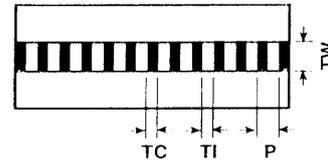
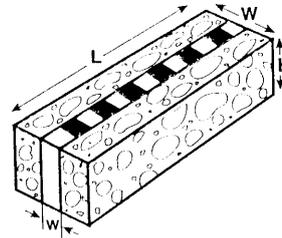
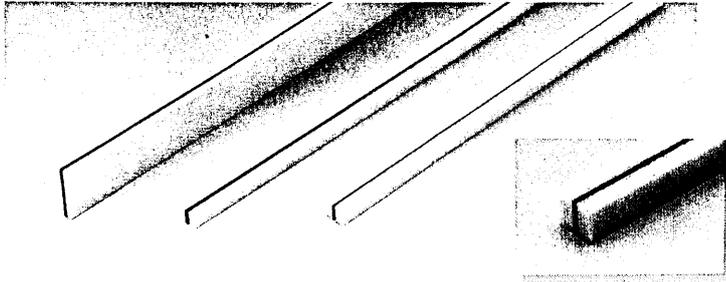


ELPACTO[®] Carbon-Zebra solid self supported Connectors

LG Type

This type uses the L type as the connector material. Both ends are supported by a sponge rubber insulator. Since sponge rubber is used, the hardness of the insulator at both ends is lower than that of the LS type, and it is suitable for connection of large displays.

Normally applicable to LCD watches, clocks, calculators, panel meters, games, typewriters, TV's, radios, ect.



Dimensions

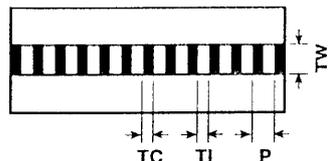
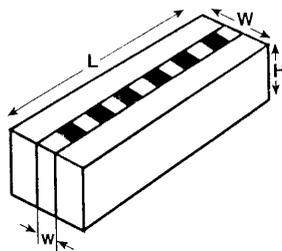
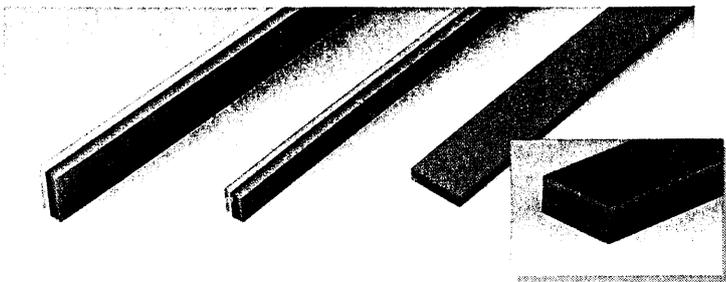
Item	Units	0.10P	0.18P	0.25P
Pitch	P mm	0.10±0.05	0.18±0.06	0.25±0.07
Length	L mm	1.0-20.0±0.15	20.1-50.0±0.2	50.1-100.0±0.3
		100.1-150±0.4	150.1-200.0±0.6	200.1-300.0±0.8
Height	H mm	0.8-5.0±0.1	5.1~ +0.15 -0.1	
Width	W mm	1.5-2.5±0.1	2.5~±0.15	
Conductor width	Tc mm	0.05±0.03	0.09±0.04	0.13±0.05
Insulator width	Ti mm	0.05	0.09	0.12
Standard	W' mm	0.4±0.05		

Physical Properties

Parameter	Insulator	Conductor	Sponge
Volume Resistivity	5×10^{11} ohm-cm	3-5 ohm-cm	1×10^{12} ohm-cm
Dielectric Strength	25 Kv/mm		25 Kv/mm
Specific Gravity	1.20	1.22	1.16
Hardness	55±5	65±5	25±5
Tensile Strength	70 kg/cm ²	60 kg/cm ²	80 kg/cm ²
Insulation Resistance (@500VDC)	10^{11} ohms		10^{11} ohms
Temperature Range		-20 C to + 180 C	
maximum Current Density (@25 C)		1mA/mm	

LS Type

This type uses the L type as the connector material. Both ends are supported by rubber insulator having low hardness. Since the insulator is softer than that of the L type, it is suitable for connection to large displays. Normally applicable to LCD watches, clocks, calculators, panel meters, games, typewriters.



