SOFT-SHIELD 3700 and 3800 are ideal for applications exposed to high temperatures where a UL 94 V-0 requirement exists.

SOFT-SHIELD products typically require less than 1 lb./inch (0.175 lb/mm) of closure force for effective electrical contact. This product takes less than 10% compression set, resulting in reliable and repeatable shielding performance over the life of a device. SOFT-SHIELD 3800 is an excellent shielding and grounding alternative to traditional spring finger type products.



Product Features

- Operating temperature range up to 125°C
- > 100 dB shielding effectiveness (20 MHz to 10 GHz)
- Non-Rectangular and complex configurations
- Economical shielding and grounding option
- Low closure force
- Low contact resistance
- Dozens of standard parts available
- Custom profiles available upon request
- Available in bulk or cut to length
- UL 94 V-0, RoHS, and REACH Compliant
- Low compression set
- Abrasion and shear resistant conductive wrap

Typical Applications

- Server faceplates and inserts
- Consumer electronics
- Grounding applications
- Electronics enclosures
- Door seals
- EMI window and vent gaskets

SOFT-SHIELD® 3800 Product Information

Available Profiles

Contact Chomerics for any other special requirements and custom profiles.

For rectangular profiles see [SOFT-SHIELD 3700](#).

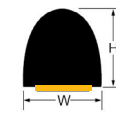


Table 1 - D-Shape Profiles

Profile	Height inches (mm) ± 0.020 (0.51)	Width inches (mm) ± 0.020 (0.51)
3607	0.060 (1.52)	0.150 (3.81)
3664	0.070 (1.78)	0.180 (4.57)
3674	0.075 (1.91)	0.150 (3.81)
3610	0.079 (2.01)	0.197 (5.00)
3628	0.079 (2.01)	0.394 (10.01)
3601	0.090 (2.29)	0.091 (2.31)
3648	0.090 (2.29)	0.150 (3.81)
3671	0.100 (2.54)	0.250 (6.35)
3669	0.110 (2.79)	0.225 (5.72)
3608	0.118 (3.00)	0.150 (3.81)
3622	0.118 (3.00)	0.354 (8.99)
3629	0.118 (3.00)	0.394 (10.01)
3651	0.120 (3.05)	0.250 (6.35)
3624	0.125 (3.18)	0.375 (9.53)
3682	0.130 (3.30)	0.188 (4.78)
3616	0.134 (3.40)	0.256 (6.50)
3684	0.138 (3.51)	0.394 (10.01)
3650	0.142 (3.61)	0.252 (6.40)
3668	0.150 (3.81)	0.354 (8.99)
3685	0.157 (3.99)	0.500 (12.70)
9023	0.157 (3.99)	0.150 (3.81)
3649	0.157 (3.99)	0.236 (5.99)
3666	0.157 (3.99)	0.150 (3.81)
3631	0.177 (4.50)	0.393 (9.98)
3620	0.189 (4.80)	0.299 (7.59)
3611	0.196 (4.98)	0.196 (4.98)
3617	0.197 (5.00)	0.256 (6.50)
3662	0.250 (6.35)	0.250 (6.35)
3626	0.250 (6.35)	0.375 (9.53)
3643	0.375 (9.53)	0.500 (12.70)
3694	0.500 (12.70)	0.500 (12.70)

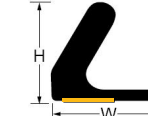


Table 2 - C-Fold Profiles

Profile	Height inches (mm) ± 0.020 (0.51)	Width inches (mm) ± 0.020 (0.51)
3848	0.236 (5.99)	0.236 (5.99)
3803	0.315 (8.00)	0.315 (8.00)
3806	0.385 (9.78)	0.421 (10.69)
3836	0.395 (10.03)	0.430 (10.92)
3834	0.400 (10.16)	0.430 (10.92)
3830	0.465 (11.81)	0.421 (10.69)
3807	0.675 (17.15)	0.580 (14.73)



Table 3 - P-Shape Profiles

Profile	Height inches (mm) ± 0.020 (0.51)	Width inches (mm) ± 0.020 (0.51)
3816	0.130 (3.30)	0.520 (13.21)
3898	0.145 (3.68)	0.520 (13.21)
3895	0.165 (4.19)	0.520 (13.21)
3877	0.200 (5.08)	0.520 (13.21)



Table 4 - Stealth Profiles

Profile	Height inches (mm) ± 0.020 (0.51)	Width inches (mm) ± 0.020 (0.51)
3902	0.070 (1.78)	0.564 (14.33)
3856	0.080 (2.03)	0.300 (7.62)
3844	0.080 (2.03)	0.500 (12.70)
3845	0.080 (2.03)	0.675 (17.15)
3840	0.100 (2.54)	0.300 (7.62)
3823	0.100 (2.54)	0.394 (10.01)
3922	0.110 (2.79)	0.620 (15.75)
3828	0.120 (3.05)	0.320 (8.13)
3890	0.120 (3.05)	0.400 (10.16)
3926	0.122 (3.10)	0.255 (6.48)
3850	0.134 (3.40)	0.625 (15.88)
3839	0.140 (3.56)	0.500 (12.70)
3891	0.157 (3.99)	0.500 (12.70)
3842	0.197 (5.00)	0.675 (17.15)
3894	0.215 (5.46)	0.500 (12.70)
3995	0.285 (7.24)	0.650 (16.51)
3913	0.350 (8.89)	0.629 (15.98)

SOFT-SHIELD® 3800 Product Information

Available Profiles

Contact Chomerics for any other special requirements and custom profiles.

For rectangular profiles see [SOFT-SHIELD 3700](#).



Table 5 - Knife-Edge Profiles

Profile	Height inches (mm) ± 0.020 (0.51)	Width inches (mm) ± 0.020 (0.51)
3941	0.105 (2.67)	0.320 (8.13)
3826	0.106 (2.69)	0.445 (11.30)
3893*	0.106 (2.69)	0.320 (8.13)
3811	0.252 (6.40)	0.751 (19.08)

*Contact Applications Engineering for more information.

Table 6 - Other Profiles

Profile	Height inches (mm) ± 0.020 (0.51)	Width inches (mm) ± 0.020 (0.51)	Profile Shape
3914	0.152 (3.86)	0.250 (6.35)	"T"
3849	0.394 (10.01)	0.590 (14.99)	"L"
9005	0.157 (3.99)	0.257 (6.53)	"L"
3860	0.181 (4.60)	0.244 (6.20)	"T"

