FTS Series circular high-speed connector

Product introduction

- Bayonet quick connect
- Single-channel differential transmission rate up to lOGbps
- Replaces marine FTS connector & No. 10 differential contact
- High-density type spectrum, each connectors can transmit 2 ~ 44 pairs of differential signals
- Support USB3.0, SATA3.0, Displayportl.2 and other protocols
- Wide range of finished cables (USB, SATA, Displayport, HDMI, cameralink, etc.)
  Or parallel differential cable, SMA coaxial cable and so on
- PCB crimp and wiring two kinds of termination
- Shape, fit the size of our FTP series * Fit standard FTP series tail Annex
- Small size, high strength
- Implementation of enterprise standards: Q / 21EJ2956-2015
-

Connector performance

[Mechanical behavior]

- Vibration: O.l G^2/Hz, each shaft l h
- Impact: 40g, 11ms
- Mechanical life: 500 times

[Environmental Performance]

- Connector working temperature: -65'C ~ + 175C, Cable components work temperature cable performance constraints
- Salt spray: stainless steel 1000 hours; copper alloy 500 hours; aluminum alloy 48 hours

[Electrical Performance]

- Rated current: 3A
- Rated voltage: 30VDC
- Low contact resistance: <40mQ (normal temperature)
- Insulation resistance:> 300MQ, 300VDC, lmin (room temperature)

Dielectric Withstanding Voltage: 300VDC (normal temperature)

[High-speed electrical performance]

- Characteristic impedance: 100 ± 10Q (loops rising time)
- Transfer rate: lOGbps;
- Insertion loss: <3dB (5GHz, connectors only)
- Near-end crosstalk: <-30dB (5GHz, connector only)
- Far-end crosstalk: <-30dB (5GHz, connector only)

Termination matters

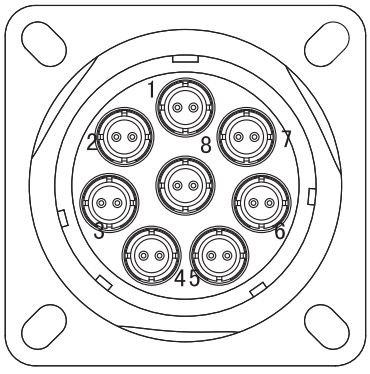
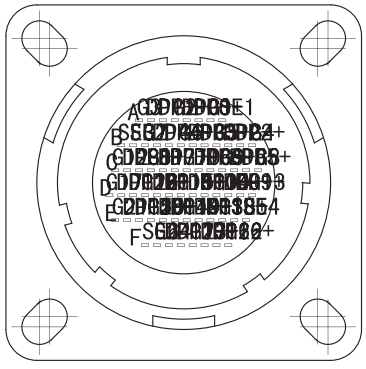
* The termination cable is welded; the cable requires 26AWG (inclusive) or less; the contact is not removable; the cable bending radius is generally 10 times the diameter.
* PCB socket with "fish-eye" welding-free structure with the printed circuit board termination; recommended thickness of more than 1.8mm PCB through the hole to do the backdrilling.

Product advantages

[Support Agreement Type]

Shell number	#16	#20	#27	#36
The number of differential pairs	2	6	18	44
USB 2.0	✓	✓	✓	✓
USB 3.0		✓	✓	✓
10G E			✓	✓
100G E			✓	✓
SATA	✓	✓	✓	✓
eSATA	✓	✓	✓	✓
Micro-SATA		✓	✓	✓
Mini-SAS			✓	✓
PCIe-X16				✓
4X IB (CX4)			✓	✓
HDMI		✓	✓	✓
Serial I/O			✓	✓
DVI		Single channel✓	✓	✓
Display Port			✓	✓
HDMI		✓	✓	✓
SFP+			✓	✓

[Maximum contact density and transmission rate]

		YMK
Contact density	30 shell 	36 shell 
Number of contacts	8 differential contacts	145 differential contacts
Differential pairs	8 right	44 right
	1.65Gbps	10Gbps

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Selection guide

① according to the installation method to choose the square plate / nut fastening socket or plug, check the connector type name to find the corresponding code;
② according to the required environmental performance of choice coating, check connector type name to find the corresponding code;
③ According to the required number of differential pairs, check the contact arrangement select the appropriate shell number, check the connector type name to find the corresponding code;
④ according to the required anti-error key bits, check the connector type name to find the corresponding code;
⑤ according to the wiring or access PCB board termination, check the connector type name to find the corresponding code;
⑥ The above code in the order of combination, and sent to Division I, printed circuit board socket can be purchased directly under the code, cable products from our company to provide you with cable ordering model procurement. Can also communicate directly with us selection.
⑦ PCB hole size inquiries Division I.
Note: The termination of the cable plugs, sockets on the welding quality requirements, the quality of the solder joints directly affect the differential impedance matching, and the solder joint spacing of only 1.27mm, the welding process more difficult. Therefore, it is not recommended that customers order their plugs and sockets automatically wire, it is recommended that the Secretary for your finished cable processing.

Connector model name

[Wiring connector]

Series name	**FTS**	**20**	T	28	K1	P	40	（W）
Shell number	16、20、27、36							
Shell form	T-plug F-square disk socket N-nut fastening socket							
Number of contacts	See "FTS Series Contact Arrangement"							
Insulator form	Z1-outlet installed short insulator K1-plug installed high insulator							
Housing structure	P-threaded tail, can be attached to the tail D-threaded, non-attachable pieces							
Plating	1 - aluminum alloy electroless nickel 11- copper alloy electroless nickel 12 - copper alloy satin nickel plated 40 - not pound steel passivation							
	The unmarked -N bond, (W) -W bond, (X) -X bond, (Y) -Y bond, (Z) -Z bond							

[Model mark example]
FTS20T28P40
Shielded plug, No. 20 shell, 28 contacts arrangement, high insulation plug installed, the tail of the thread, not pound steel passivation, N key bit.

