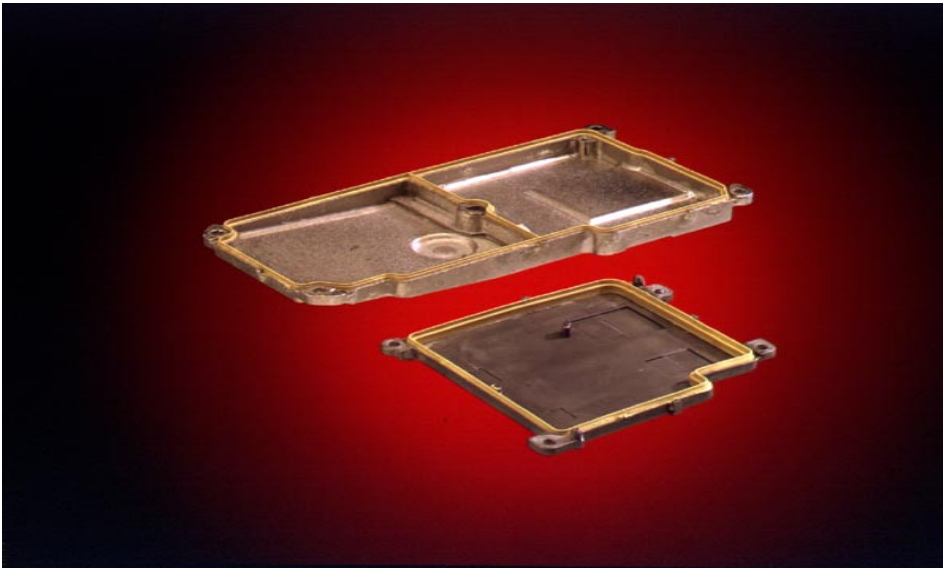


CHO-VER SHIELD™

EMI Shielding Plastic Cover with Molded Conductive Elastomer Gasket



CHO-VER SHIELD EMI shielding covers combine a slim-profile, metallized plastic with a low-closure force, conductive elastomer gasket. These custom shaped covers provide easily-installed shielding in cellular handsets, PCS and other packages where minimal closure forces are available.

CHO-VER SHIELD covers can be used to shield selected areas of a printed circuit board. This eliminates the need to conductively plate a device's outer housing parts. It also eliminates concerns over gaps in enclosure parts.

Custom shaped CHO-VER SHIELD covers also replace the use of shielding metal cans solder-

mounted over components. They are easily removed for PCB access during assembly or after testing.

CHO-VER SHIELD EMI covers feature Ultem® 2200 plastic with nickel/copper plating on interior surfaces. The plastic can be compartmentalized for internal (cross-talk) shielding. Pins, holes and other locating features can be designed into the covers for fast, precise installation. Ultem 2200 plastic is UL 94V-0 flammability rated.

The over-molded EMI shielding gaskets are made from CHO-SEAL® 1310 silver-plated-glass

filled conductive elastomer. Finite element analysis is used to design gasket cross sections with low closure force requirements. Interrupted bead gasket designs can further lower closure force requirements while maintaining the required level of EMI shielding.

FEATURES

- Economical
- Easy to install
- Cover locating features
- Ability to simultaneously mold EMI gasket on opposite cover sides
- Excellent shielding performance
- Low gasket compression set
- CHO-SEAL 1310 conductive elastomer (Table 1)
- Glass-filled ULTEM 2200 plastic cover (Table 2)
- Ni/Cu electroless plating on cover (chromium flash available for additional corrosion resistance)
- Low closure force EMI gasket design (Figure 1)

APPLICATIONS

- Mobile handsets
- Handheld wireless devices
- Mobile site equipment
- Microwave equipment
- Antennas

Table 1 - Typical Properties of CHO-VER SHIELD EMI Shielding Covers

Property	Test Method	CHO-SEAL 1310
Elastomer Binder	—	Silicone
Conductive Filler	—	Ag/Glass
Volume Resistivity (ohm-cm), max.	CEPS-0002*	0.01
Hardness (Shore A)	ASTM D2240	70 +/- 10
Specific Gravity	ASTM D792	1.7 – 1.9
Tensile Strength psi, min. (MPa, min.)	ASTM D412	200 (1.38)
Elongation (percent, min.)	ASTM D412	100
Compression Set, 70 hrs. @ 100°C (percent, max.)	ASTM D395 Method B	35
Shielding Effectiveness	CHO-TM-TP08*	
100 MHz (E-Field)		100
500 MHz (E-Field)		100
2 GHz (Plane Wave)		90
10 GHz (Plane Wave)		80
Heat Aging (ohm-cm, max.)	CEPS-0002*	0.01