Table 7 - Typical Properties

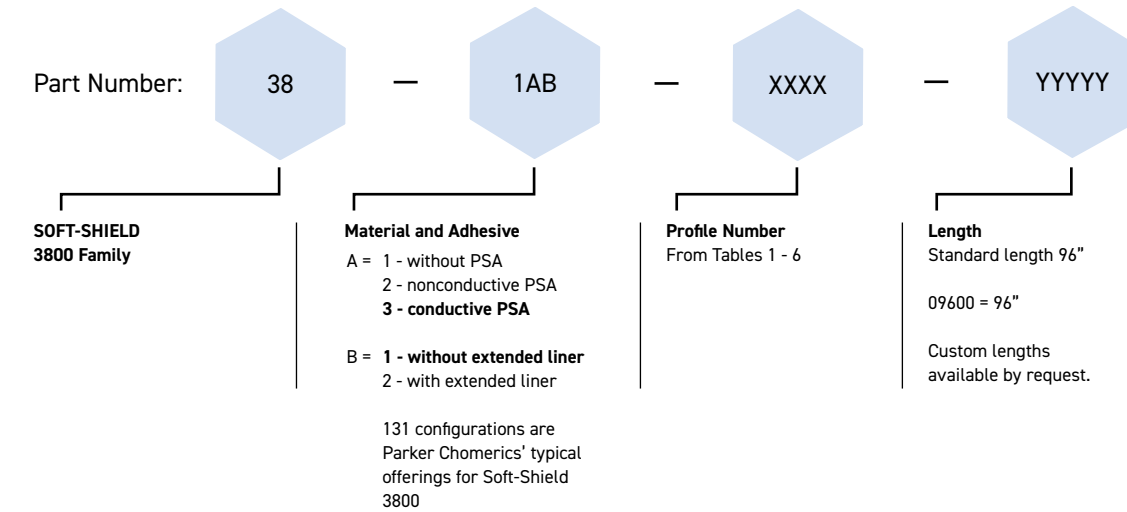
SOFT-SHIELD® 3800 Typical Properties	Value	Test Method
Shielding Effectiveness 20MHz to 10 GHz	> 100 (dB)	CHO-TM-TP08
35% Compression Deflection lb/in (N/mm), [0.125 x 0.375 in. cross-section]	< 1 (<0.175)	ASTM C165
Compression Set	<10%	ASTM D3574
Operating Temperature	-40° to 125° C (-40° to 257° F)	--
*Conductive Acrylic Adhesive Peel Strength, 90° lb/inch (N/mm) [Min value]	2 (0.35)	ASTM D1000
Recommended % Deflection Range	20 - 50%	--
Flammability	V-0	UL 94
Recommended Storage Conditions @ 50% Relative Humidity	70° F ± 20 21° C ± 10	--
Shelf Life, months from date of shipment	12*	--

* Possible extension of additional six (6) months. See Parker Chomerics Shelf Life Re-certification for Laminated Solutions document for procedure.

Table 8 - Tolerances

Dimensional Tolerances	
Minimum Wall Width inches (mm) 0.060 (1.52)	
Cut Length inches (cm)	inches (mm)
up to 5.00 (up to 12.7)	±0.030 (0.76)
5.01 to 10.00 (12.7 to 25.4)	±0.060 (1.52)
10.01 to 15.00 (25.4 to 38.1)	±0.070 (1.78)
15.01 to 20.00 (38.1 to 50.8)	±0.080 (2.03)
20.01 to 30.00 (50.8 to 76.2)	±0.100 (2.54)
30.01 to 48.00 (76.2 to 121.92)	±0.200 (5.08)
48.01 to 95.00 (121.92 to 241.3)	±0.250 (6.35)
over 95.00 (over 241.3)	±0.500 (12.7)
Die-Cut inches (mm)	inches (mm)
up to 10.00 (up to 254)	±0.020 (0.51)
10.01 to 20.00 (254.3 to 508)	±0.030 (0.76)
20.01 to 30.00 (508.3 to 762)	±0.040 (1.02)
over 30.00 (over 762)	±0.060 (1.52)

SOFT-SHIELD® 3800 Ordering Information



Example Part Number: 38-131-3601-09600 (Description: Soft-Shield 3800, D-Shaped .090" H x .091" W with electrically conductive acrylic pressure sensitive adhesive (PSA) without an extended liner sold by the foot and supplied in 96 inch lengths.

Figure 1

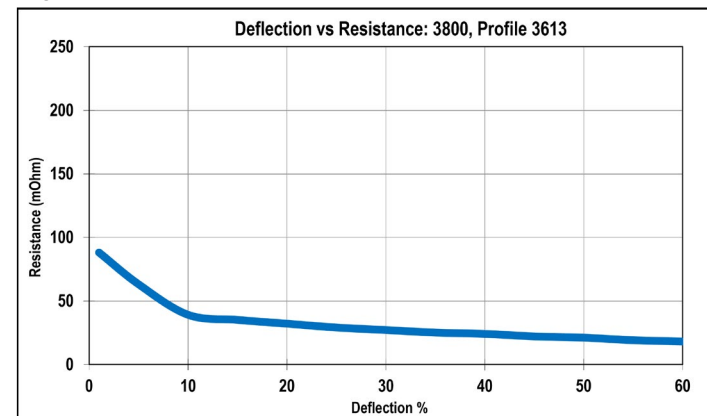
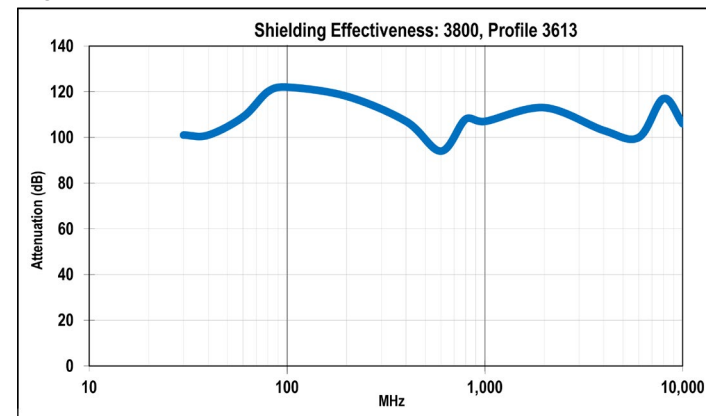


Figure 2



SOFT-SHIELD® 4800

Multi-Planar Electrically Conductive Foam EMI Shielding Gaskets

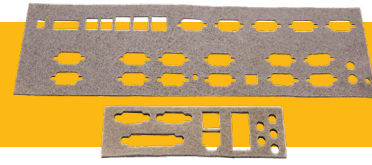
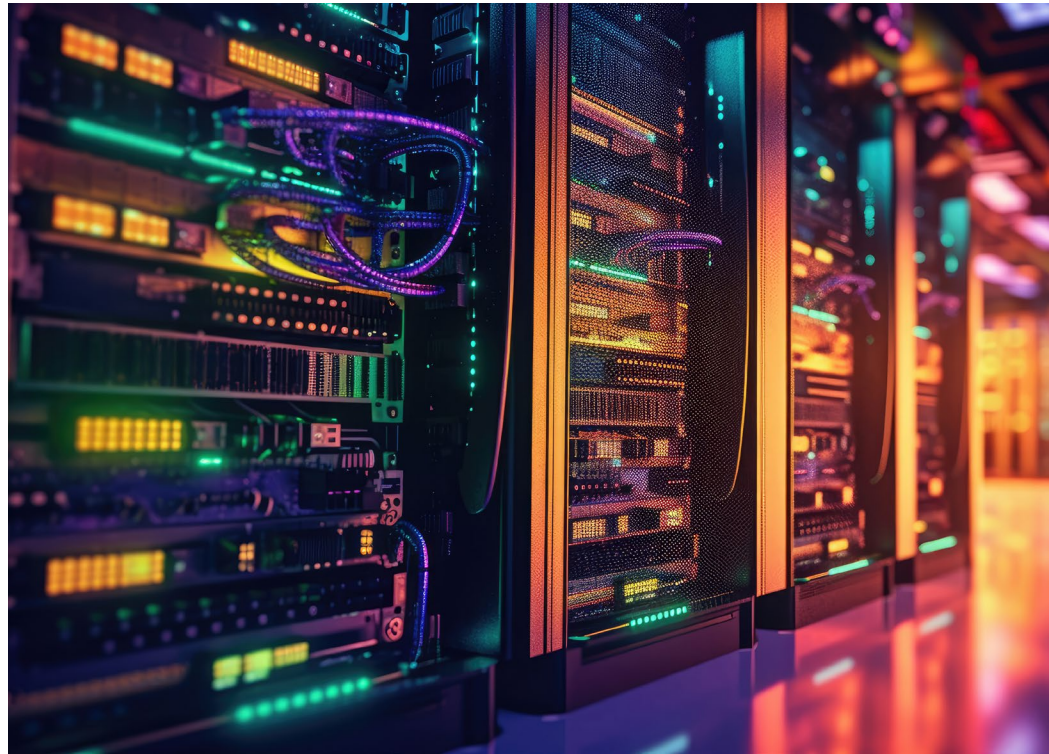
Parker Chomerics SOFT-SHIELD® 4800 is a true multi-planar, Z-axis electrically conductive foam for indoor applications. It is based on the unique integration of electrically conductive silver-plated fibers into a low-density urethane foam, providing for a performance-driven, cost-effective EMI shielding solution. It offers greater EMI shielding performance from other SOFT-SHIELD products which may only consist of an electrically conductive jacket over traditional urethane foam.