Series name	FTSB	20	F	28	K1	P	40	(W)	-N
Shell number	16、20、27、36								
Shell form	F-square disk socket N-nut fastening socket								
Number of contacts	See "FTS Series Contact Arrangement"								
Insulator form	Z1- socket with a short insulator, crimp pin length 1.6mm K1 a plug with a high insulator, crimp pin length 1.6mm								
Housing structure	P-tail threaded, accessible accessories D- tail no thread, can not attach parts								
Plating	1- aluminum alloy electroless nickel plating 11-copper alloy electroless nickel 40 - stainless steel passivation								
Key bits	Unmarked N key, (W) -W key, (X) -X key, (Y) -Y key, (Z) -Z key								
Tail guide pin	No marking a default with guide pin N- no guide pin								

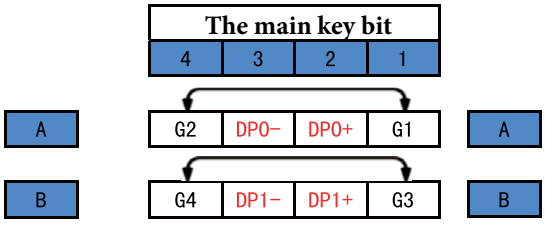
[Model Marking Example]

PCB SQUARE PLUG SOCKET, 20 CASE, 28 CONTACT, SOCKET INSTALLED INSULATOR, PCB PRESSED, PIN LENGTH 1.6mm, Tail MOMENTARY, DO NOT ACCESSIBLE, STAINLESS STEEL ACTIVATED, N KEY, Tail Strip Guide pin.

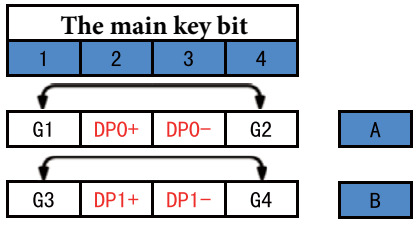
Contact arrangement

[16 Shell Contact Arrangement: 8]

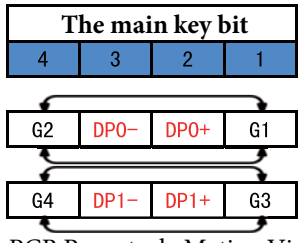
2 differential pair | 0 spare pin | Total 8 cores | Support USB 2.0, SATA



Wiring socket mating face view



Wiring plug face view



PCB Receptacle Mating View

Legend: DP0-, DP0 + ~ DPI-, DP1 + are differential pairs, G1 ~ G4 are grounded, double arrows are short-circuit conducting

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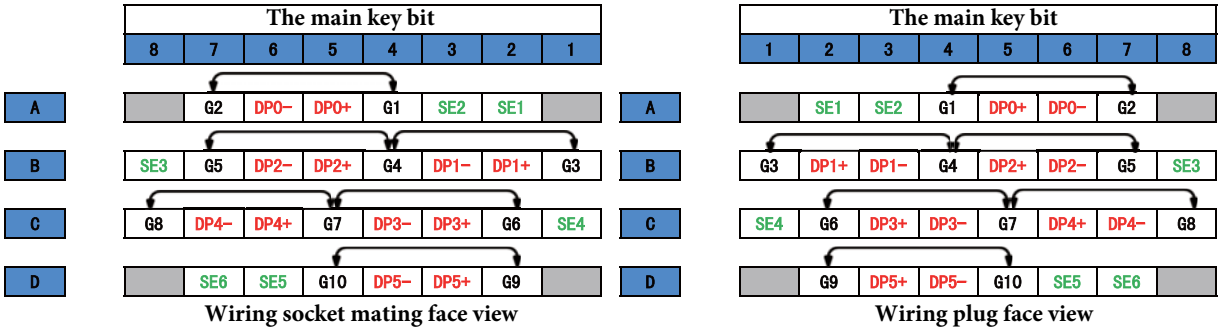
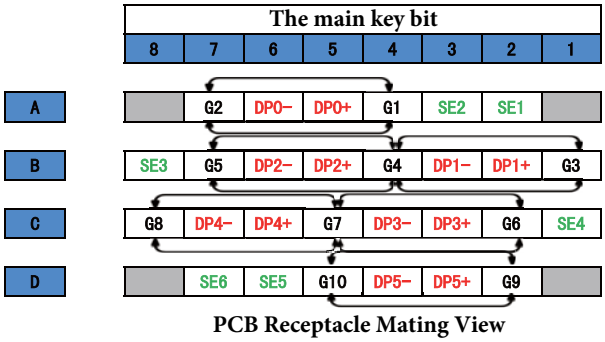
[20 Shell Contact Arrangement: 28]

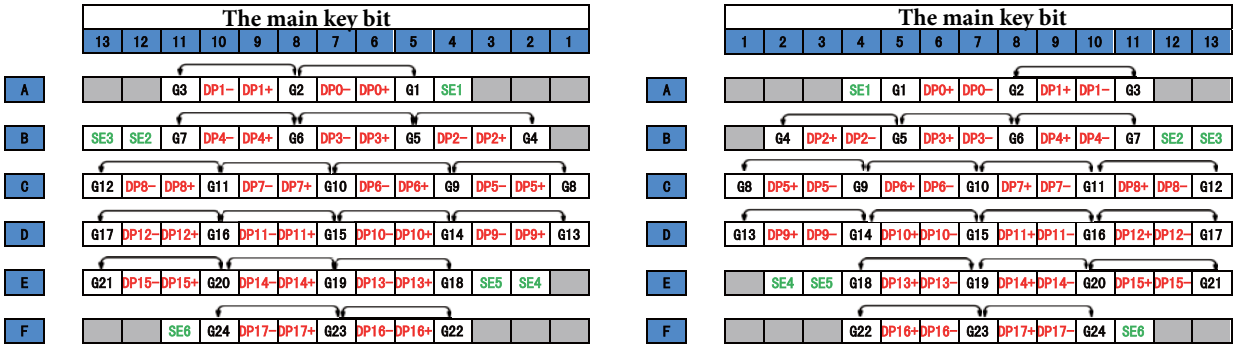
6 differential pairs | 6 spare pins | Total 28 core | Support USB 3.0, Mini-SAS

