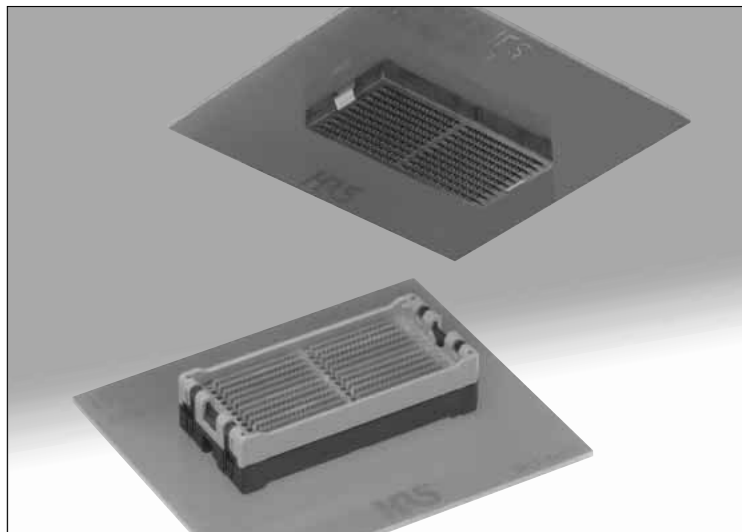


High Speed, Parallel Board-to-Board Connector 380 contacts, Ball-Grid array termination

IT2 Series



Features

1. High-speed transmission

Differential impedance: $100\Omega \pm 10\%$ (Tr. 70 ps)

2. Contact reliability

Hirose's unique double contact point on each of the contacts assures highly reliable electrical and mechanical performance.

3. Self-alignment

Our unique 3-piece modular design together with large tolerances in the X and Y axis allows mating of several connectors mounted on the same PCB.

4. Low insertion / withdrawal forces

The unique contact configuration assures insertion force of 75 N max.

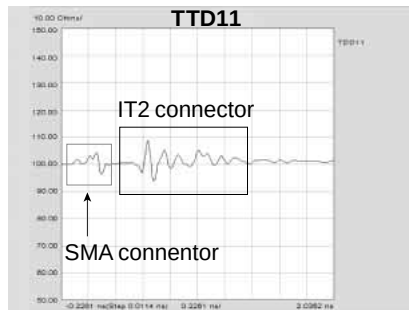
5. Customized Board-to-Board distance

Transmission module can be designed to accommodate distance of 15 to 50 mm between parallel boards.

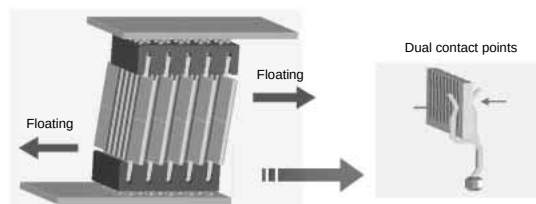
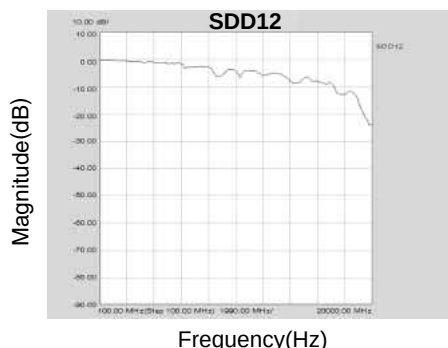
Applications

Routers, servers, base stations, communication equipment and other applications requiring high density and high speed connections between parallel boards.

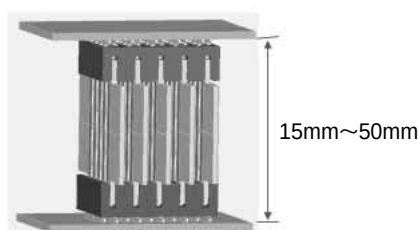
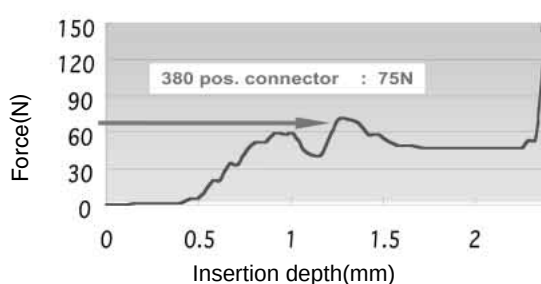
The IT2 series - TDR -



The IT2 series - Insertion Loss -



IT2 series-380 pos.