Through the optimization of conductive fiber construction, loading and dispersion within the foam matrix, SOFT-SHIELD 4800 provides superb Z-axis conductivity with extremely short ground paths. Since the integrity of the base foam is uncompromised, SOFT-SHIELD 4800 offers exceptional physical and mechanical properties.

SOFT-SHIELD 4800 is flammability rated to UL 94 HF-1 and is available in bulk rolls, strip gaskets or custom die cut shapes.

An acrylic pressure sensitive adhesive (PSA) is available on one side to optimize gasket adhesion and electrical interface resistance.

RoHS, REACH and UL 94 HH-1 compliant



Product Features

- 95 dB shielding effectiveness from 20 MHz to 10 GHz
- Stable electrical performance (through resistance) after multiple closure cycles
- Low compression set of less than 15%
- Available in bulk rolls or custom die cut shapes
- Z-axis conductivity allows compartmental shielding
- Offered with or without electrically conductive acrylic pressure sensitive adhesive (PSA)
- RoHS, REACH and UL 94 HH-1 compliant

Typical Applications

- I/O panels, backplanes, connectors, access panels and rectangular/ square strip gasket seals

SOFT-SHIELD® 4800 Product Information

Typical Properties	SOFT-SHIELD 4800	Test Method
Shielding Effectiveness - 20 MHz to 10 GHz, dB	Average: 95	CHO-TM-TP08
Compression-Deflection - 3mm thick sample, psi (kPa) to resemble 4850 presentation	25% - 2.2 (15.2) 50% - 4.2 (29.0)	ASTM C165 (Modified)
Through-Resistance - 3 mm thick sample	(See Figure 1)	ASTM D991
Gasket Compression Set, %	<15	ASTM D3574
Tensile Strength - 3mm thick sample, psi (MPa)	306 (2.1)	ASTM D412 (Modified)
Electrically Conductive Acrylic PSA Peel Strength, oz/in	15	ASTM D1000 (Modified to 90° peel)
Recommended Deflection Range, %	15 - 50	--
Flammability	HF-1	UL 94
NASA Outgassing, % TML (% CVCM)	Not Tested	ASTM E595
Operating Temperature °F (°C)	-40 to 158 (-40 to 70)	--
Recommended Storage Conditions @ 50% Relative Humidity °F (°C)	70 ± 20 (21 ± 10)	--
Shelf Life with PSA, months from date of shipment	24*	--
Shelf Life (no adhesive)	Indefinite	--

* Possible extension of additional twelve (6) months. See Parker Chomerics Shelf Life Re-certification for Laminated Solutions document for procedure.

Dimensional Tolerances	
Minimum Wall Width inches (mm), 0.100 (2.54)	
Die-Cut inches (mm)	inches (mm)
Up to 20.00 (up to 508)	±0.020 (0.51)
20.01 to 30.00 (508.3 to 762)	±0.030 (0.76)
Over 30.00 (over 762)	±0.060 (1.52)
Standard Thicknesses inches (mm)	inches (mm)
0.040 (1)	±0.020 (0.51)
0.060 (1.5)	±0.020 (0.51)
0.079 (2)	±0.020 (0.51)
0.118 (3)	±0.020 (0.51)
0.157 (4)	±0.020 (0.51)
0.197 (5)	±0.020 (0.51)

All thicknesses are toleranced at ± 0.5mm (± .020")

Figure 1

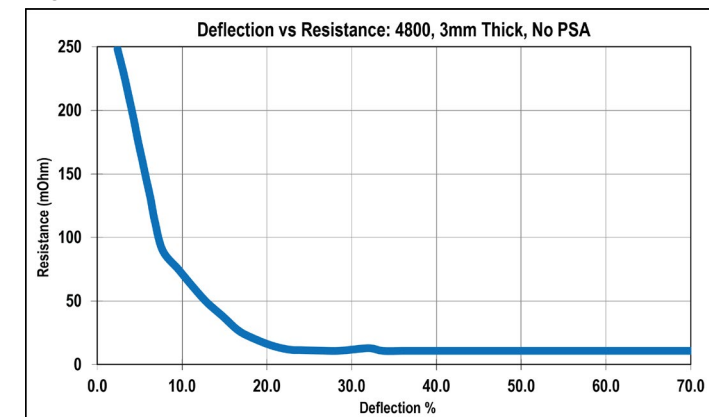
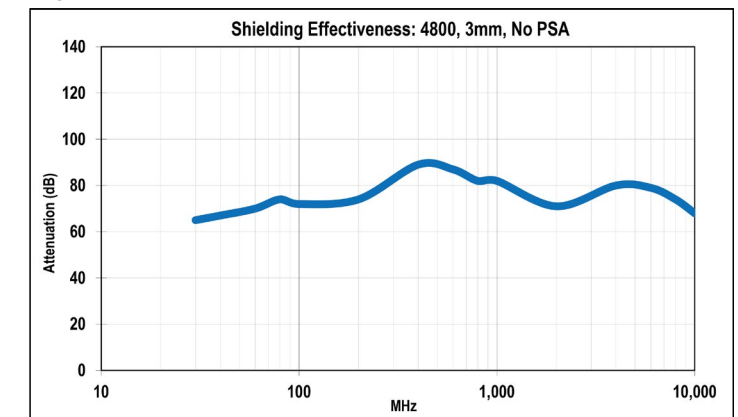
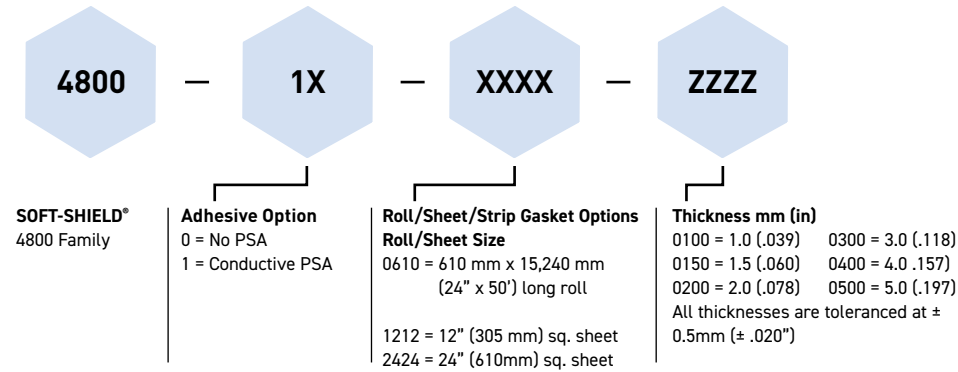