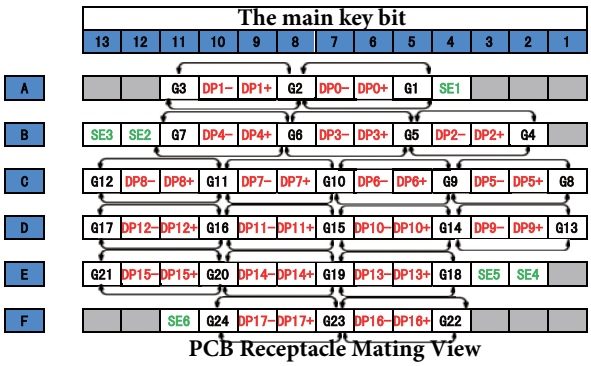




Legend: DP0-, DP0 + - DP5-, DP5 + are differential pairs, G1 to G10 are grounded, SE1 to SE6 are backup double arrows for short-circuiting

[27 Shell Contact Arrangement: 66]

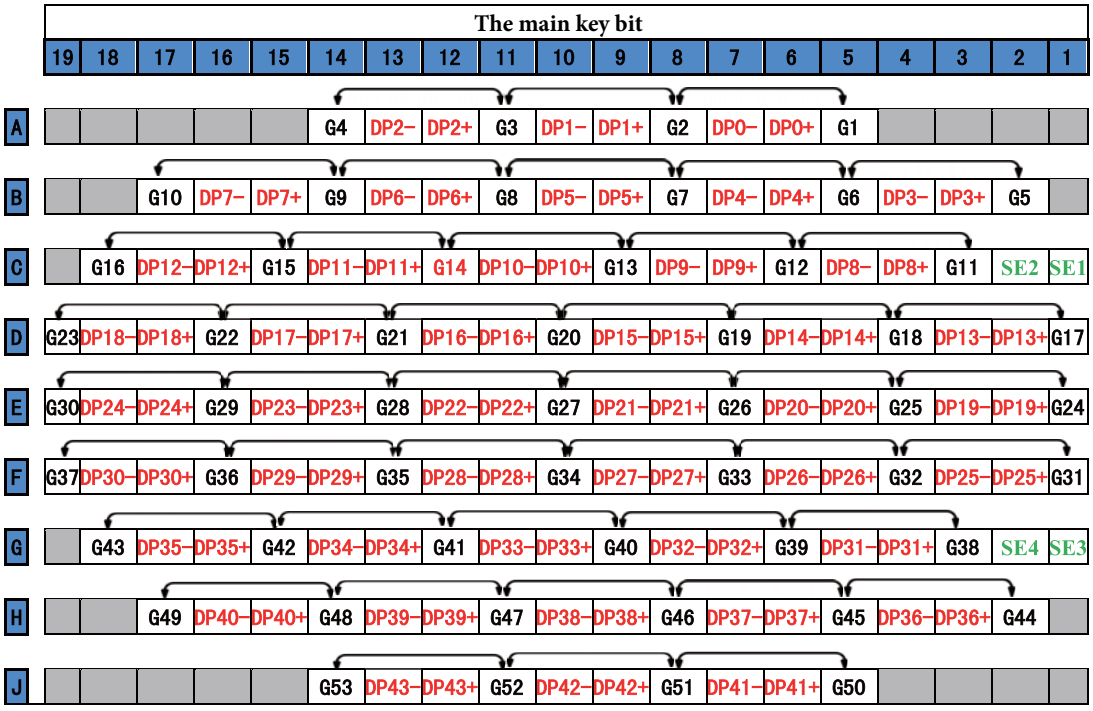




Legend: DP0-, DP0 + ~ DP7-, DP7 + are differential pairs, G1 ~ G24 are grounded, SE1 ~ SE6 are backup double-headed arrows for short circuit conduction

[36 Shell Contact Arrangement: 145]

