

# Conductive Elastomers (5000 Series)

## General Descriptions

Conductive Elastomers are a molded elastomer filled with conductive inert particles. It provides high electrical conductivity, broadband shielding and moisture sealing.

## Application Information

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

In order to assure electrical conductivity and sealing reliability, recommended design compression is 7% - 15% of original height for sheets and rectangular strips. For "O" and "D" shapes the recommended compression is 12% - 30%.

## EMI Shielding Performance\*

MAJR's Conductive Elastomers Shielding Effectiveness has been tested in accordance with MAJR's Test Methods and based upon modified MIL-STD-285. Typical Shielding effectiveness values are based on a 5" square aperture.

MAJR's Conductive Elastomers Shielding Effectiveness has been tested in accordance with the test method described in paragraph 4.6.12 of MIL-DTL-83528.

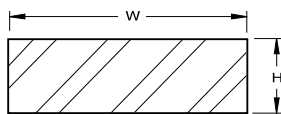
**Material Selection — Table 1**

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

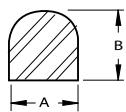
**Table 2 - Standard Sheets: (Other Sizes Available)**



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]

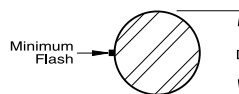
\* Other sheet sizes available upon request.

**Table 3 - Standard "D" Shapes**



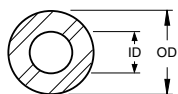
A Dimension*	B Dimension*	Part Number
.062 [1.57]	.065 [1.65]	5009-06006-xx
.093 [2.36]	.093 [2.36]	5009-09009-xx
.125 [3.18]	.125 [3.18]	5009-12012-xx
.188 [4.78]	.188 [4.78]	5009-18018-xx
.250 [6.35]	.250 [6.35]	5009-25025-xx

**Table 4 - Standard Round:**



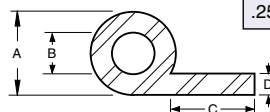
Diameter	Part Number
.062 [1.57]	5011-06000-xx
.093 [2.36]	5011-09000-xx
.125 [3.18]	5011-12000-xx
.188 [4.78]	5011-18000-xx
.250 [6.35]	5011-25000-xx

**Table 5 - Hollow Core:**



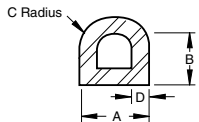
Outside Diameter	Inside Diameter	Part Number
.103	.040	5011-10040-XX
.125	.045	5011-12045-XX
.156	.050	5011-16050-XX
.250	.125	5011-25012-XX
.312	.192	5011-31019-XX
.375	.250	5011-38025-XX

**Table 6 - P-Strip Tubing - Hollow Core:**

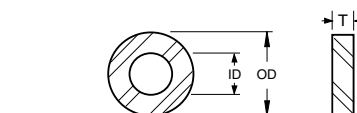


A	B	C	D	Part Number
.200	.080	.650	.062	5012-20065-XX
.250	.125	.250	.062	5012-25025-XX
.250	.125	.375	.062	5012-25038-XX
.250	.150	.375	.062	5012-25015-XX
.312	.187	.563	.062	5012-31056-XX
.360	.255	.420	.070	5012-36042-XX
.200	.080	.275	.062	5012-20028-XX
.250	.125	.625	.062	5012-25063-XX

**Table 7 - Hollow D-Strip:**



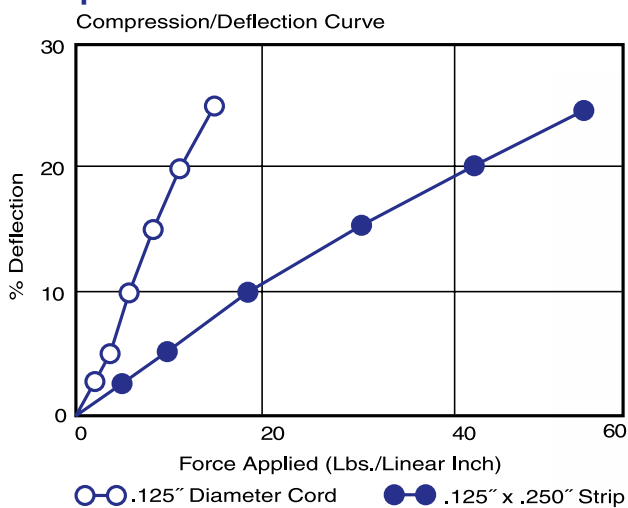
A	B	C	D	Part Number
.156	.078	.078	.045	5013-16078-XX
.187	.093	.093	.050	5013-19093-XX
.250	.125	.125	.065	5013-25013-XX
.312	.156	.156	.062	5013-31016-XX
.312	.200	.112	.062	5013-31011-XX
.487	.080	.244	.080	5013-48024-XX



**Table 8 - Flat Washers:**

I.O. +/- .015	O.D. +/- .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

**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.**