Figure 2



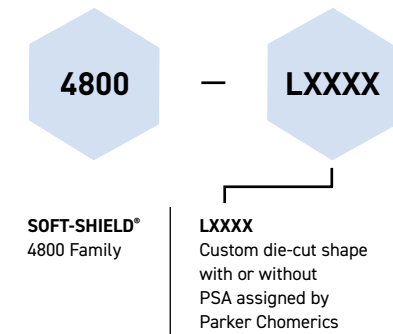
SOFT-SHIELD® 4800 Ordering Information

Part Numbering – 50 ft long bulk rolls and sheets

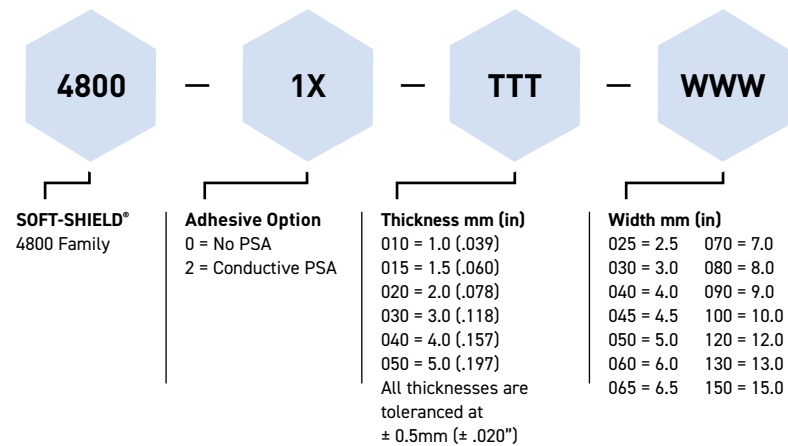


For custom die-cut parts, contact Parker Chomerics Inside Sales.

Custom Part Numbering

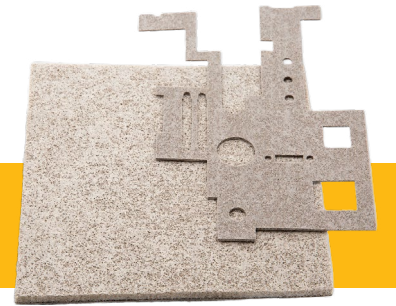


Part Numbering – Strip Gaskets



SOFT-SHIELD® 4840

Very Cost-Effective Electrically Conductive Foam Gaskets for High Volume Grounding Applications



Parker Chomerics SOFT-SHIELD® 4840 is a very cost-effective, electrically conductive foam used for grounding of environmentally controlled applications. Consisting of silver-plated nylon fibers embedded into a low-density urethane foam, SOFT-SHIELD® 4840 is a low compression force gasket solution ideal for high volume applications such as consumer devices and industrial electronics. It is a more cost effective version of the market leading SOFT-SHIELD® 4850, requiring lower compression forces yet providing slightly lower conductivity (higher through resistance).

SOFT-SHIELD® 4840 is expected to be flammability rated to UL 94 V-0 with an operating temperature range of -40°C to 70°C. The optimized dispersion of conductive fibers within the foam matrix means that this material is electrically stable over many closure cycles while typically experiencing a low compression set (<15%). Provided with or without an electrically conductive (Silver-Plated Copper filled) acrylic pressure sensitive adhesive, SOFT-SHIELD® 4840 is available in bulk rolls, cut sheets, or custom die cut shapes.



Product Features

- Very cost effective
- Z-axis electrical conductivity
- Good through resistance (<150 milliohms at 30% gasket deflection)
- Stable electrical performance (through resistance) after multiple closure cycles
- 60 dB typical shielding effectiveness from 20 MHz to 10 GHz
- Low closure force (<2 PSI)
- Low compression set (<15%)
- Available in bulk rolls, cut sheets or custom die cut shapes
- Non-nickel bearing material
- RoHS & REACH compliant
- UL 94 V-0 (Tested by Chomerics)

Typical Applications

- High volume consumer electronic devices
- Servers, desktop PCs, and laptops
- I/O panels, backplanes, connectors, access panels and rectangular/ square strip gasket seals
- Telecom infrastructure rack and enclosure components

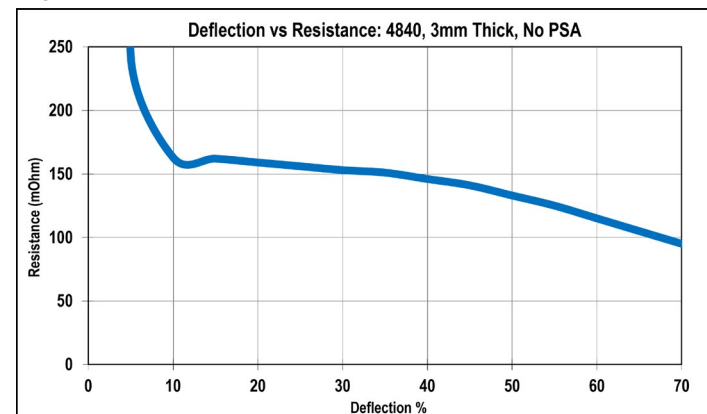
SOFT-SHIELD® 4840 Product Information

Typical Properties	SOFT-SHIELD 4840	Test Method
Shielding Effectiveness – 20 MHz to 10 GHz, dB	60	CHO-TM-TP08
Compression-Deflection – 3 mm thick sample, psi (kPa)	1.5 (10.3) @ 25% 2.0 (13.7) @ 50%	ASTM C165 (Modified)
Through-Resistance – 3 mm thick sample	(See Figure 1)	ASTM D991
Gasket Compression Set, %	<15	ASTM D3574
Tensile Strength – 3 mm thick sample, psi (MPa)	350 (2.4)	ASTM D412 (Modified)
Electrically Conductive Acrylic PSA Peel Strength, oz/in	15	ASTM D1000 (Modified to 90° peel)
Recommended % Deflection Range, %	15 - 50	--
Flammability (See UL File Number TBD)	TBD	UL 94
Operating Temperature °F (°C)	-40 to 158 (-40 to 70)	--
Recommended Storage Conditions @ 50% Relative Humidity °F (°C)	70 ± 20 (21 ± 10)	--
Shelf Life with PSA, months from date of shipment	24	--
Shelf Life (no adhesive)	Indefinite	--

* Possible extension of additional twelve (12) months. See Parker Chomerics Shelf Life Re-certification for Laminated Solutions document for procedure.