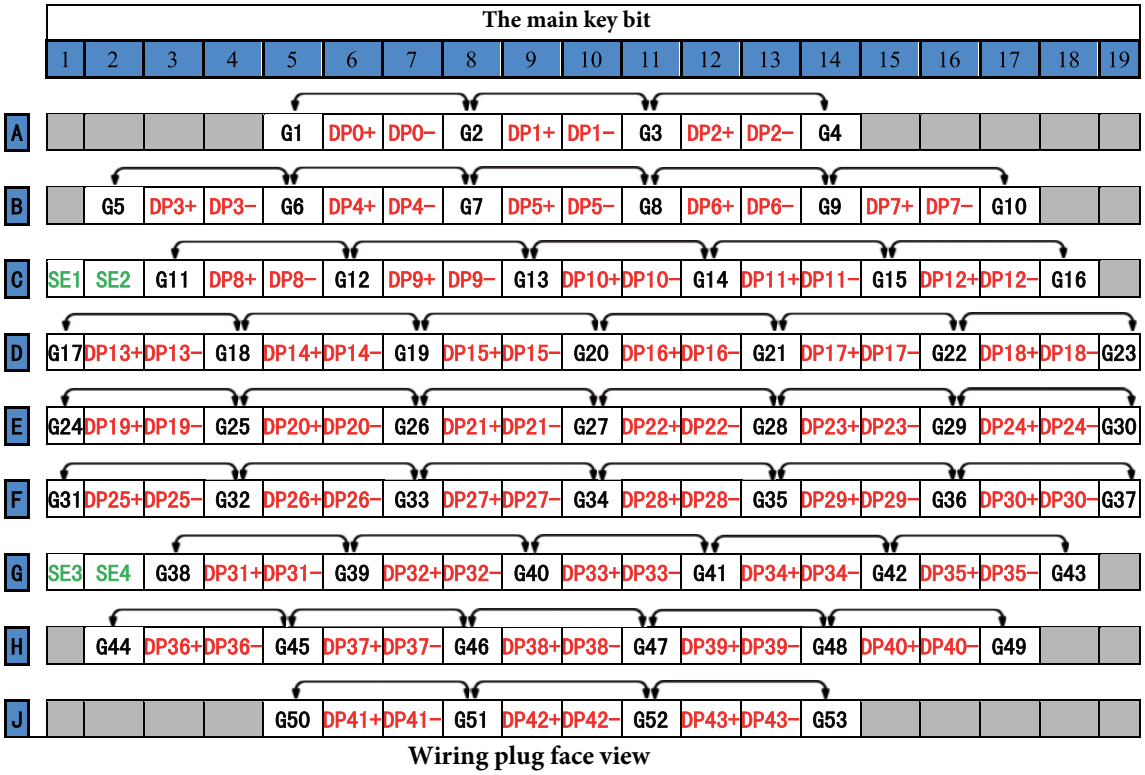
44 differential pairs | 4 standby pins | total 66 core | Support PCI-E, 12X InfiniBand



Wiring socket mating face view

Legend: DP0-, DP0+ ~ DP43-, DP43 + for the differential pair, G1 ~ G53 is grounded, SE1 ~ SE6 is standby

Double arrow for the short-circuit conduction



Wiring plug face view

Legend: DP0-, DP0 + ~ DP43-, DP43 + for the differential pair, G1 ~ G53 is grounded, SE1 ~ SE6 is standby

Double arrow for the short-circuit conduction

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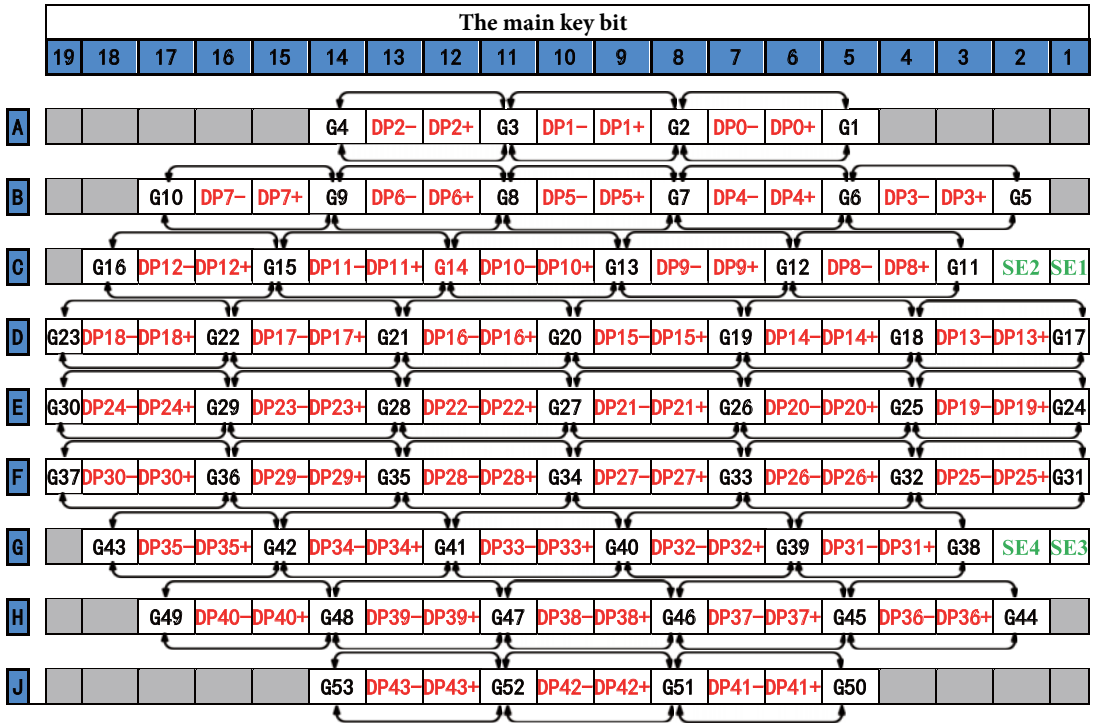
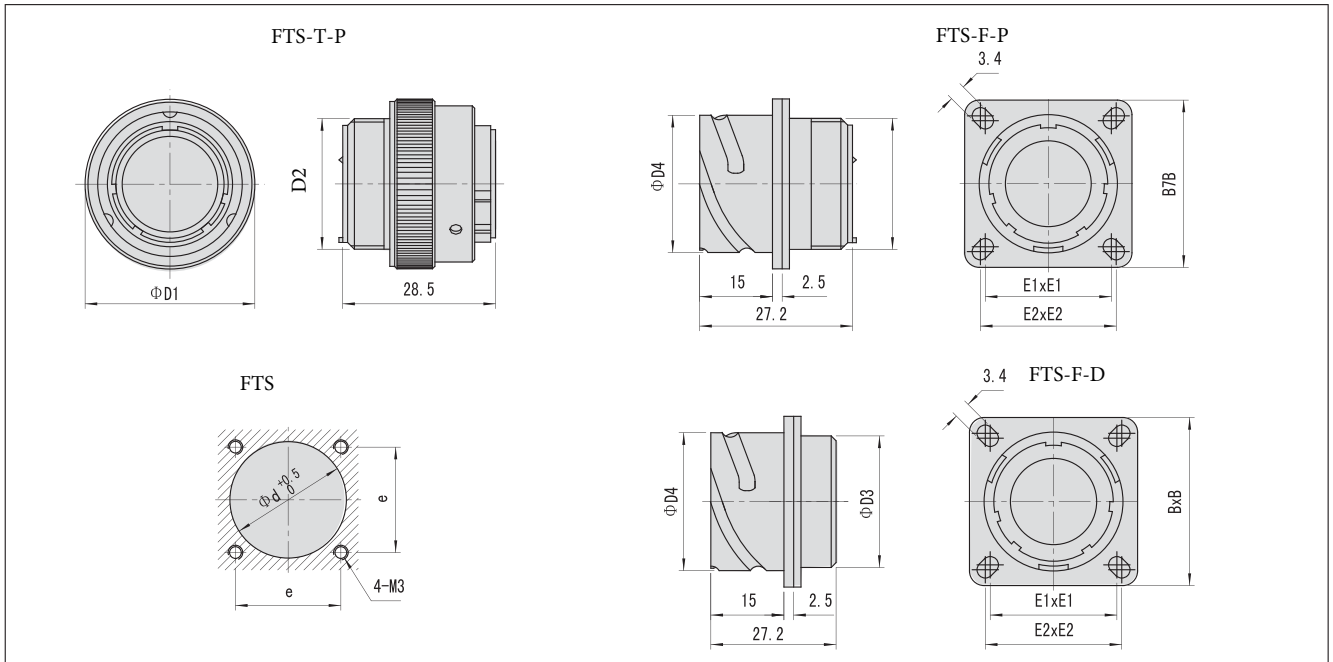


