

Conductive Elastomer (5000 Series)

Product Summary

Conductive elastomer is a molded silicone, fluorosilicone, or EPDM, elastomer filled with conductive inert metal particles. MAJR offers these conductive elastomers as specified in the MIL-DTL-83512 Standard (Table #1). Conductive elastomers are designed to provide reliable environmental and electromagnetic shielding for a wide range of EMI/RFI applications. The conductive elastomers are produced as sheets, molded parts, strips, die cut or water jet cut flat gaskets.

Product Application

Conductive elastomer should be used where there is a need for high broadband shielding combined with excellent weather-sealing properties.

To ensure proper electrical conductivity and environmental reliability the recommended design compression is 7%-15% of original height for die and/or water jet cut gaskets, 15%-30% for "O" and "D" extrusions, 20%-40% for hollow extrusions.

Adhering and Joining

MAJR recommends a two-component, electrically conductive silver silicone adhesive for adhering conductive elastomer gaskets to enclosures. The adhesive provides a flexible bond and a resilient complimentary environmental seal. Upon request, MAJR can provide this sealant with your order. MAJR also offers "in house" vulcanization for any splicing and joining of our extruded or die cut conductive silicone gaskets. Adhering fluorosilicone is performed with special adhesive.



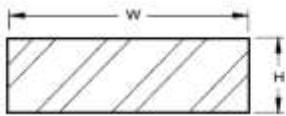
Product Technical Data

Material Selection — Table 1

Conductive Elastomer									
Material Designation Number		52	61	62	63	64	65	66	67
Elastomer	----	Silicone	Silicone	Silicone	Silicone	Fluorosilicone	Silicone	Silicone	Silicone
MIL-DTL-83528 Type	----	----	M	A	B	D	L	E	----
Material Description	----	Ni/Gr	Ag/Glass	Ag/Cu	Ag/Al	Ag/Al	Ag/Ni	Ag	Carbon
Volume resistivity	Ohm-cm	0.1	0.006	0.005	0.008	0.012	0.005	0.002	7
Hardness	Shore A	30-70	65	65	65	70	75	65	70
Operating Temp.	Deg. C. Min.	-55	-55	-45	-55	-55	-55	-55	-55
	Deg. C. Max.	150	160	125	160	160	125	160	200
Material Designation Number		68	69	74	75	76	77	78	79
Elastomer	----	Silicone	Fluorosilicone	Fluorosilicone	Fluorosilicone	Silicone	Fluorosilicone	Silicone	Silicone
MIL-DTL-83528 Type	----	K	F	C	----	I	----	H	G
Material Description	----	Ag/Cu	Ag	Ag/Cu	Ni/Gr	Ag	W/Al	Ag	Ag/Cu
Volume resistivity	Ohm-cm	0.004	0.002	0.01	0.1	0.01	1.00	0.005	0.007
Hardness	Shore A	85	75	75	65	45	60-70	80	80
Operating Temp.	Deg. C. Min.	-55	-65	-55	-55	-55	-50	-55	-45
	Deg. C. Max.	125	160	125	150	160	200	160	125

Conductive elastomer (5000 Series) (Cont.)

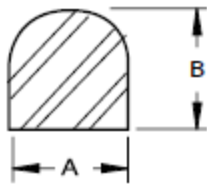
Table 2 - Standard Sheets: (Other Sizes Available)



Height	Part Number	Standard Size
.020 [0.51]	5000-021520-xx	15" x 20" [381 x 508 mm]
.032 [0.76]	5000-031520-xx	15" x 20" [381 x 508 mm]
.062 [1.57]	5000-061520-xx	15" x 20" [381 x 508 mm]
.093 [2.36]	5000-091520-xx	15" x 20" [381 x 508 mm]
.125 [3.18]	5000-121520-xx	15" x 20" [381 x 508 mm]

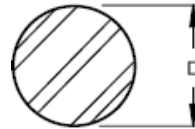
* Other sheet sizes available upon request.

Table 3 - Standard "D" Shapes



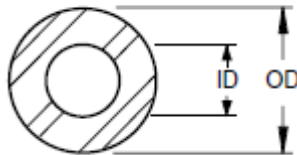
A Dimension*	B Dimension*	Part Number
.062 [1.57]	.065 [1.65]	5009-06006-xx
.093 [2.36]	.093 [2.36]	5009-09009-xx
.125 [3.18]	.125 [3.18]	5009-12012-xx
.188 [4.78]	.188 [4.78]	5009-18018-xx
.250 [6.35]	.250 [6.35]	5009-25025-xx

Table 4 - Standard Round:



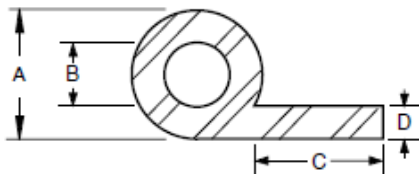
Diameter	Part Number
.062 [1.57]	5011-06000-xx
.093 [2.36]	5011-09000-xx
.125 [3.18]	5011-12000-xx
.188 [4.78]	5011-18000-xx
.250 [6.35]	5011-25000-xx