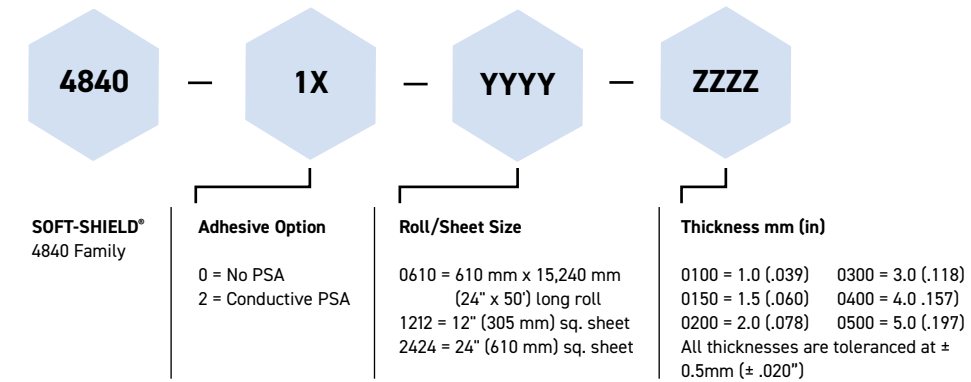
Dimensional Tolerances	
Minimum Wall Width for Steel-Rule Die cut parts, inches (mm), 0.100 (2.54)	
Overall Die-Cut	inches (mm)
Up to 10.00 (up to 254)	±0.020 (0.51)
10.01 to 20.00 (254.3 to 508)	±0.030 (0.76)
20.01 to 30.00 (508.3 to 762)	±0.040 (1.02)
Over 30.00 (over 762)	±0.060 (1.52)
All thicknesses are toleranced at ± 0.5mm (± .020")	

Figure 1



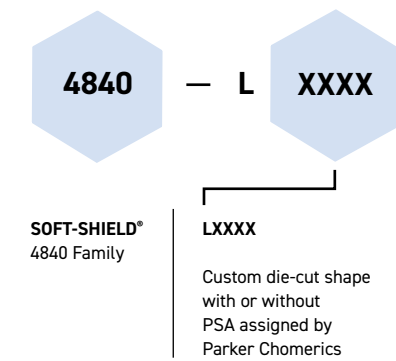
SOFT-SHIELD® 4840 Ordering Information

Table 2 - Part Numbering – 50 ft long bulk rolls and sheets

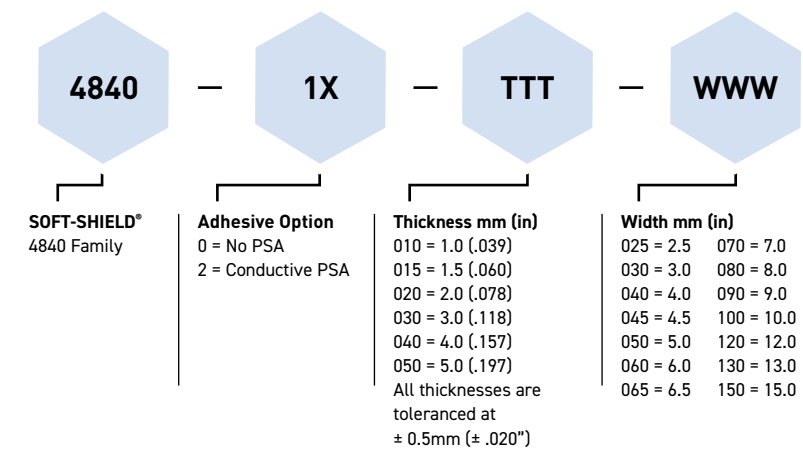


For custom die-cut parts, contact Parker Chomerics Inside Sales.

Table 3 - Custom Part Numbering



Part Numbering – Strip Gaskets



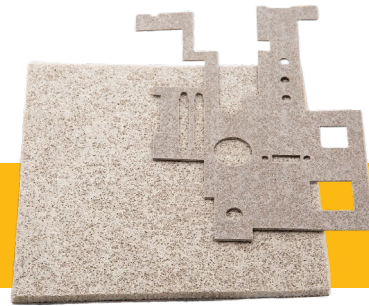
SOFT-SHIELD® 4850

Electrically Conductive Foam EMI Shielding Gaskets

Parker Chomerics SOFT-SHIELD® 4850 is a true multi-planar, Z-axis electrically conductive foam for indoor applications. It is based on the unique integration of electrically conductive silver-plated nylon fibers into a low-density urethane foam, providing for a performance-driven, cost-effective EMI shielding solution.

Through the optimization of conductive fiber construction, loading and dispersion within the foam matrix, SOFT-SHIELD 4850 provides excellent Z-axis electrical conductivity with extremely short ground paths.

SOFT-SHIELD 4850 has a UL 94 V-0 flammability rating and is available in configurations such as bulk rolls, cut sheets or custom die cut shapes. A uniform silver-plated copper particle filled, electrically conductive acrylic pressure sensitive adhesive (PSA) is available on one side for ease of assembly.



Product Features

- 95 dB typical shielding effectiveness from 20 MHz to 10 GHz
- Z-axis electrical conductivity
- Excellent through resistance (<60 milliohms at 30% gasket deflection with pressure-sensitive adhesive)
- Low closure force
- Stable electrical performance (through resistance) after multiple closure cycles
- Low compression set <15%
- Available in bulk rolls, cut sheets or custom die cut shapes
- Non-nickel bearing material

Typical Applications

- Telecom Infrastructure rack and enclosure components
- Servers and desktop PCs
- I/O panels, backplanes, connectors, access panels and rectangular/square strip gasket seals
- LCD/PDP large screen TVs
- Indoor electronics applications requiring UL94 V-0 flammability rating

SOFT-SHIELD® 4850 Product Information

Typical Properties	SOFT-SHIELD® 4850	Test Method
Shielding Effectiveness – 20 MHz to 10 GHz, dB	95	CHO-TM-TP08
Compression-Deflection – 3 mm thick sample, psi (kPa)	25% - 2.5 (17.2) 50% - 4.3 (29.6)	ASTM C165 (Modified)
Through-Resistance	(See Figure 1)	ASTM D991
Gasket Compression Set, %	<15	ASTM D3574
Tensile Strength – 3 mm thick sample, psi (MPa)	306 (2.1)	ASTM D412 (Modified)
Electrically Conductive Acrylic PSA Peel Strength, oz/in	15	ASTM D1000 (Modified to 90° peel)
Recommended % Deflection Range, %	15 - 50	--
Flammability (See UL File Number E140244)	V-0	UL 94
NASA Outgassing, % TML (% CVCM)	7.20 (4.35)	ASTM E595
Operating Temperature °F (°C)	-40 to 158 (-40 to 70)	--
Recommended Storage Conditions @ 50% Relative Humidity °F (°C)	21 ± 10 (70 ± 20)	--
Shelf Life with PSA, months from date of shipment	24*	--
Shelf Life (no adhesive)	Indefinite	--

* Possible extension of additional twelve (12) months. See [Parker Chomerics Shelf Life Re-certification for Laminated Solutions document for procedure.](#)

Dimensional Tolerances	
Minimum Wall Width for Steel-Rule Die cut parts, inches (mm), 0.100 (2.54)	
Overall Die-Cut	inches (mm)
Up to 10.00 (up to 254)	±0.020 (0.51)
10.01 to 20.00 (254.3 to 508)	±0.030 (0.76)
20.01 to 30.00 (508.3 to 762)	±0.040 (1.02)
Over 30.00 (over 762)	±0.060 (1.52)
All thicknesses are toleranced at ± 0.5mm (± .020")	