PCB Receptacle Mating View

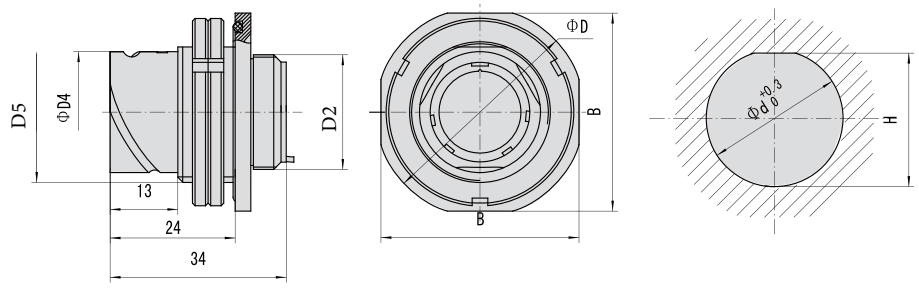
Legend: DPO-, DP0 + ~ №43-, DP43 + are differential pairs • G1 to G53 are grounded .SE1 to SE6 are spare

Double arrow for Na conduction

Dimensions

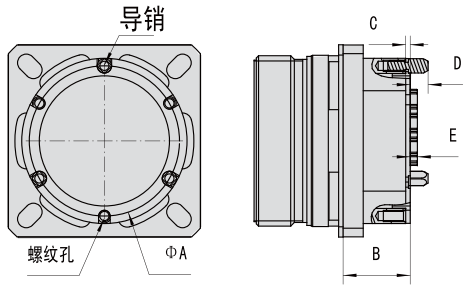


	D1	D2	D3	D4	B	E1	E2	d	e
16	24.0	M16×1	16	17.2	25.0	16.0	19.0	16.5	16.0~19.0
20	29.0	M20×1	20	21.2	28.0	20.0	22.5	20.5	20.0~22.5
27	35.0	M27×1	27	28.2	34.5	25.0	28.0	27.5	25.0~28.0
36	44.0	M36×1	36	37.2	42.0	32.0	35.0	36.5	32.0~35.0



Shell number	B	D	D2	D4	D5	d	H
16	16	16	16	16	16	16	16
20	20	20	20	20	20	20	20
27	27	27	27	27	27	27	27
36	36	36	36	36	36	36	36

[PCB series socket]



Shell number	Types of	A	B	C	D	E
16	High profile		14.5	1	4	1.6
20		18				
27						
36		33.6	15			

Note:

A: The size of the position of the tail guide pin and the thread fixing hole of the connector. Guide pin role is crimp guide, optional; threaded hole role is to fix the connector to the PCB. Corresponding PCB hole size please contact our confirmation.

B: Distance from the front face of the square plate to the mating face of the connector PCB.

C: Insulation pad thickness

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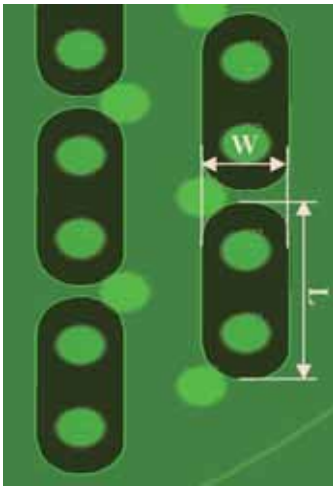
PCB hole size