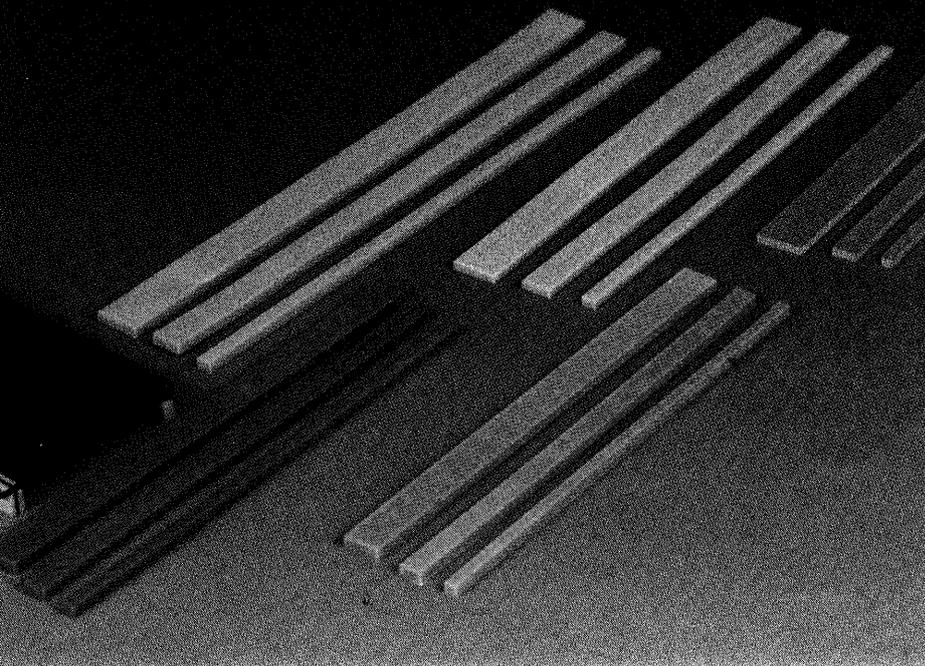
Dimensions

Item	Units	0.10P	0.18P	0.25P
Pitch	P mm	0.10±0.05	0.18±0.06	0.25±0.07
Length	L mm	1.0-20.0±0.15	20.1-50.0±0.2	50.1-100.0±0.3
		100.1-150±0.4	150.1-200.0±0.6	200.1-300.0±0.8
Height	H mm	0.8-5.0±0.1	5.1~ +0.15 -0.1	
Width	W mm	1.5-2.5±0.1	2.5~±0.15	
Conductor width	Tc mm	0.05±0.03	0.09±0.04	0.13±0.05
Insulator width	Ti mm	0.05	0.09	0.12
Standard	W' mm	0.4±0.05		

Physical Properties

Parameter	Insulator	Conductor	Side insulator
Volume Resistivity	5×10^{11} ohm-cm	3-5 ohm-cm	5×10^{11} ohm-cm
Dielectric Strength	25 Kv/mm		25 Kv/mm
Specific Gravity	1.20	1.22	1.12
Hardness	55±5	65±5	23±5
Tensile Strength	80 kg/cm ²	60 kg/cm ²	50 kg/cm ²
Insulation Resistance (@500VDC)	10^{11} ohms		10^{11} ohms
Temperature Range		-20 C to + 180 C	
maximum Current Density (@25 C)		1mA/mm	

ZEBRA® DUMMY ELASTOMERIC CONNECTORS



Nonconductive silicone strips made in the same exacting tolerances as the conductive ZEBRA® connectors.