Figure 1

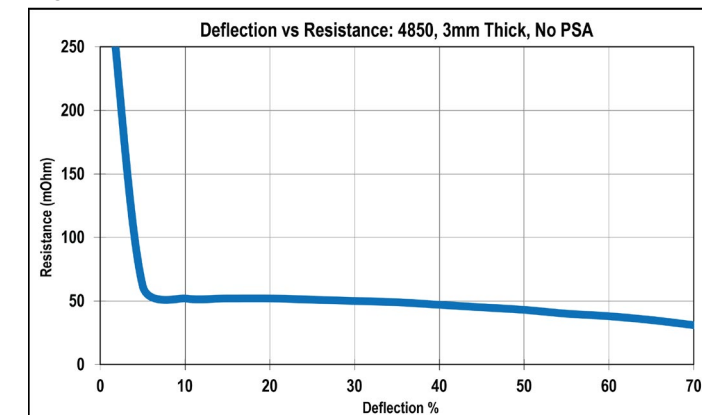
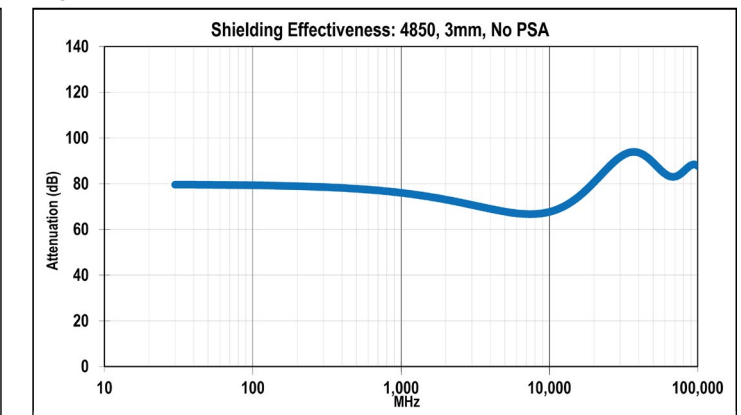
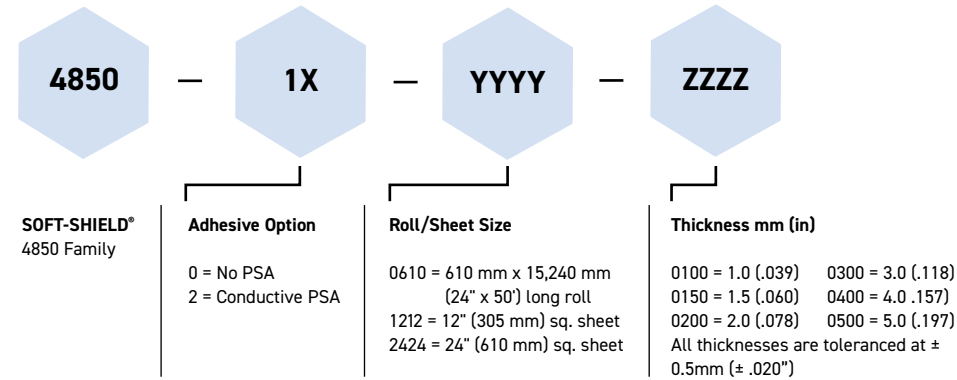


Figure 2



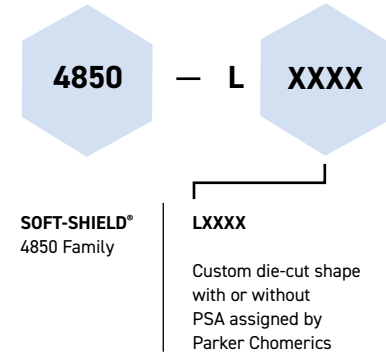
SOFT-SHIELD® 4850 Ordering Information

Table 2 - Part Numbering - 50 ft long bulk rolls and sheets

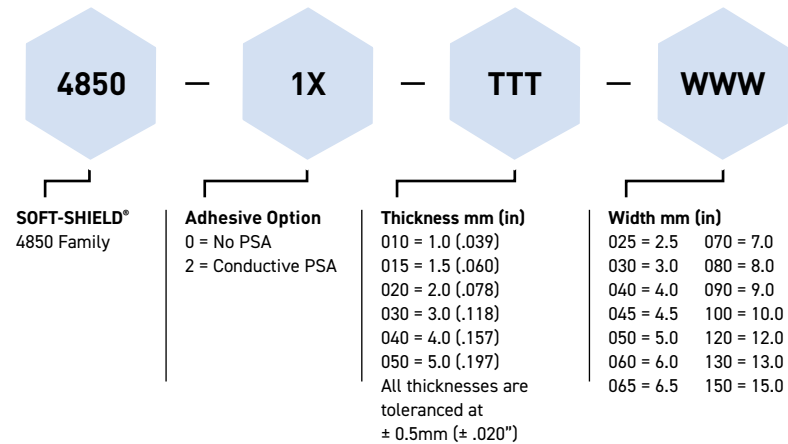


For custom die-cut parts, contact Parker Chomerics Inside Sales.

Table 3 - Custom Part Numbering

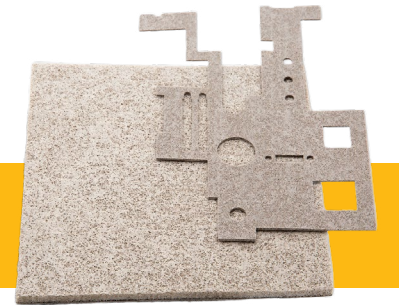


Part Numbering - Strip Gaskets



SOFT-SHIELD® 4860

High Temperature Electrically Conductive Foam EMI Shielding Gaskets



Parker Chomerics SOFT-SHIELD® 4860 is a true multi-planar, Z-axis electrically conductive foam for indoor applications. It is based on the unique integration of electrically conductive silver-plated nylon fibers into a low-density **silicone foam**, providing for a performance-driven, cost-effective EMI shielding solution. It is the higher temperature, halogen free version of the market leading SOFT-SHIELD® 4850, with an operating temperature up to 125°C.

The optimized dispersion of conductive fibers within the silicone foam matrix means that this material is electrically stable over many closure cycles while experiencing a lower compression set of <5%. Provided with or without an electrically conductive (Silver-Plated Copper filled) acrylic pressure sensitive adhesive, SOFT-SHIELD® 4860 is available in bulk rolls, cut sheets, or custom die cut shapes.



Product Features

- Maximum operating Temperature up to 125°C
- 95 dB typical shielding effectiveness from 20 MHz to 10 GHz
- Z-axis electrical conductivity
- Excellent through resistance (<40 milliohms at 30% gasket deflection)
- Low closure force
- Stable electrical performance (through resistance) after multiple closure cycles
- Low compression set <5%
- Available in bulk rolls, cut sheets or custom die cut shapes
- Halogen Free
- Non-nickel bearing material
- RoHS & REACH compliant
- UL 94 V-0 (Tested by Chomerics)

Typical Applications

- I/O panels, backplanes, connectors, access panels and rectangular/square strip gasket seals
- Telecom Infrastructure rack and enclosure components
- Servers and desktop PCs
- LCD/PDP large screen TVs
- Indoor electronics applications requiring UL94 V-0 rating

SOFT-SHIELD® 4860 Product Information

Typical Properties	SOFT-SHIELD 4860	Test Method
Shielding Effectiveness – 20 MHz to 10 GHz, dB	95	CHO-TM-TP08
Compression-Deflection – 3 mm thick sample, psi (kPa)	25% - 2.8 (19.3) 50% - 5.3 (36.5)	ASTM C165 (Modified)
Through-Resistance – 3 mm thick sample	(See Figure 1)	ASTM D991
Gasket Compression Set, %	<5	ASTM D3574
Tensile Strength – 3 mm thick sample, psi (MPa)	45 (0.3)	ASTM D412 (Modified)
Electrically Conductive Acrylic PSA Peel Strength, oz/in	15	ASTM D1000 (Modified to 90° peel)
Recommended % Deflection Range, %	15 - 50	--
Flammability	V-0	UL 94
Operating Temperature °F (°C)	-40 to 257 (-40 to 125)	--
Recommended Storage Conditions @ 50% Relative Humidity °F (°C)	70 ± 20 (21 ± 10)	--
Shelf Life with PSA, months from date of shipment	24*	--
Shelf Life (no adhesive)	Indefinite	--

* Possible extension of additional twelve (12) months. See Parker Chomerics Shelf Life Re-certification for Laminated Solutions document for procedure.

