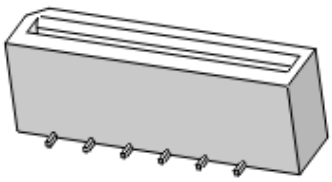
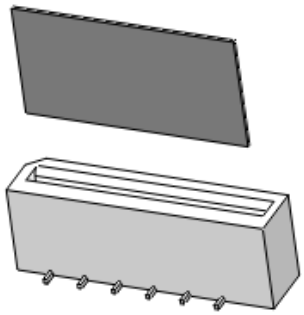
1LV51 Series

FPC connectors (1.0mm pitch, 5.1mm height) Vertical without FPC tabs

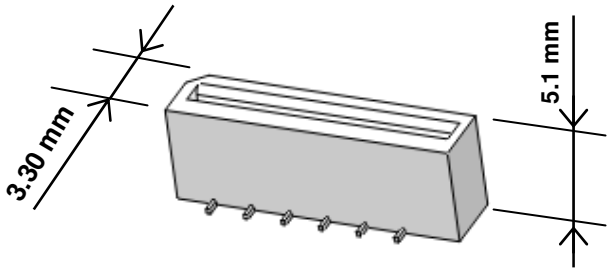




Features

1. Connector outline

The 1.0mm contact pitch, 5.1mm height, the width is 3.30mm.



2. Easy solder ability on the PC board

The soldering leads are on 1.0mm pitch, existing on front and back of the connector.

3. Vertical, easy FPC assembly

4. Compliance with RoHS Directive

5. Accepts standard thickness FPC

0.3mm thick standard Flexible Printed Circuit board can be used.

Ordering information

GB 1 LV NN N – 1 51 0 – 8 H

- **H: Lead and halogen free**
- **8: Tape and reel with PI-film**
- **0: Extension code**
- **51: FPC connector height 5.1mm**
- **1: General contact**
- **1: Gold plating**
  0: Tin plating
- **NN: Number of contacts**
- **LV: LIF single contact vertical**
- **1: FPC connector contact pitch (Pitch:1.0mm)**