Used in locations adjacent to the active connector to balance the overall leveling and positioning of the display; also to control shock and vibration, and for use as an environmental seal between bezels and LC displays.

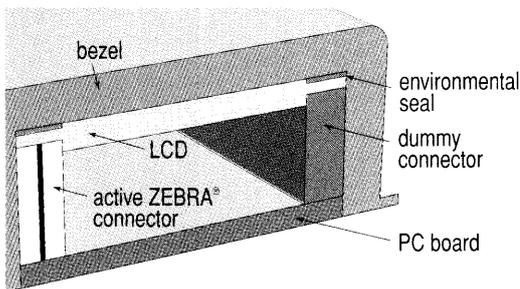
Can be installed in the same plane as the connector, and also between the bezel and the display in a variety of easy installation methods.

Consistent dimensional tolerance control assures accurate packaging.

APPLICATIONS:

- LCD and EL display balancing
- Bezel gasket, environmental seal
- Shock, vibration damping

Two types are available which match the mechanical functions of the active ZEBRA® connectors: extruded and closed cell sponge. A range of compression characteristics are available based on the material durometer selections shown below.



Typical Dummy ZEBRA® installation as an environmental seal and as dummy connector.

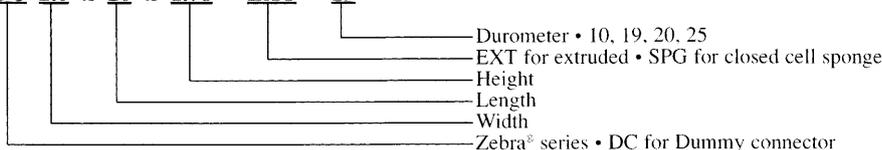
Type	Application Guidelines	Dimensions (mm)
		<i>maximum:</i>
Extruded	19 Durometer - translucent	Length 457.0
		Width 152.0
	25 Durometer - pink, blue	Thickness 0.38
		- in increments of 0.127 up to 1.78
		<i>maximum:</i>
Sponge	20 Durometer - pink	Thickness 0.38
		- in increments of 0.127 up to 1.78

Custom configurations are also available. For further information, contact Customer Service.

PART NUMBER NOMENCLATURE:

To specify a Dummy connector to your exact requirements, substitute the metric measurements for width, length and height according to the instructions below.