Dimensional Tolerances	
Minimum Wall Width for Steel-Rule Die cut parts, inches (mm), 0.100 (2.54)	
Overall Die-Cut	inches (mm)
Up to 10.00 (up to 254)	±0.020 (0.51)
10.01 to 20.00 (254.3 to 508)	±0.030 (0.76)
20.01 to 30.00 (508.3 to 762)	±0.040 (1.02)
Over 30.00 (over 762)	±0.060 (1.52)
All thicknesses are tolerated at ± 0.5mm (± .020")	

Figure 1

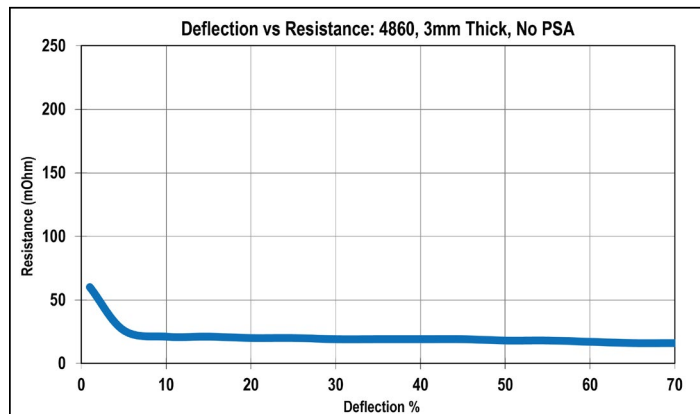
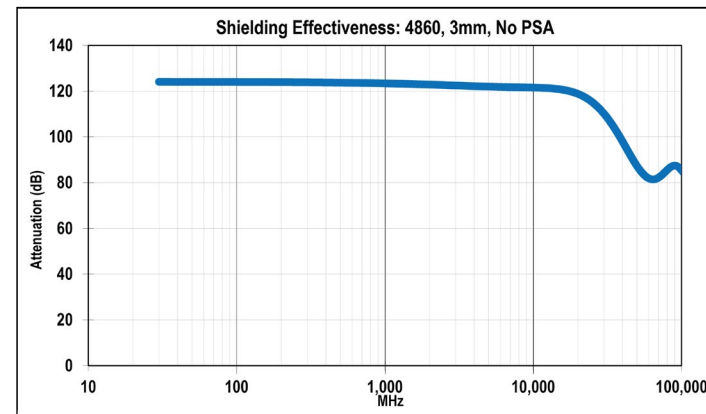
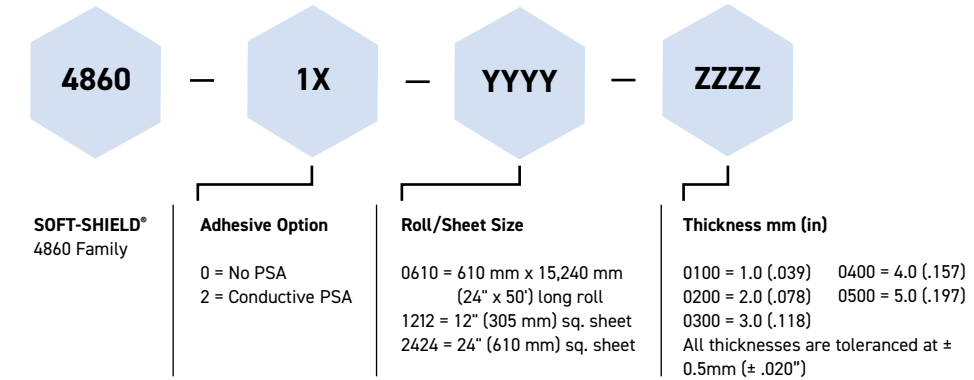


Figure 2



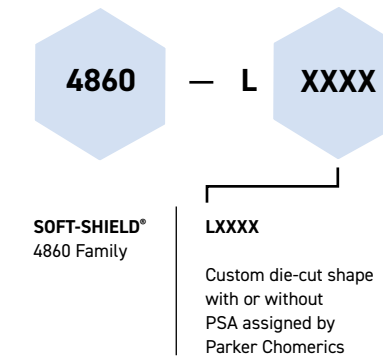
SOFT-SHIELD® 4860 Ordering Information

Table 2 - Part Numbering – 50 ft long bulk rolls and sheets

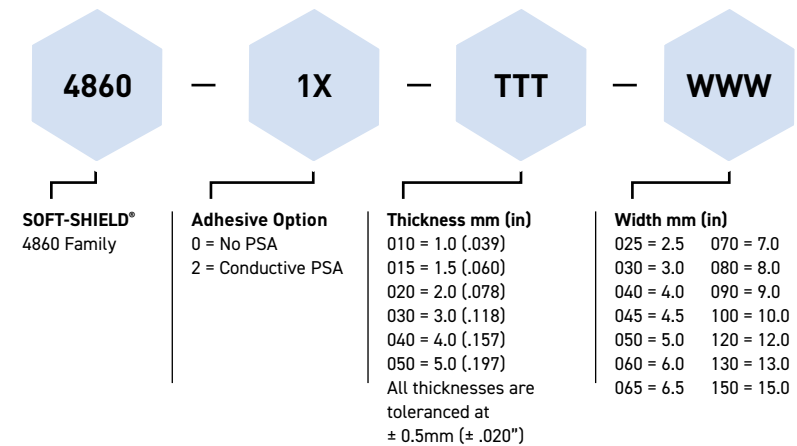


For custom die-cut parts, contact Parker Chomerics Inside Sales.

Table 3 - Custom Part Numbering



Part Numbering – Strip Gaskets



Parker Chomerics Capabilities

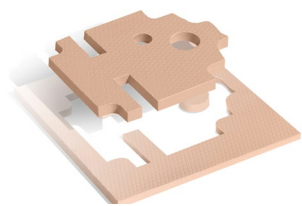
Thermal Interface Materials



Thermally Conductive Gap Filler Gels

Highly conformable, high performance fully cured single-component dispensable gap filler ideal for high volume automated dispense processes.

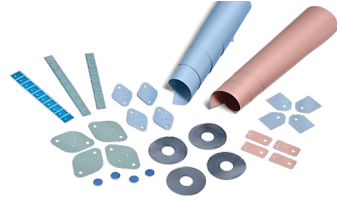
Typical Applications: Telematics, ECU's, EPAS, batteries



Thermally Conductive Gap Filler Pads

Low modulus thermally conductive gap pads offer ease of use, excellent thermal properties and highest conformability for low to moderate clamping force applications.

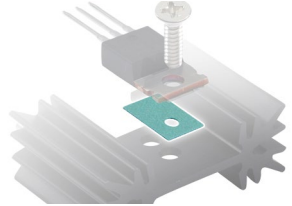
Typical Applications: A/V systems, ACC, braking, battery ECU's



Thermal Insulators

Available in several forms, these materials designed for use where the highest possible thermal, dielectric and mechanical properties are required.