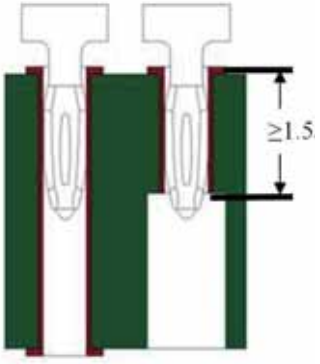
[Through hole size recommended]



project	size	
	mils	mm
Drilling diameter	22.8	0.58
Finished hole diameter	18.9	0.48
Pad diameter	30	0.76
Anti-pad width W	56	1.42
Anti-pad length L	141.7	3.6

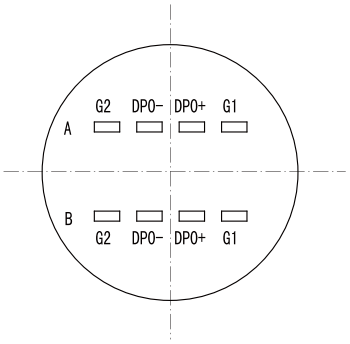
Note: (can be obtained from our company PCB package)

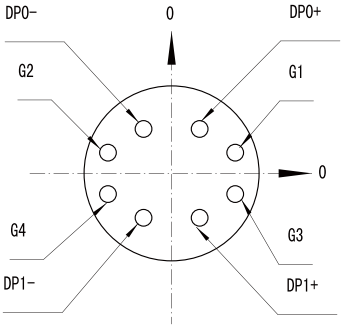
[Back to drilling]



Back-boring is a technology that improves the signal integrity by mechanically removing excess copper from plated through-holes in a printed circuit board. When using back-drilling, care should be taken to ensure reliable contact between the crimp pins and the PCB. The safety length of the through hole reserved after drilling should not be less than 1.5mm, as shown on the right

No. Case PCB Cutout Size] Printed Jack Receptacle View





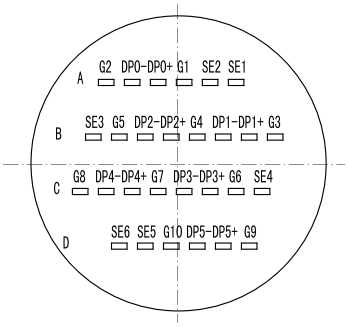
Ground pin

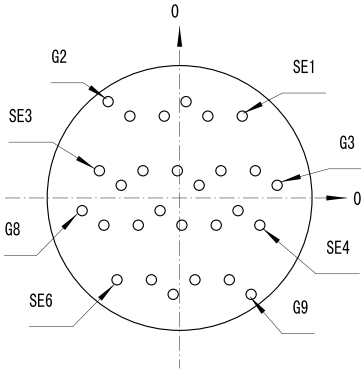
	X	Y
G1	1.9	0.62
G2	−1.91	0.62
G3	1.9	−0.62
G4	−1.91	−0.62

Differential signal pin

	X	Y
DP0+	0.84	1.33
DP0−	−0.84	1.33
DP1+	0.84	−1.33
DP1−	−0.84	−1.33

[No. 13 PC Board Cutout Size] PCB Receptacle Mating View





Ground pin

	X	Y		X	Y		X	Y
G1	0.32	4.71	G2	−3.5	4.71	G3	4.77	0.62
G4	0.96	0.62	G5	−2.86	0.62	G6	2.86	−0.62
G7	−0.96	−0.62	G8	−4.77	−0.62	G9	3.50	−4.71
G10	−0.32	−4.71						

Single-ended signal pin

	X	Y		X	Y		X	Y
SE1	3.06	4	SE2	1.38	4	SE3	−3.92	1.33
SE4	3.92	−1.33	SE5	−1.38	−4	SE6	−3.06	−4

Differential signal pin

	X	Y		X	Y		X	Y
DP0+	−0.75	4	DP1+	3.7	1.33	DP2+	−0.11	1.33
DP0−	−2.43	4	DP1−	2.02	1.33	DP2−	−1.79	1.33
DP3+	1.79	−1.33	DP4+	−2.02	−1.33	DP5+	2.43	−4
DP3−	0.11	−1.33	DP4−	−3.7	−1.33	DP5−	0.75	−4

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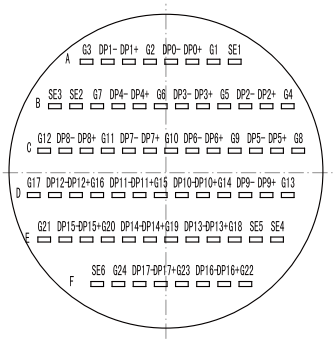
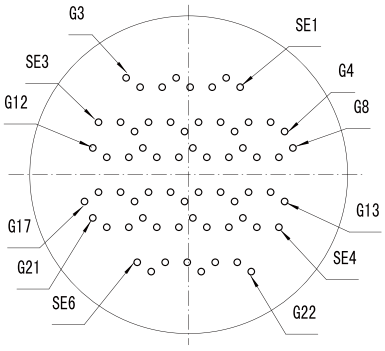
[No. 17 Case PCB Cutout Size] Printed Receptacle Plug-in View





Single-ended signal pin

	X	Y		X	Y		X	Y
SE1	4.55	6.67	SE2	−5.84	4	SE3	−7.52	4
SE4	7.52	−4	SE5	5.84	−4	SE6	−4.55	−6.67

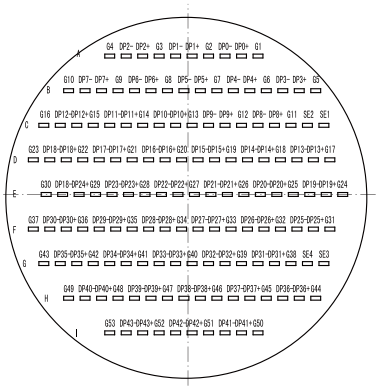
Ground pin

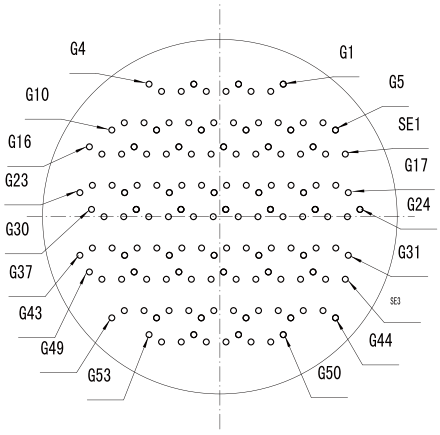
	X	Y		X	Y		X	Y
G1	3.49	7.38	G2	−0.32	7.38	G3	−4.13	7.38
G4	6.66	3.29	G5	2.85	3.29	G6	−0.96	3.29
G7	−4.77	3.29	G8	7.3	2.04	G9	3.49	2.04
G10	−0.32	2.04	G11	−4.13	2.04	G12	−7.94	2.04
G13	7.94	−2.04	G14	4.13	−2.04	G15	0.32	−2.04
G16	−3.49	−2.04	G17	−7.3	−2.04	G18	4.77	−3.29
G19	0.96	−3.29	G20	−2.85	−3.29	G21	−6.66	−3.29
G22	4.13	−7.38	G23	0.32	−7.38	G24	−3.49	−7.38

Differential signal pin

	X	Y		X	Y		X	Y
DP0+	2.42	6.67	DP1+	−1.39	6.67	DP2+	5.59	4
DP0−	0.74	6.67	DP1−	−3.07	6.67	DP2−	3.91	4
DP3+	1.78	4	DP4+	−2.03	4	DP5+	6.23	1.33
DP3−	0.1	4	DP4−	−3.71	4	DP5−	4.55	1.33
DP6+	2.42	1.33	DP7+	−1.39	1.33	DP8+	−5.2	1.33
DP6−	0.74	1.33	DP7−	−3.07	1.33	DP8−	−6.88	1.33
DP9+	6.88	−1.33	DP10+	3.07	−1.33	DP11+	−0.74	−1.33
DP9−	5.2	−1.33	DP10−	1.39	−1.33	DP11−	−2.42	−1.33
DP12+	−4.55	−1.33	DP13+	3.71	−4	DP14+	−0.1	−4
DP12−	−6.23	−1.33	DP13−	2.03	−4	DP14−	−1.78	−4
DP15+	−3.91	−4	DP16+	3.07	−6.67	DP17+	−0.74	−6.67
DP15−	−5.59	−4	DP16−	1.39	−6.67	DP17−	−2.42	−6.67

[Case # 23 Hole Size] PCB Receptacle Mating View





Ground pin coordinates

	X	Y		X	Y		X	Y
G1	5.39	11.38	G19	3.47	1.96	G37	−11.76	−3.38
G2	1.58	11.38	G20	−0.33	1.96	G38	7.93	−4.62
G3	−2.23	11.38	G21	−4.14	1.96	G39	4.13	−4.62
G4	−6.03	11.38	G22	−7.95	1.96	G40	0.32	−4.62
G5	9.85	7.29	G23	−11.76	1.96	G41	−3.49	−4.62
G6	6.04	7.29	G24	11.73	0.71	G42	−7.3	−4.62
G7	2.22	7.29	G25	7.92	0.71	G43	−11.11	−4.62
G8	−1.59	7.29	G26	4.11	0.71	G44	9.85	−8.71
G9	−5.39	7.29	G27	0.30	0.71	G45	6.04	−8.71
G10	−9.2	7.29	G28	−3.51	0.71	G46	2.22	−8.71
G11	7.93	6.04	G29	−7.32	0.71	G47	−1.59	−8.71
G12	4.13	6.04	G30	−11.13	0.71	G48	−5.39	−8.71
G13	0.32	6.04	G31	11.10	−3.38	G49	−9.2	−8.71
G14	−3.49	6.04	G32	7.29	−3.38	G50	5.39	−9.96
G15	−7.3	6.04	G33	3.48	−3.38	G51	1.59	−9.96
G16	−11.11	6.04	G34	−0.33	−3.38	G52	−2.22	−9.96
G17	11.10	1.96	G35	−4.14	−3.38	G53	−6.03	−9.96
G18	7.29	1.96	G36	−7.95	−3.38			