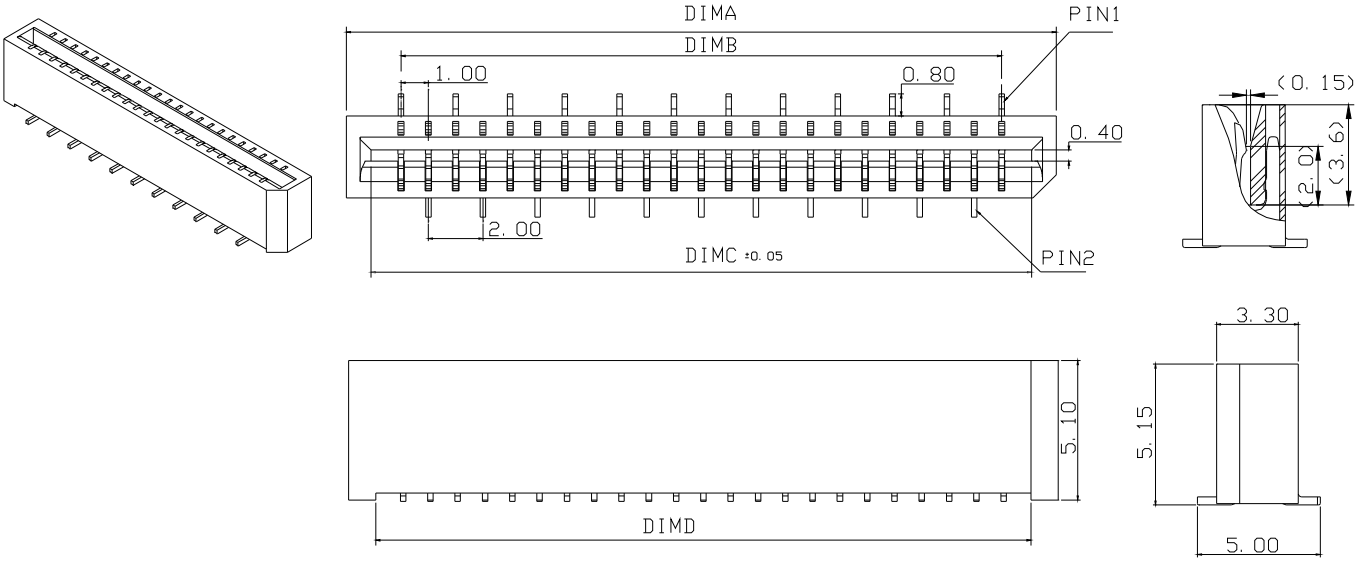
Specification

Item		Specifications	Conditions
Electrical characteristics	Rated current	0.5A/contact	
	Rated voltage	50V AC/DC	
	Insulation Resistance	500 MΩ min	To be measured between adjacent open circuits at 250V DC.
	Contact Resistance	Initial : 50 mΩ MAX. After test: 100 mΩ MAX.	To be measured between terminal and FPC at 1 KHz and 100mA after inserting the matching FPC.
	Dielectric Withstanding Voltage	No insulation break-down.	To be applied between adjacent open circuits at 250 V AC for a minute, trip current 2mA.
Mechainical characteristics	Retention Force of FPC	20gf/contact Min. (Initial)	The force to extract FPC shall be measured at rate of 25±3 mm per minute after inserting matching FPC. (Thickness of FPC shall be t=0.20mm at initial condition)
	Retention Force of Contact	100gf/contact Min. (Initial)	Measuring the maximun force. As the contact is axially pull out.
Environmental characteristics	Storage temperature	-40℃ to +85 ℃	
	Vibration	To meet the requirements of 50 mΩ max contact resistance,500 mΩ min insulation resistance,and no insulation break-down.	Vibrating for 2 hours each direction of X,Y and Z(total 6 hours)umder the condition of 1.5mm,f=10 to 55 to 10Hz per minute. During this test intermittent shall be measured by an ocilloscope with mA DC after connecting all terminals(34p)in series,
	Shock	To meet the requirements of 50 mΩ max contact resistance,500 mΩ min insulation resistance,and no insulation break-down.	To be subjected to 50 G half –sine shock pulses of 11 msec duration. 3 shocks in each direction applied along 3 mutually perpendicular planes,18 total shocks. During this test Intermittent shall be measured by an ocilloscope with 1 mA DC after connecting all terminals(34p)in series.
	Humidity (Steady State)	To meet the requirements of 50 mΩ max contact resistance,500 mΩ min insulation resistance,no insulation break-down and no remarkable damage of appearance.	Remained at room condition after exposing at condition of 60±2℃ and 90 to 95%RH for 96 hours.(Tests shall be made with mating the FPC.)
	Salt Spray	To meet the requirements of 50 mΩ max contact resistance,500 mΩ min insulation resistance,no insulation break-down and no remarkable damage of appearance.	The connector housing shall be subjected continuously to fine mist of salt solution at a temperature of 35 2℃ for 48h (Salt solution concentration: 5 1% by weight.) Then it shall be subjected to standard atmospheric condition for 1 h. After removing the salt deposits by water, the appearance of the connector housing shall be check. For other procedures, refer to IEC Pub. 68-2-11.
	Durability (Insertion & Withdrawal)	Contact Resistance: 50 mΩmax. No remarkable damage of appearance.	Mating and un-mating FPC up to 30 cycles.

Materials

Part	Material	Finish	Remarks
Housing	Thermoplastic	Color: Ivory	UL94V-0
Contact	Copper Alloy	Tin plating	

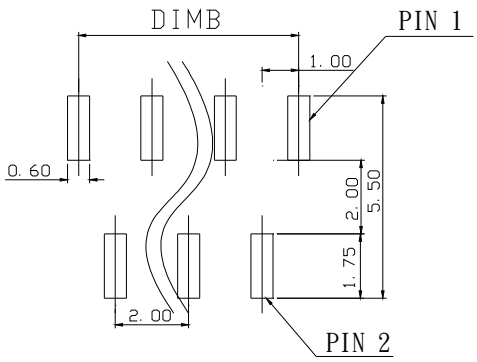
Connector Dimensions



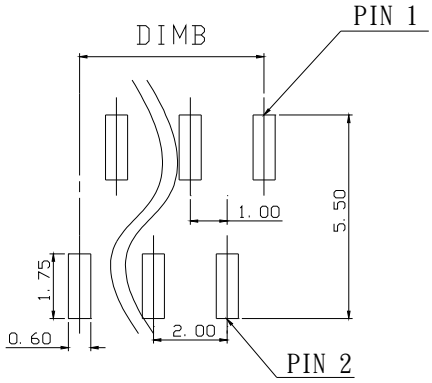
All dimensions: mm

Part Number	Pins	Dim. A	Dim. B	Dim. C	Dim. D	Part Number	Pins	Dim. A	Dim. B	Dim. C	Dim. D
GB1LV040-1510-8H	4	7.00	3.00	5.05	5.00	GB1LV200-1510-8H	20	23.00	19.00	21.05	21.00
GB1LV050-1510-8H	5	8.00	4.00	6.05	6.00	GB1LV210-1510-8H	21	24.00	20.00	22.05	22.00
GB1LV060-1510-8H	6	9.00	5.00	7.05	7.00	GB1LV220-1510-8H	22	25.00	21.00	23.05	23.00
GB1LV070-1510-8H	7	10.00	6.00	8.05	8.00	GB1LV230-1510-8H	23	26.00	22.00	24.05	24.00
GB1LV080-1510-8H	8	11.00	7.00	9.05	9.00	GB1LV240-1510-8H	24	27.00	23.00	25.05	25.00
GB1LV090-1510-8H	9	12.00	8.00	10.05	10.00	GB1LV250-1510-8H	25	28.00	24.00	26.05	26.00
GB1LV100-1510-8H	10	13.00	9.00	11.05	11.00	GB1LV260-1510-8H	26	29.00	25.00	27.05	27.00
GB1LV110-1510-8H	11	14.00	10.00	12.05	12.00	GB1LV270-1510-8H	27	30.00	26.00	28.05	28.00
GB1LV120-1510-8H	12	15.00	11.00	13.05	13.00	GB1LV280-1510-8H	28	31.00	27.00	29.05	29.00
GB1LV130-1510-8H	13	16.00	12.00	14.05	14.00	GB1LV290-1510-8H	29	32.00	28.00	30.05	30.00
GB1LV140-1510-8H	14	17.00	13.00	15.05	15.00	GB1LV300-1510-8H	30	33.00	29.00	31.05	31.00
GB1LV150-1510-8H	15	18.00	14.00	16.05	16.00	GB1LV310-1510-8H	31	34.00	30.00	32.05	32.00
GB1LV160-1510-8H	16	19.00	15.00	17.05	17.00	GB1LV320-1510-8H	32	35.00	31.00	33.05	33.00
GB1LV170-1510-8H	17	20.00	16.00	18.05	18.00	GB1LV330-1510-8H	33	36.00	32.00	34.05	34.00
GB1LV180-1510-8H	18	21.00	17.00	19.05	19.00	GB1LV340-1510-8H	34	37.00	33.00	35.05	35.00
GB1LV190-1510-8H	19	22.00	18.00	20.05	20.00	GB1LV350-1510-8H	35	38.00	34.00	36.05	36.00

Recommended PCB mounting



POS. NO. =5, 7, 9. . .



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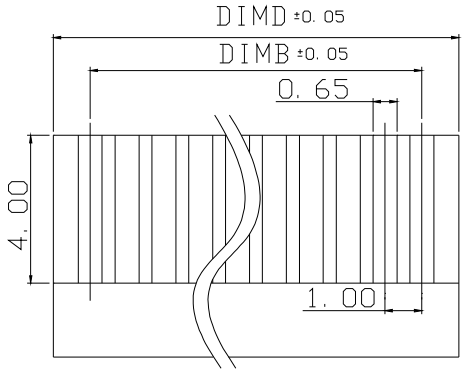
Recommended FPC dimensions

Finished thickness: t = 0.3 ± 0.03
The conductive parts should be based by Ni plating and then Au plating