Typical Applications: Power train, lighting, braking, sensors, ECU's



Phase Change Materials

Designed to minimize the thermal resistance between power dissipating electronic components and heat sinks, provide superior long term reliability performance.

Typical Applications: ABS, braking, wipers, transmissions, batteries

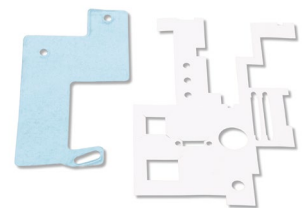
EMI Shielding & Grounding



Fabric Over Foam Gaskets

SOFT-SHIELD® EMI gasketing products bring new flexibility to shielding decisions. They offer material choices, performance levels, configurations and attachment methods.

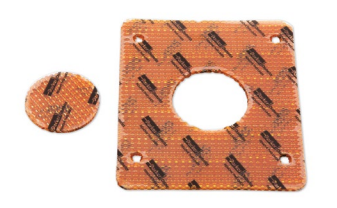
Typical Applications: Telematics, ITE, medical, commercial



Laminates and Grounding Products

Mechanical, electrical and processing properties plus economy for commercial applications.

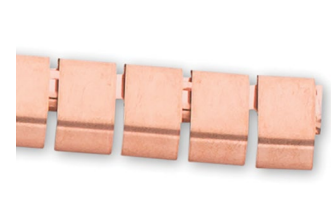
Typical Applications: EMI shields, ground planes, ground straps, ESD shields



Wire and Expanded Metal Gasketing

Metal-based gaskets solutions for Electromagnetic Interference (EMI) and Electromagnetic Pulse (EMP) shielding as well as lightning strike protection.

Typical Applications: Connectors, cabinets, military



Beryllium Copper and Stainless Steel Gaskets

Beryllium-copper (BeCu) and stainless steel EMI gaskets (SPRING-LINE®) combine high levels of shielding effectiveness with a broad deflection range and low closure force properties.

Typical Applications: Cabinets, enclosures, commercial, military

Conductive Compounds



Specialty Materials

Offering a wide variety of adhesives, caulks, sealants and coatings.

Typical Applications: EMI/RFI shielding, component and module caulking and sealing, ITE, medical

Conductive Plastics

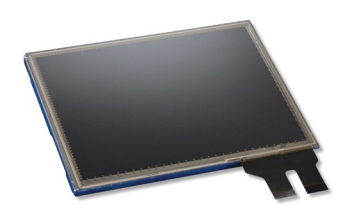


Conductive Plastics

Blend of thermoplastic and conductive fillers that provides world class shielding effectiveness and requires no machining, plating, painting or other added processing steps.

Typical Applications: ACC, sensors, batteries

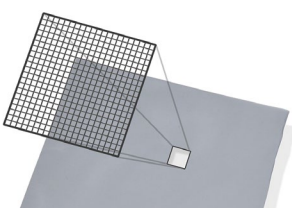
Integrated Display Solutions



CHO-TOUCH Touchscreen LCDs

Parker Chomerics has designed these touchscreen LCDs for harsh environments such as military, medical, avionics, and general industrial.

Typical Applications: Military, medical, aerospace



EMI Shielded Touchscreens and Windows

EMI Shielded touchscreens for rugged performance meeting critical EMC needs. Glass and polycarbonate windows for EMI Shielding and mechanical protection.

Typical Applications: Military, medical, aerospace

WARNING - USER RESPONSIBILITY

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- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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- Product Selection. If Seller has provided Buyer with any component and/or system recommendations, such recommendations are based on data and specifications supplied to Seller by Buyer. Final acceptance and approval of the individual components as well as the system must be made by the Buyer after testing their performance and endurance in the entire application under all conditions which might be encountered.
- Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.
- Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.
- Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 365 days from the date of shipment to Buyer. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WAR-

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- Inspection: Seller shall be given the opportunity to correct or replace defective products prior to cancellation. Final acceptance by Buyer shall take place not later than 90 days after shipment.

- Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order; however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

- Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller that is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

- Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

- Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefor upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

- Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade secrets or similar rights except as provided in this Part 12. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, and trade secrets (hereinafter "Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third

party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 12 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights. If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade secret or any similar right.

- Export Limitations. The items sold hereunder are authorized by the U.S. government for export only to the country of ultimate destination indicated on the face hereof for use by the end-user. The items may not be transferred, transhipped on a non-continuous voyage, or otherwise be disposed of in any other country, either in their original form or after being incorporated into other end-items, without the prior written approval of the U.S. government.

- Commercial Items. Unless otherwise indicated on the face hereof, the items being sold hereunder if sold for military or government purposes constitute Commercial Items in accordance with FAR 2.101, and as such the assertions delineated in the DFAR's 252.227-7013, 252.227-7014, 252.227-7017 and FAR 52.227-15 (c) shall not apply to this contract. Additionally, in view of the Commercial Item status, any deliverable technical data and/or computer software to be provided will contain Seller's normal commercial legend subject to the restrictions contained therein.

- Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

- PREMIER™ Conductive Plastics: Parker Chomerics™ PREMIER™ conductive plastics are sold under license solely for use in the following applications: (i) EMI/RFI shielding, i.e., electromagnetic and/or radio frequency interference shielding or compatibility and surface grounding therefore; (ii) earth grounding, corona shielding, and anti-static and/or electrostatic discharge protection shielding; and (iii) as thermally conductive members to dissipate heat generated by electronic devices.

The resale of PREMIER™ conductive plastics in pellet or any other raw material form is expressly prohibited, as is their use in any application other than as stated above, and any such resale or use by you or your customers shall render any and all warranties null and void ab initio.

You shall defend, indemnify, and hold Parker Hannifin Corporation and its subsidiaries (Parker) harmless from and against any and all costs and expenses, including attorney's fees, settlements, and any awards, damages, including attorney's fees, and costs, resulting from any claim, allegation, suit or proceeding made or brought against Parker arising from any prohibited use of PREMIER™ conductive plastics by you or your customers.

- Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

NOTE: Please consult your local Chomerics office for Terms of Sale applicable in the country in which your order is placed.



WARNING:

These products can expose you to chemicals including carbon black (airborne and extracts), antimony trioxide, titanium dioxide, silica (crystalline), di(2-ethylhexyl)phthalate, ethylene thiourea, acrylonitrile, 1,3-butadiene, epichlorohydrin, toluenediisocyanate, tetrafluoroethylene, ethylbenzene, formaldehyde, furfuryl alcohol, glass fibers, methyl isobutyl ketone, nickel (metallic and compounds), lead and lead compounds which are known to the State of California to cause cancer; and 1,3-butadiene, epichlorohydrin, di(2-ethylhexyl)phthalate, di-isodecyl phthalate, ethylene thiourea, methyl isobutyl ketone, methanol, toluene, lead and lead compounds which are known to the State of California to cause birth defects and other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Parker Chomerics Contact Locations

To place an order please visit parker.com/chomerics or contact a Customer Service Representative at the following locations:

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Fax +781-933-4318
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Product Disclosure
(ROHS/REACH, Material Declarations, SDS)
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Manufacturing Facilities

- Woburn, MA, USA
- Hudson, NH, USA
- Fairport, NY, USA
- Monterrey, Mexico
- High Wycombe, UK
- Frépillon, France
- Sadska, Czech Republic
- Kuala Lumpur, Malaysia
- Chennai, India
- Shanghai, China
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