Table 5 - Hollow Core:



Outside Diameter	Inside Diameter	Part Number
.103	.040	5011-10040-XX
.125	.045	5011-12045-XX
.156	.050	5011-16050-XX
.250	.125	5011-25012-XX
.312	.192	5011-31019-XX
.375	.250	5011-38025-XX

Table 6 - P-Strip Tubing - Hollow Core:



A	B	C	D	Part Number
.200	.080	.650	.062	5012-20065-XX
.250	.125	.250	.062	5012-25025-XX
.250	.125	.375	.062	5012-25038-XX
.250	.150	.375	.062	5012-25015-XX
.312	.187	.563	.062	5012-31056-XX
.360	.255	.420	.070	5012-36042-XX
.200	.080	.275	.062	5012-20028-XX
.250	.125	.625	.062	5012-25063-XX

Conductive elastomer (5000 Series) (Cont.)

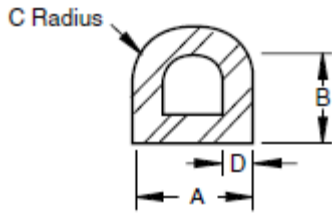


Table 7 - Hollow D-Strip:

A	B	C	D	Part Number
.156	.078	.078	.045	5013-16078-XX
.187	.093	.093	.050	5013-19093-XX
.250	.125	.125	.065	5013-25013-XX
.312	.156	.156	.062	5013-31016-XX
.312	.200	.112	.062	5013-31011-XX
.487	.080	.244	.080	5013-48024-XX

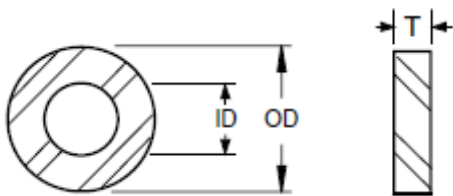


Table 8 - Flat Washers:

I.O. +/-0.015	O.D. +/-0.015	THICK T	MIL SPEC M83528/012X-()	MAJR PART NUMBER
.250	.625	.032	(001)	2603-025063-XX
		.062	(002)	2606-025063-XX
.375	.750	.032	(003)	2603-038075-XX
		.062	(004)	2606-038075-XX
.500	.656	.032	(005)	2603-050066-XX
		.062	(006)	2606-050066-XX
.500	.875	.032	(007)	2603-050088-XX
		.062	(008)	2606-050088-XX
.750	1.000	.032	(009)	2603-075010-XX
		.062	(010)	2606-075010-XX
1.000	1.438	.032	(011)	2603-100144-XX
		.062	(012)	2606-100144-XX

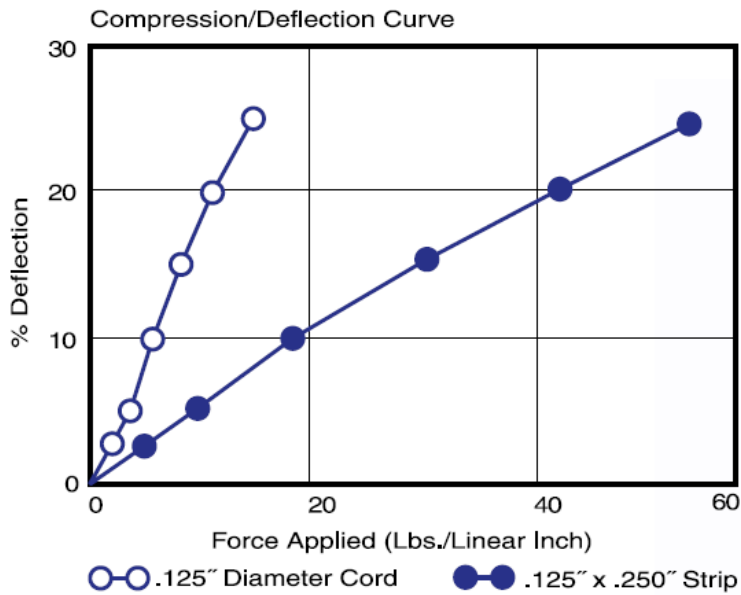
EMI Shielding Performance

MAJR's conductive elastomer Shielding Effectiveness has been tested in accordance with the test methodology as described in paragraph 4.6.12 of MIL-DTL-83528.

Conductive elastomer (5000 Series) (Cont.)

Figure 1

Compression and Deflection Data:



Ordering Information:

Replace xx with the appropriate material code:

- Nickel Graphite (52)
- Silver-Plated Glass (61)
- Silver-Plated Copper (62)
- Silver-Plated Aluminum (63)
- Silver-Plated Aluminum FluoroSilicone (64)
- Silver-Plated Nickel (65)
- Silver (66)

For cross-sections not listed above and custom design applications and molded parts, contact your MAJR representative.

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