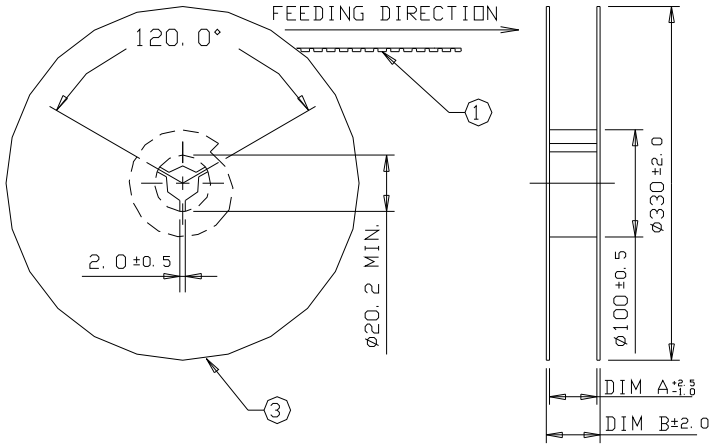


All dimensions: mm

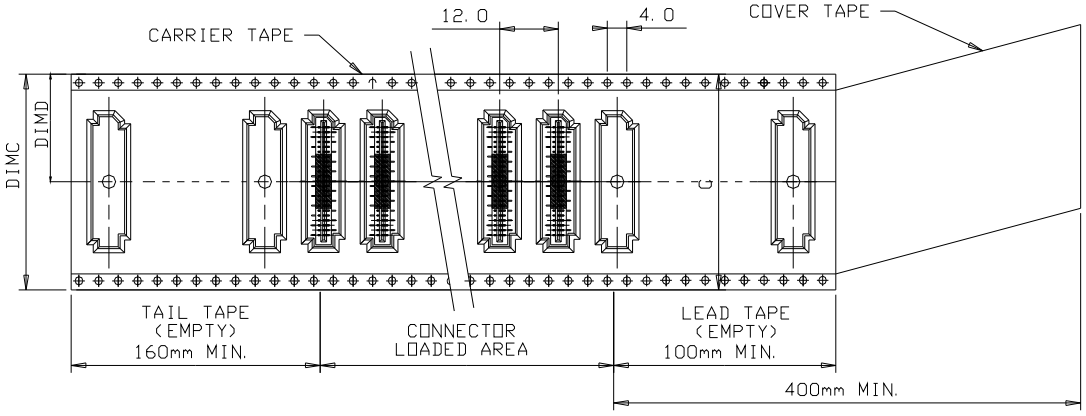
Part Number	Pins	Dim. B	Dim. D	Part Number	Pins	Dim. B	Dim. D
GB1LV040-1510-8H	4	3.00	5.00	GB1LV200-1510-8H	20	19.00	21.00
GB1LV050-1510-8H	5	4.00	6.00	GB1LV210-1510-8H	21	20.00	22.00
GB1LV060-1510-8H	6	5.00	7.00	GB1LV220-1510-8H	22	21.00	23.00
GB1LV070-1510-8H	7	6.00	8.00	GB1LV230-1510-8H	23	22.00	24.00
GB1LV080-1510-8H	8	7.00	9.00	GB1LV240-1510-8H	24	23.00	25.00
GB1LV090-1510-8H	9	8.00	10.00	GB1LV250-1510-8H	25	24.00	26.00
GB1LV100-1510-8H	10	9.00	11.00	GB1LV260-1510-8H	26	25.00	27.00
GB1LV110-1510-8H	11	10.00	12.00	GB1LV270-1510-8H	27	26.00	28.00
GB1LV120-1510-8H	12	11.00	13.00	GB1LV280-1510-8H	28	27.00	29.00
GB1LV130-1510-8H	13	12.00	14.00	GB1LV290-1510-8H	29	28.00	30.00
GB1LV140-1510-8H	14	13.00	15.00	GB1LV300-1510-8H	30	29.00	31.00
GB1LV150-1510-8H	15	14.00	16.00	GB1LV310-1510-8H	31	30.00	32.00
GB1LV160-1510-8H	16	15.00	17.00	GB1LV320-1510-8H	32	31.00	33.00
GB1LV170-1510-8H	17	16.00	18.00	GB1LV330-1510-8H	33	32.00	34.00
GB1LV180-1510-8H	18	17.00	19.00	GB1LV340-1510-8H	34	33.00	35.00
GB1LV190-1510-8H	19	18.00	20.00	GB1LV350-1510-8H	35	34.00	36.00

Recommended FPC dimensions

• **Specifications for the plastic reel**



• **Specifications for taping**



All dimensions: mm

Part Number	Pins	Dim. A	Dim. B	Dim. C	Dim. D
GB1LV040-1510-8H	4	24.40	30.40	24.00	12.00
GB1LV050-1510-8H	5	24.40	30.40	24.00	12.00
...	...	...	...	...	...
GB1LV110-1510-8H	11	24.40	30.40	24.00	12.00
GB1LV120-1510-8H	12	32.40	38.40	32.00	16.00
...	...	...	...	...	...
GB1LV170-1510-8H	17	32.40	38.40	32.00	16.00
GB1LV180-1510-8H	18	44.40	50.40	44.00	22.00
...	...	...	...	...	...
GB1LV280-1510-8H	28	44.40	50.40	44.00	22.00
GB1LV290-1510-8H	29	56.40	62.40	56.00	28.00
...	...	...	...	...	...
GB1LV350-1510-8H	35	56.40	62.40	56.00	28.00

Packaging capacity:
The 1,000 pieces per reel