Single-ended signal pin coordinates

	X	Y		X	Y		X	Y
SE1	10.68	5.33	SE2	9	5.33	SE3	10.68	−5.33
SE4	9	−5.33						

Professional and reliable high-end

Differential signal pin coordinates

	X	Y		X	Y		X	Y
DP0+	4.33	10.67	DP1+	0.52	10.67	DP2+	−3.29	10.67
DP0−	2.65	10.67	DP1−	−1.16	10.67	DP2−	−4.97	10.67
DP3+	8.78	8	DP4+	4.97	8	DP5+	1.16	8
DP3−	7.1	8	DP4−	3.29	8	DP5−	−0.52	8
DP6+	−2.65	8	DP7+	−6.46	8	DP8+	6.87	5.33
DP6−	−4.33	8	DP7−	−8.14	8	DP8−	5.19	5.33
DP9+	3.06	5.33	DP10+	−0.75	5.33	DP11+	−4.56	5.33
DP9−	1.38	5.33	DP10−	−2.43	5.33	DP11−	−6.24	5.33
DP12+	−8.37	5.33	DP13+	10.03	2.67	DP14+	6.22	2.67
DP12−	−10.05	5.33	DP13−	8.36	2.67	DP14−	4.55	2.67
DP15+	2.41	2.67	DP16+	−1.40	2.67	DP17+	−5.21	2.67
DP15−	0.74	2.67	DP16−	−3.07	2.67	DP17−	−6.88	2.67
DP18+	−9.02	2.67	DP19+	10.67	−0	DP20+	6.86	−0
DP18−	−10.69	2.67	DP19−	8.99	−0	DP20−	5.18	−0
DP21+	3.05	−0	DP22+	−0.76	−0	DP23+	−4.57	−0
DP21−	1.37	−0	DP22−	−2.44	−0	DP23−	−6.25	−0
DP24+	−8.38	−0	DP25+	10.03	−2.67	DP26+	6.22	−2.67
DP24−	−10.06	−0	DP25−	8.36	−2.67	DP26−	4.54	−2.67
DP27+	2.41	−2.67	DP28+	−1.40	−2.67	DP29+	−5.21	−2.67
DP27−	0.73	−2.67	DP28−	−3.07	−2.67	DP29−	−6.88	−2.67
DP30+	−9.02	−2.67	DP31+	6.87	−5.33	DP32+	3.06	−5.33
DP30−	−10.69	−2.67	DP31−	5.19	−5.33	DP32−	1.38	−5.33
DP33+	−0.75	−5.33	DP34+	−4.56	−5.33	DP35+	−8.37	−5.33
DP33−	−2.43	−5.33	DP34−	−6.24	−5.33	DP35−	−10.05	−5.33
DP36+	8.78	−8	DP37+	4.97	−8	DP38+	1.16	−8
DP36−	7.1	−8	DP37−	3.29	−8	DP38−	−0.52	−8
DP39+	−2.65	−8	DP40+	−6.46	−8	DP41+	4.33	−10.67
DP39−	−4.33	−8	DP40−	−8.14	−8	DP41−	2.65	−10.67
DP42+	0.52	−10.67	DP43+	−3.29	−10.67			
DP42−	−1.16	−10.67	DP43−	−4.97	−10.67			

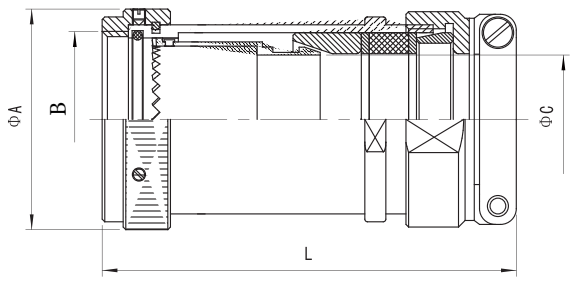
Standard tail attachment (for FTS series and FTP series electrical connectors)

Terminating the cable plugs, sockets on the welding quality requirements are higher, the quality of the solder joints directly affect the differential impedance matching, and the product spacing of only 1.27mm spot, the welding process more difficult. Therefore, it is suggested that the required accessories be supplied to our company along with the requirements of the cable assembly, and we will make the finished cable for you.

1. Non-special circumstances recommended straight structure accessories.
2. Tensile, anti-vibration, anti-impact ability.
3 with electromagnetic compatibility, 360 ° shielding effect can be achieved to meet the special needs.
4. Tightness with electr. the connector is made with a sealing ring
5. Internal sealant sleeve has good sealing performance, effectively waterproof, dust-proof and clamping cables.

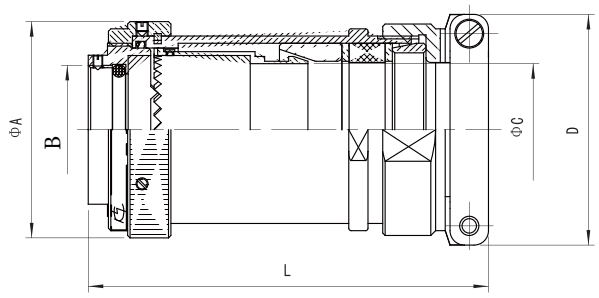
Dimensions

FTS-AP



Model	A	B	C	L
FTS 16AP	26	M16×1	5～7	78
FTS 20AP	30	M20×1	7～11	78
FTS 27AP	36	M27×1	10～18.5	79
FTS 36AP	45	M36×1	17～27.5	80

FTS-AP01



Model	A	B	C	D	L
FTS 16AP01	33	M16×1	7～16	34	87
FTS 20AP01	31	M20×1	7～13	27	84
FTS 27AP01	45	M27×1	17～27.5	48	85
FTS 36AP01	51	M36×1	22～33.5	54	86

Professional and reliable high level

14G High-speed backplane components

Product introduction

- Single channel maximum transfer rate of 14.0625Gbps
- Meet VITA65, VITA42 standard
- Complies with InfiniBand FDR transfer protocol
- Supports VPX standard power supply module
- Support high-speed differential, power, low-frequency signal transmission
- Maximum support 5V power supply 100A, 12V power supply 70A current transfer

Main technical performance

Electrical performance

- Characteristic impedance: Differential Impedance 100 ± 10% Ohm, System - Clock 130 ± 10% Ohm
- Insertion loss: ≥ -25.2dB (7GHz)
- Return loss: ≤-6.7dB (7GHz)
- Single channel maximum transfer rate 14.0625Gbps
- Layers: 26 layers
- Power supply: standard VITA power supply module
- Electrostatic protection: backplane design ESD ground, to provide static protection for the system

Dimensions

- Specifications: 6U
- Size: 262.05X292.6X5.5mm
- Slot spacing: 25.4mm

Environmental performance

- Temperature range: -55 ° C ~ 85 ° C
- Salt fog: 48h
- Flame retardant rating: UL 94 V-0

Model name

Main series		HBP H-Transfer Protocol FDR InfiniBand	-XRZ	-06	10	– 001
Standards compliant	XRZbus					
Backplane specifications	03、06、09……					
Backplane slot number	01、02、03……					
	001、002、003…					

Interrelated structure