■Production Specifications

Ratings	Current rating	0.5A	Operating temperature range	-55℃ to +85℃ (Note 1)	Storage temperature range	-10℃ to +60℃ (Note 2)
	Current voltage	50V AC	Operating humidity range	Relative humidity 95% (No condensation)	Storage humidity range	40% to 70% (Note 2)

Item	Specification	Conditions
1. Insulation resistance	100 MΩ min.	100V DC
2. Withstanding voltage	No flashover or insulation breakdown.	150V AC / one minute
3. Contact resistance	50 mΩ max. (* Including conductor resistance.)	100 mA (Corresponding connector: IT2-380P-15H)
4. Vibration	No electrical discontinuity of 1 μs or more. No damage, cracks, or parts dislocation.	Frequency: 10 to 55 Hz, single amplitude of 0.75mm, 10 cycle in each of the 3 directions.
5. Shock	No electrical discontinuity of 1 μs. min. No damage, cracks, or parts dislocation.	Acceleration of 490 m/s², 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis
6. Humidity	Contact resistance: 20 mΩ max.	96 hours at 40℃±2℃ and humidity of 90% to 95%
7. Temperature cycle	Insulation resistance: 100 MΩ min. No damage, cracks, or parts dislocation.	Temperature: -55℃ → +15℃ to +35℃ → +85℃ → +15℃ to +35℃ Duration: 30 → 5 max. → 30 → 5 max. (Minutes) 5 cycles
8. Durability (insertion/ withdrawal)	Contact resistance: 20 mΩ max. Insulation resistance: 100 MΩ min. No damage, cracks, or parts dislocation.	20 cycles
9. Resistance to soldering heat	No deformation of components affecting performance.	Reflow: At the recommended temperature profile (Peak temperature: 250℃ max.) Detailed solder profile can be requested.

- Note1: Includes temperature rise caused by current flow.
- Note2: The term “storage” refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers non- conducting condition of installed connectors in storage, shipment or during transportation.
- Note3: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

■Materials/Finish

Receptacle

Part	Material	Finish	Remarks
Insulator	LCP	Color: Black	UL94V-0
Contacts	Phosphor bronze	Contact area: Gold plated	—
Metal fitting	Phosphor bronze	Tin plated	—

Transmission module

Part	Material	Finish	Remarks
Insulator	PBT	Color: Black/gray	UL94V-0
Board	FR-4	Contact area: Gold plated	—

Note: Lead free products

■Ordering information

Receptacles

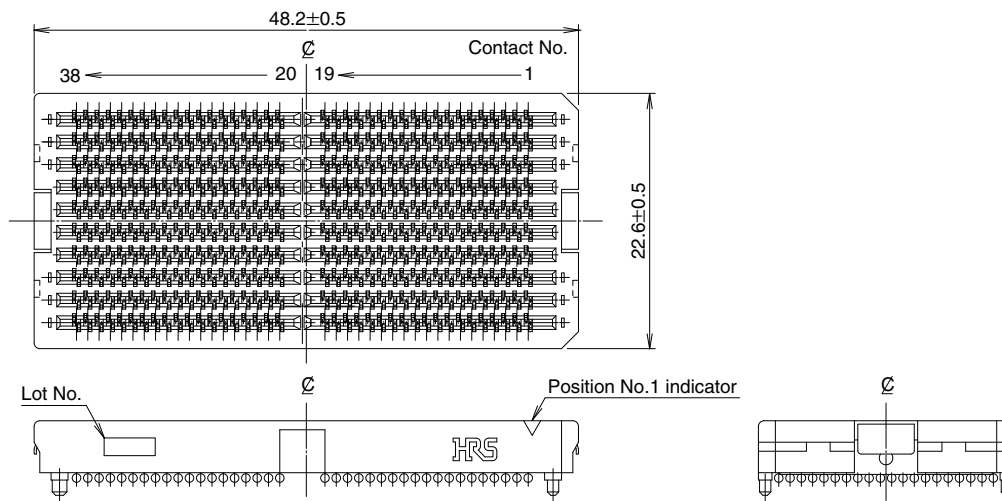
IT2 - 380 S - BGA
① ② ③ ④

Transmission module

IT2 - 380 P * - 15H
① ② ③ ⑤ ⑥

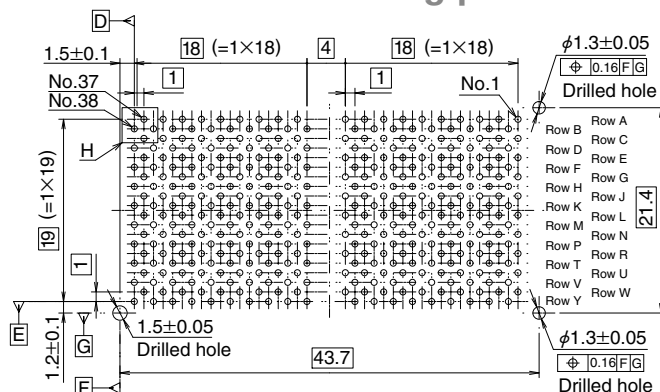
①	Series name	: IT2
②	Number of contacts	: 380
③	Connector	S : Receptacle P : Transmission module
④	BGA	Ball grid allay (Lead free)
⑤	Transmission	S : Standard M : Customized
⑥	Board to board distance	15H : 15mm 26H : 26mm 17H : 17mm 30H : 30mm 20H : 20mm 35H : 35mm 25H : 25mm

■Receptacle (2 required)

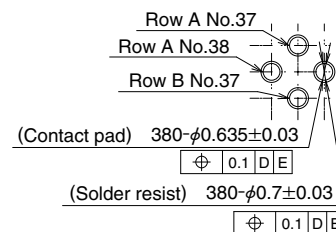


Part Number	CL No.	RoHS
IT2-380S-BGA	641-2001-9	YES

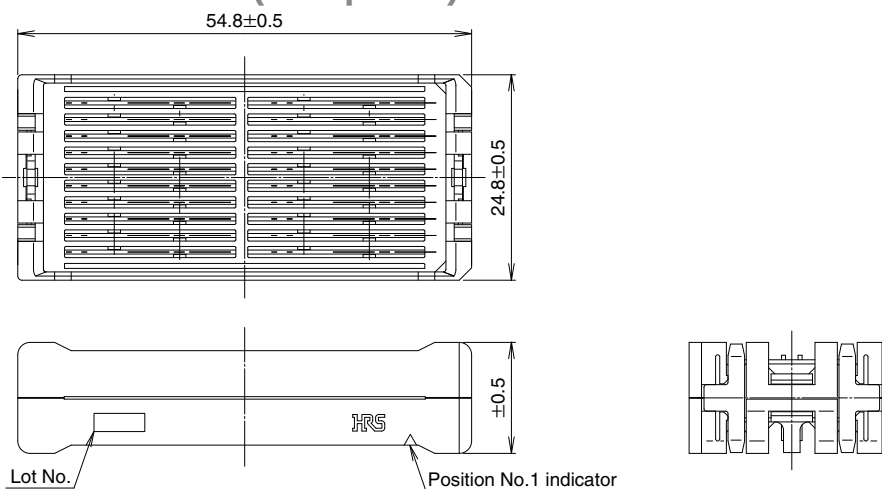
◆Recommend PCB mounting pattern



◆Detail “H”



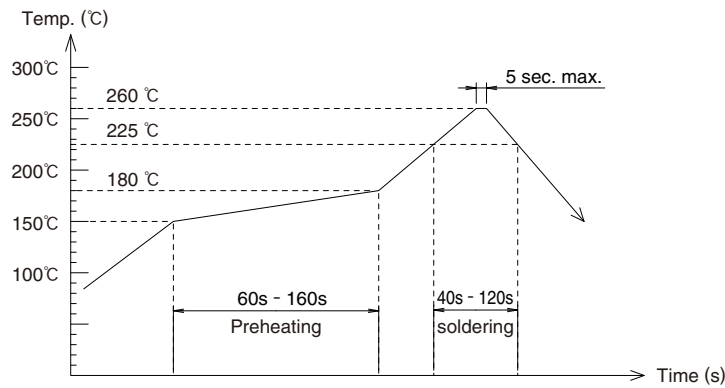
■Transmission module (1 required)



Part Number	CL No.	Board-to-board Distance	RoHS
IT2-380PS-15H	641-2151-1	15mm	YES
IT2-380PS-17H	641-2155-2	17mm	
IT2-380PS-20H	641-2256-0	20mm	
IT2-380PS-25H	641-2251-6	25mm	
IT2-380PS-26H	641-2255-7	26mm	
IT2-380PS-30H	641-2301-2	30mm	
IT2-380PS-35H	641-2300-0	35mm	

◆Recommend Temperature Profile

●Using Lead-free Solder Paste



Solder composition: Paste, 96.5% Sn/3.0% Ag/0.5% Cu

■Recomonded spacer Hight

The two parallel boards connected by the IT2 connectors should be fastened to additional spacers between them.

Board-to-board Distance	Part Number	CL No.	Recomonded spacer Hight
15mm	IT2-380PS-15H	641-2151-1	15.35±0.05 mm
17mm	IT2-380PS-17H	641-2155-2	17.35±0.05 mm
20mm	IT2-380PS-20H	641-2256-0	20.35±0.05 mm
25mm	IT2-380PS-25H	641-2251-6	25.35±0.05 mm
26mm	IT2-380PS-26H	641-2255-7	26.35±0.05 mm
30mm	IT2-380PS-30H	641-2301-2	30.35±0.05 mm
35mm	IT2-380PS-35H	641-2300-0	35.35±0.05 mm