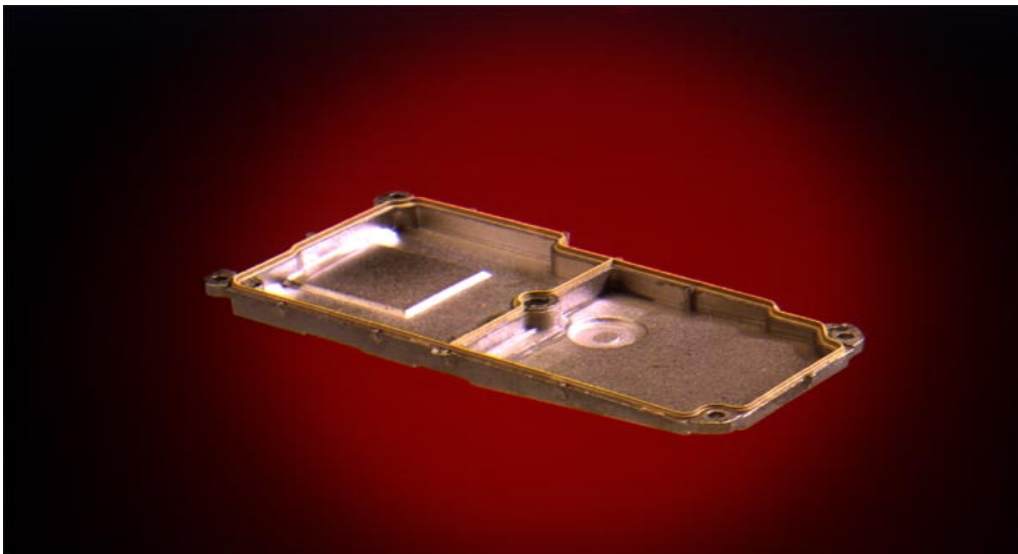
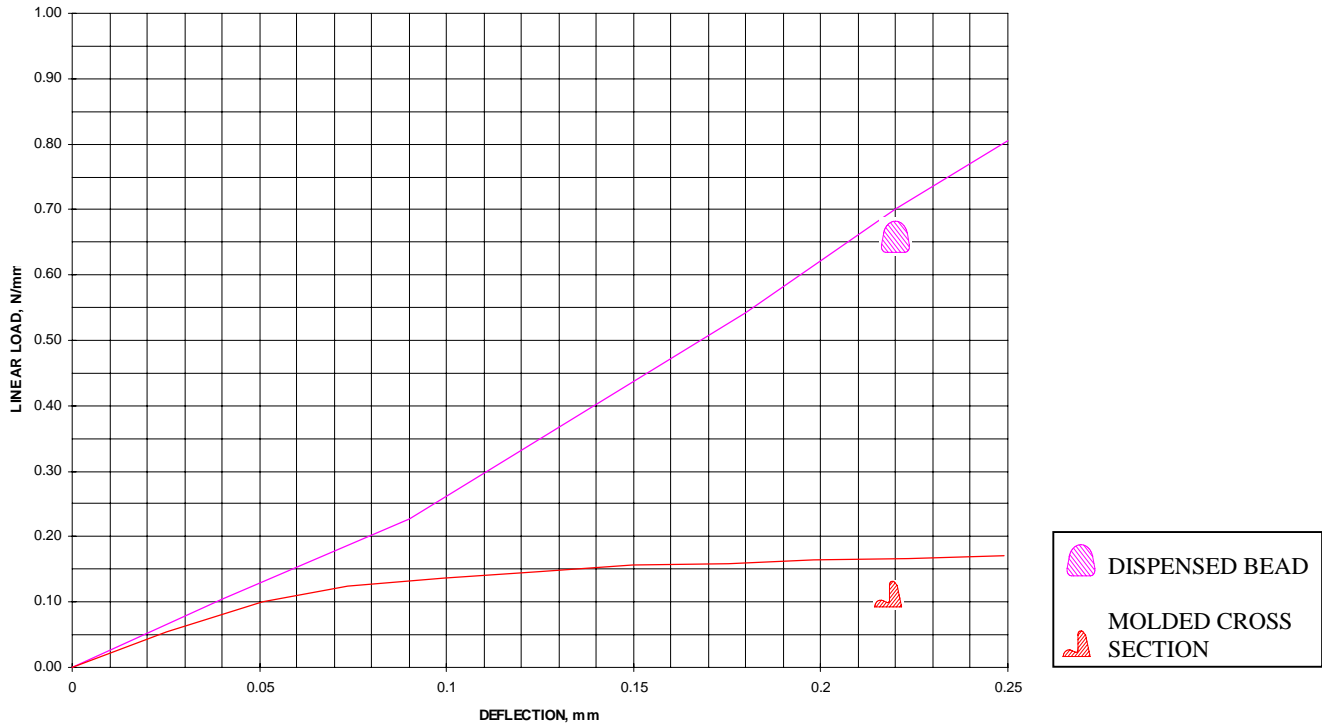
*Copies of CHO-TM-TP08 (Shielding Effectiveness Test Method for EMI Gaskets) and CEPS-0002 are available from Chomerics.

Table 2 - Typical Properties of ULTEM 2200 Plastic* Covers (without plating)

Property	Test Method	ULTEM 2200
Tensile Strength, yield, Type 1, 0.125 in. (3.2 mm), psi (MPa)	ASTM D638	20,100 (139)
Tensile Elongation, break, Type 1, 0.125 in. (3.2 mm), percent	ASTM D638	3.0
Flexural Strength, break, 0.125 in. (3.2 mm), psi (MPa)	ASTM D790	30,000 (207)
Flexural Modulus, 0.125 in. (3.2 mm), psi (MPa)	ASTM D790	900,000 (6,200)
Compression Strength, psi (MPa)	ASTM D695	28,700 (198)
Compression Modulus, psi (MPa)	ASTM D695	809,000 (5,575)
Izod Impact, notched, 73°F (23°C), ft-lb/in (J/m)	ASTM D256	1.6 (85)
HDT, 66 psi (0.45 MPa), 0.250 in. (6.4 mm), Unannealed °F (°C)	ASTM D648	410 (210)
Specific Gravity	ASTM D792	1.42
Volume Resistivity, ohm-cm	ASTM D257	7.0 E16
UL 94V-0 Flame Class Rating, in (mm)	UL 94	0.016 (0.40)
Oxygen Index (LOI), percent	ASTM 2863	50.0

*ULTEM is a trademark of General Electric Co.

Figure 1 - Compression Characteristics of CHO-VER SHIELD Elastomer Gaskets



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