



# High Performance Silver ZEBRA Connector

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**FUJIPOLY DATA SHEET NUMBER FPDS 01-34 / Version 7**

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- Attention -

- 1) High Performance Silver ZEBRA  
SZ100 Type. 0.100mm Pitch  
FUJIPOLY DATA SHEET FPDS 01-34



# DATA SHEET

FPDS 01- 34 (Version 7)

## 1] Product Name :

High Performance Silver ZEBRA Connector.(SZ100 / 0.10mm pitch)

## 2] Features :

FUJIPOLY High performance Silver ZEBRA connectors are constructed of alternating parallel layers of electrically conductive and nonconductive silicone elastomer. The electrically conductive layer is filled with silver-metal particles.

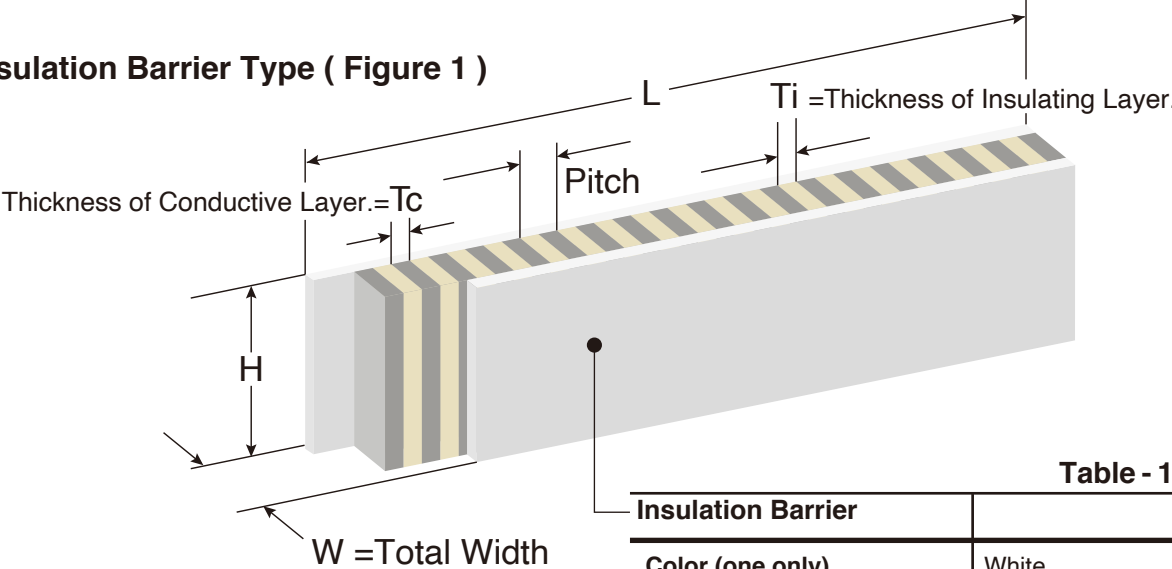
The composite alternating layers provide reliable electrical connection when placed between two aligned conducting surfaces.

The High Performance Silver ZEBRA Connector provides a redundant connection with a minimum of two conductive layers recommended per PCB contact pad. The connector is available with insulating barrier or silicone supports. The connectors are used for connecting electroluminescent ( EL ) and plasma type displays to PC boards or for connecting hybrid circuits to PC boards, among other applications.

The High Performance Silver ZEBRA connector is positioned between two aligned surfaces and is mechanically clamped together with a lid or another PCB. The connectors may be free standing or positioned in a retainer depending on packaging profiles and design.

**3] Variety of High Performance Silver ZEBRA Connector.**

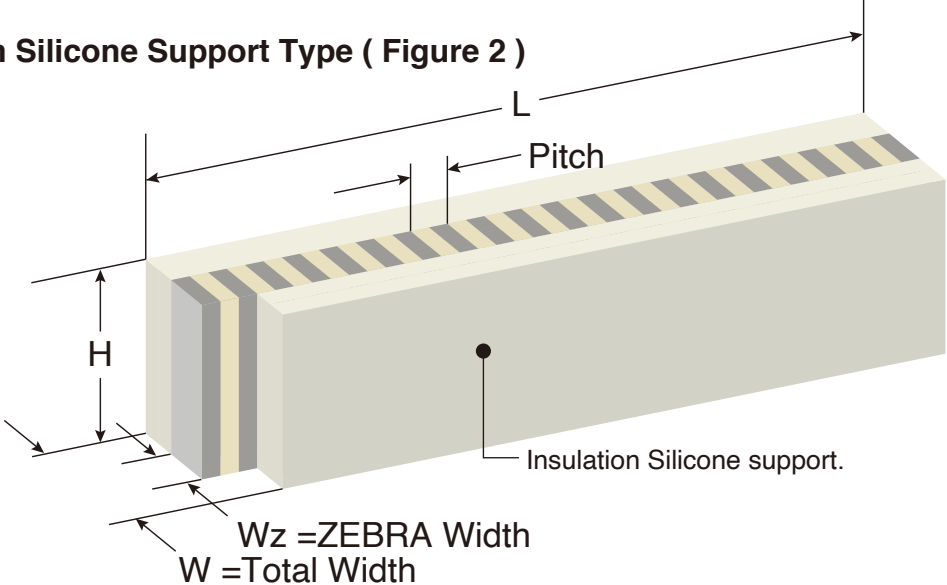
**3] -1) Insulation Barrier Type ( Figure 1 )**



**Table - 1**

Insulation Barrier	
Color (one only)	White
Thickness	0.002"(0.05mm)
Dielectric Strength	500 Volts/mil
Resistance (ohms)	10 <sup>12</sup>

**3] -2) Insulation Silicone Support Type ( Figure 2 )**



#### 4] Available Size and Tolerance.

Table - 2

Mesurement	Mark	MM : Size and Tolerance	inche : Size and Tolerance
Length	L	6.35mm ± 0.12 ~ 127.00mm ± 0.64	0.250" ± 0.005in ~ 5.000" ± 0.025in
Heigh	H	1.00mm ± 0.08 ~ 12.70mm ± 0.18	0.040" ± 0.003in ~ 0.500" ± 0.007in
Width	W	0.50mm ± 0.08 ~ 2.54mm ± 0.13	0.020" ± 0.003in ~ 0.100" ± 0.005in

#### 5] Design Recommendations.

Recommended deflection range is 5-25% of free height. Minimum deflection will vary with packaging applications and should consider overall height, PCB warpage, finish, etc.

Design recommendations for Solid type and Insulation Barrier type over 10.00mm deflect 1.27mm maximum. Insulation silicone support type. Over 10.00mm defect 1.50mm.

The use of an insulating barrier type or silicone self-support material on one or both sides of the connetor is recommehded. The silicone support is utilized to reduce clamp force and provide an element of environmental protection for a cost-effective connection.

Table - 3

6] Dimentional Specifications.		MM	inch
Contact Spacing Center - to -Center	Minimum	0.050	0.002
	No minal	0.100	0.004
Pich : Sum of the thickness of an adjacent conductive and Insulation layer	Maximum	0.150	0.006
	No minal	10 <sub>Line/mm</sub>	254 <sub>Line/inch</sub>
Individual conductive and Insulation Layer Thinckness	Minimum	0.030	0.001
	Maximum	0.075	0.003

#### 7] Typical Product Properties.

Table - 4

Operating Temperature Range	Minimum	-40°C ( -40°F )
	Maximum	+85°C ( +185°F )
Current Carrying Capacity	700 mA/mm <sup>2</sup>	1.0mm Pitch ( 0.50mm / 0.50mm )
Resistance Between Layers	10 <sup>12</sup> ohms	

## 8] Typical Material Properties.

Table - 5

Item Unit	Conductive Layer	Insulating Layer	Support Rubber
material	Silver Filled Silicone Rubber	Non-conductive Silicone Rubber	Non-conductive Silicone Rubber
Color	Silver Gray	Off-white	Light blue
Hardness Shore A	80	58	30
Tensile Strength MPa	2.0	7.7	4.0
Elongation %	120	380	400
Tear Strength KN/m	13	17	–
Volume Resistivity MΩ·m	1x10 <sup>-12</sup>	1x10 <sup>6</sup>	1x10 <sup>6</sup>

## 9] Calculation of Resistance and Force Deflection.

### 9] -1) Resistance

For the purpose of calculating the resistance of High Performance Silver ZEBRA Connector and testing them for compliance please use the following formula :

Table - 6

MM ( Metric )

$$R = \frac{H \times 0.01}{W \times Ew} + 0.10$$

Where :

R = Resistance in ohms.

W = Width of ZEBRA Portion (mm)

Ew = Electrode Pad width (mm)

H = Height of ZEBRA Portion (mm)

For the purpose of calculating the resistance of SZ Connector and testing them for compliance please use the formula.

### 9] -2) Force Deflection

Connector should be deflection 10 to 15% of Height (H) to calculate for deflection, use following formula.

#### Insulation Barrier Type.

$$F = (10.0 \times D \times W \times L) \times 9.8 \times 10^{-3}$$

#### Insulation Silicone Support Type.

$$F = [(10.0 \times D \times W \times L) + \{1.8 \times D \times (W - W_1) \times L\}] \times 9.8 \times 10^{-3}$$

Where : F = Force : N

$$D = \frac{H - H_1}{H} \times 100\%$$

H = Height of Connector ( mm )

H<sub>1</sub> = Deflected height of Connector ( mm )

W = Width of Connector ( mm )

W<sub>1</sub> = Width of ZEBRA Portion ( mm )

L = Length of Connector ( mm )

## 10] Others

FUJIPOLY website <http://www.fujipoly.com/>

## 11] Trade Marks



in USA and UK

# ZEBRA

### Notes :

- All FUJIPOLY test data in this document is based on FUJIPOLY test method and is believe to be accurate and reliable. Nevertheless, any FUJIPOLY test data shows typical product properties, and does not show the guaranteed product properties.
- Some Silicone oil could exude from the product according to operating conditions.
- Some low molecular Siloxane could vaporize from the product according to operating conditions.
- It is advisable to use the product under recommended operating condition. Some more Silicone oil could exude from the product if it was used over the recommended condition.
- It is advisable to use the product under parallel and even compression. Some more Silicone oil could exude from the product if it was used under excessive or partial stress.
- Products testing by the purchaser is recommended in order to meet expected results such as performance and application.

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