ZEBRA DC 2.0 x 20 x 1.78 - EXT - 19



All dimensions in millimeters

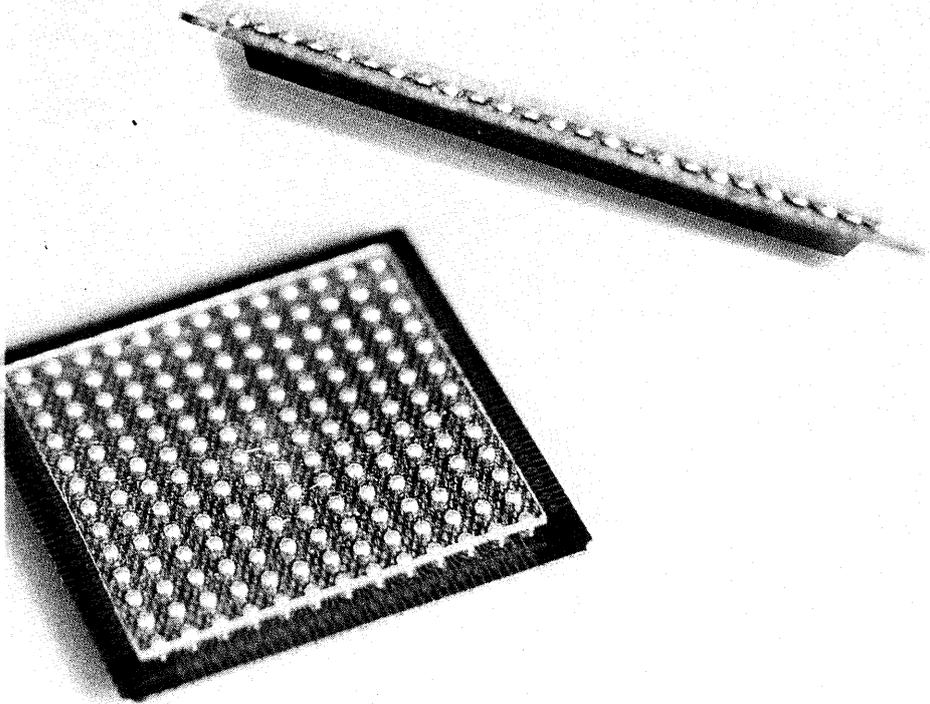


ZEBRA® W SERIES ELASTOMERIC CONNECTORS

Excellent for **Ball Grid Arrays** and similar type interconnects. Extremely accurate silicone rubber electronic connectors with anisotropic conductive properties. A range of 300 to 2,000 fine metal wires per 1 cm² are embedded in the thickness direction of the transparent silicone rubber sheet. The fine metal conductors are gold-plated to ensure low resistance and the ability to withstand a relatively high current flow.

High density and greatly increased number of I/O's are possible; especially beyond 200 connections. Eliminates the costs of soldering and related rework. Facilitates denser and less expensive packaging.

After inserting the correctly sized connector pad between the opposing groups of electrodes, all that is necessary is to apply the appropriate pressure to allow the electrodes to be properly connected.

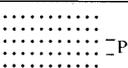
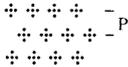
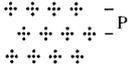


PRINCIPAL CHARACTERISTICS:

Measure	Unit	Thickness		Remarks
		0.5	1.0	
Continuity Resistance	Ω/mm ²	0.25	0.45	± 30%
Current Density	mA/mm ²	500		More than 1,500 hours
Resistance Between Adjacent Connector	Ω	10 ^m or more		C pattern p = 0.35
Light Transmission	%	90		1.0mm thick L pattern p = 1.0
Operating Temperature	°C	-20° to +120°		N/A

APPLICATIONS:

- **Ball Grid Arrays**
- **Tape Carrier Packs**
- **Quad Flat Packs**
- **Applied System Integrated Circuits**
- **Leadless Chip Carriers**
- **Plastic Leadless Chip Carriers**
- **Printed Circuit Board**

W Series	Pitch (P)	Pattern Side View	Pattern Plan View	Thicknesses	Recommended Electrode Pitch	Suitable Electrodes		Maximum Dimensions		Applications	Suitable Circuits
						Width	Length	Length	Width		
WSL	1.0			0.50	over 0.4	over 0.3	over 1.5	40.0	20.0	Combination type	BGA PCB LCD
				1.00	over 0.5	over 0.5	over 1.5				
WSC	0.35			0.50	over 0.6	over 0.7	over 0.9	40.0	20.0	Matrix type electrode	BGA PCB LCC
				1.00	over 0.7	over 0.7	over 0.9				
WBC	0.35			0.50	over 0.6	over 0.7	over 0.9	40.0	20.0	Matrix type electrode	BGA PCB LCC
				1.00	over 0.7	over 0.7	over 0.9				

Notes: (1) The **WSL** and **WSC** types have straight metal conductors protruding slightly from both top and bottom of the silicone rubber sheet to ensure perfect connections with slight pressure. Designed for mounting applications.

(2) The **WBC** type has curved fine metal conductors embedded in a silicone rubber sheet which are flush with the top and bottom planes. The curved configuration facilitates repeated compressions. Ideal for inspection applications.

PART NUMBER NOMENCLATURE:

