

## Display Connectors

## Elastomeric Connectors

Information about Product types  
and Technologies

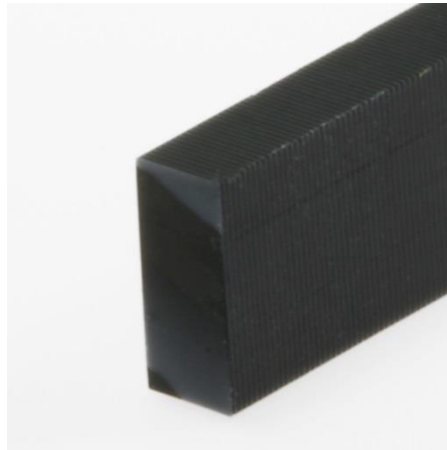


Material Composition	Information / Values
Organic Polymer Silicon Gum	65 % - 68 %
Silica	23 % - 28 %
Hydroxyl Silicon	4 % - 12 %
Conductive Material:	Carbon
Non Conductive Material:	Silica
Elastomeric Connectors are Latex free!	
Material hardness	Shore Hardness
Black Conducting Material	65° ± 5°
Black Insulating Material	55° ± 5°
Lateral Insulator Transparent	25° ± 5°
Lateral Insulator Red Foamed	20° ± 5°
Operating Temperature	-20°C up to +100°C
Storage Temperature	-40°C up to +120°C
Moisture	< 95 %
Standard Lifetime	10 Years
At Contact Area < 120 mm <sup>2</sup>	YL or YY
At Contact Area > 120 mm <sup>2</sup>	YS or YSP
Available Elastomeric Connector Types:	YL - YY - YS - YSP - DM

## Type YL

The YL Elastomeric Connector type is usually used with LCD modules that have a plastic frame or that must not come into contact with electrically conductive parts (short circuit!). The Shore hardness is about 50° to 70°, conductive and non-conductive paths alternate.

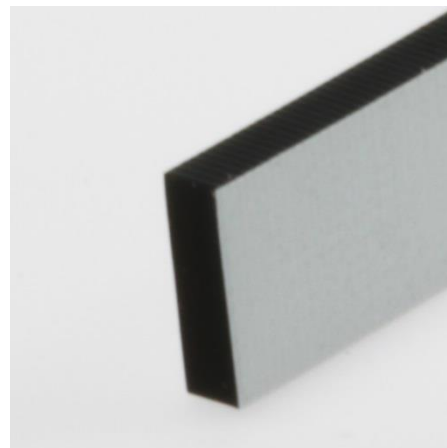
The conductive rubber is not insulated on all four sides, it is used as a base for the types YY, YSP and YS.



			0,05P	0,10P	0,18P
P	Pitch	mm	0,05 ± 0,02	0,1 ± 0,03	0,18 ± 0,04
L	Length	mm	L < 70 ± 0,3		70 < L < 120 ± 0,45
			120 < L < 200 ± 0,6		200 < L < 300 ± 0,8
H	Height	mm	1,0 < H < 5,0 ± 0,1		5,0 < H < 15,0 ± 0,15
W	Width	mm	0,4 < W < 1,5 ± 0,1	1,5 < W < 2,5 ± 0,12	2,5 < W ± 0,15
C	Conductor Width	mm	0,025	0,05	0,09
I	Insulator Width	mm	0,025	0,05	0,09

## Type YY

Is correlating to type YL-Type but is insulated on both sides with a thin, non conductive layer. Short circuits between the single conductive layer could be excluded.

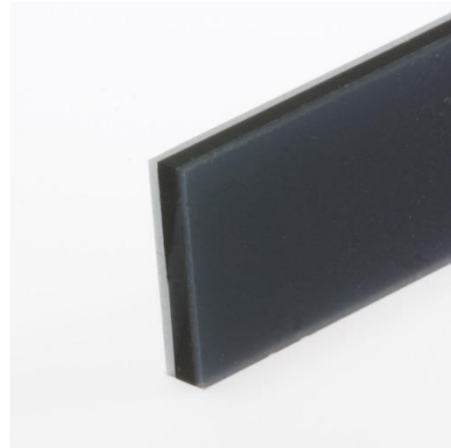


			0,05P	0,10P	0,18P
P	Pitch	mm	0,05 ± 0,02	0,1 ± 0,03	0,18 ± 0,04
L	Length	mm	L < 70 ± 0,3		70 < L < 120 ± 0,45
			120 < L < 200 ± 0,6		200 < L < 300 ± 0,8
H	Height	mm	1,0 < H < 5,0 ± 0,1		5,0 < H < 15,0 ± 0,15
W	Width	mm	0,4 < W		
C	Conductor Width	mm	0,025	0,05	0,09
I	Insulator Width	mm	0,025	0,05	0,09
S	Coating	mm	0,02 – 0,04		
YL	Core Width	mm	W > 0,4		

## Type YS

With increasing dimensions (l x h x w), the shore strength of the outer insulators should get lower. In this case the YS-type will be used. Both outsides consist of a soft, transparent and non conductive rubber layer.

In comparison to the overall width, the conductive area is relatively small.



			0,05P		0,10P		0,18P	
P	Pitch	mm	0,05 ± 0,02		0,1 ± 0,03		0,18 ± 0,04	
L	Length	mm	L < 70 ± 0,3		70 < L < 120 ± 0,45			
			120 < L < 200 ± 0,7		200 < L < 300 ± 0,9			
H	Height	mm	1,5 < H < 5,0 ± 0,1		5,0 < H < 15,0 ± 0,15			
W	Width	mm	1,2 < W < 2,5 ± 0,15		2,5 < W < 4,0 ± 0,2			
C	Conductor Width	mm	0,025		0,05		0,09	
I	Insulator Width	mm	0,025		0,05		0,09	
YL	Core Width	mm	0,4	0,6	0,8	1,0	1,2	1,5

## Type YSP

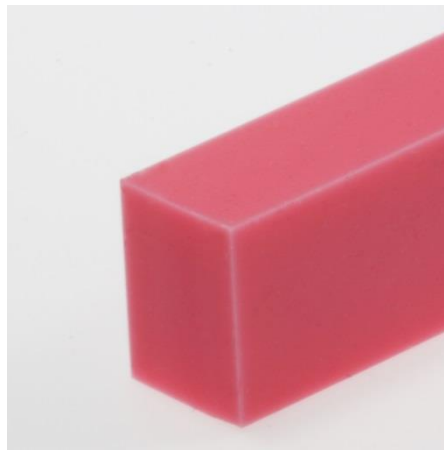
If the dimensions (l x h x w) are getting even larger, a non-conductive sponge is preferred for the outside, i.e. the YSP conductive rubber is foamed red on both sides.



			0,05P		0,10P		0,18P	
P	Pitch	mm	0,05 ± 0,02		0,1 ± 0,03		0,18 ± 0,04	
L	Length	mm	L < 70 ± 0,3		70 < L < 120 ± 0,45			
			120 < L < 200 ± 0,6		200 < L < 300 ± 0,8			
H	Height	mm	1,5 < H < 5,0 ± 0,1		5,0 < H < 15,0 ± 0,15			
W	Width	mm	0,6 < W < 1,5 ± 0,1		1,5 < W < 2,5 ± 0,12		2,5 < W < 0,15	
C	Conductor Width	mm	0,025		0,05		0,09	
I	Insulator Width	mm	0,025		0,05		0,09	
YL	Core Width	mm	0,4	0,6	0,8	1,0	1,2	1,5

## Type DM / Sponge-Type

The DM-Type / Sponge-Type is made out of non-conductive silicone rubber and is mainly used as a protective material or spacer in combination used with Elastomeric connectors

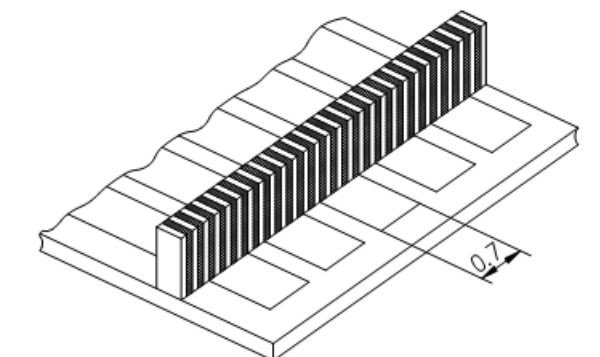
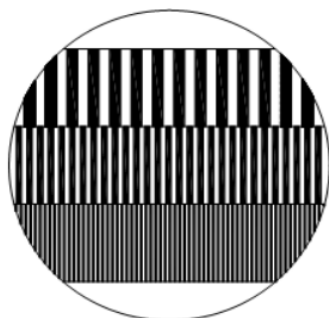


L	Length	mm	$L < 70 \pm 0,3$	$70 < L < 120 \pm 0,45$	
			$120 < L < 200 \pm 0,7$	$200 < L < 300 \pm 0,9$	
H	Height	mm	$1,5 < H < 5,0 \pm 0,1$	$5,0 < H < 20,0 \pm 0,15$	
W	Width	mm	$0,4 < W < 1,0 \pm 0,1$	$1,1 < W < 2,5 \pm 0,15$	$2,5 < W \pm 0,2$

## Compression and Pitch

To assure a good electrical contact between PCB and LC-display, an oversize of ca. 15 % has to be added to the height of the rubber connector!

That at least four conductive layers meet the contacts, the pitch has to be selected accordingly.



## Physical Properties



Parameter Physical Properties Type Y...		Material of the "Stripes"		Insulating layer of the flanks	
		Black Conductive Material YL, YS, YY, YSP	Black Insulation Material YL, YS, YY, YSP	YS*	YSP**
Volume Resistivity	Ω cm	3 ~ 6	1x10 <sup>14</sup>	1x10 <sup>11</sup>	8x10 <sup>13</sup>
Dielectric Strength	KV/mm		23~27	23~27	
Specific Gravity	g/mm <sup>3</sup>	1.25	1.2	1.16	1.1
Hardness	Shore A	65 ± 5	55 ± 5	25 ± 5	20 ± 5
Tensile Strength	N/mm <sup>2</sup>	5.0~6.0	7.0~8.5	7.5~9.0	3.0~4.0
Elongation	%	150~200	180~250	250~350	400~500
Insulator Resistance 500VDC	Ω		10 <sup>14</sup>	10 <sup>14</sup>	
Temperature Range	°C	-20° ~ +100°	-20° ~ +100°	-20° ~ +100°	
Skew	°	0°~max 3°			
Current Density at 25°C	mA/mm <sup>2</sup>	1			

\* transparent

\*\* red foamed

### ADKOM Elektronik GmbH

P.O. Box 1133 – Oberhaeuser Str. 12 – 73098 Rechberghausen – Germany

Phone: +49-(0)7161-9589-0 – Fax: +49-(0)7161-9589-99 – info@adkom.de