

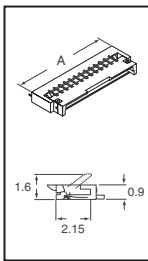


High Density FFC/FPC Connectors (Cont.)

**FH19(C) and FH19S(C) Series Flex Connectors (0.5mm Pitch) Flat Flex Cable and Flexible Printed Circuit**



**Features:** • Conductive traces on the PCB can be designed to run under the connector. The bottom surface of the connector is solid, without any exposure of the contact • Accepts 0.2mm and 0.3mm thick FFC and FPC, easily inserted in the connector • The connector will also terminate successfully with 0.2mm thick Flat Flexible Cable (FFC) **Applications:** • Notebook PC's, PDAs, digital cameras and other compact devices requiring interconnection of the main circuit board with the LCD, plasma display (PDP), HDD or other devices



**Specifications:** • Current Rating: 0.5A DC • Voltage Rating: 50VAC • Operating Temperature: -55°C - 85°C • Operating Humidity Range: Relative humidity 90% maximum (No condensation) • Insulation Resistance: 500MΩ minimum @ 100VDC • Contact Resistance: 100mΩ maximum @ 1mA (including FPC/FFC conductor resistance) • FH19(C) Series: Thickness: 0.2 ± 0.03mm tin or gold plating\* • FH19S(C) Series: Thickness: 0.3 ± 0.03mm tin or gold plating\*

**Materials:** • Insulators: LCP; beige; PPS; FH19(C) Series: dark brown, FH19S(C) Series: black; all UL94V-0 • Contacts: Phosphor bronze, gold flash or tin plating\* • Metal fittings: Phosphor bronze, pure tin reflow plating

\* Note: When FPC is gold plated, connector contacts should also be gold plated

No. of Pos.	Dim. A (mm)	Digi-Key Part No.	Cut Tape Price Each			T&R Pricing†	Hirose Part No.
			1	10	100		
9	6.5	HFN09CT-ND	1.21	1.01	.75	.62	—
13	8.5	HFN13CT-ND	1.32	1.10	.82	.68	—
17	10.5	HFN17CT-ND	1.39	1.16	.86	.71	—
20	12.0	HFN20CT-ND	1.47	1.23	.91	.76	—
30	17.0	HFN30CT-ND	1.74	1.45	1.07	.89	—
13	8.5	HFN113CT-ND†	1.46	1.21	.90	.75	—
17	10.5	HFN117CT-ND†	1.57	1.31	.97	.81	—
20	12.0	HFN120CT-ND†	1.69	1.41	1.04	.87	—
30	17.0	HFN130CT-ND†	2.05	1.71	1.27	1.05	—
12	8.0	HFN212CT-ND	1.27	1.06	.78	.65	—
17	10.5	HFN217CT-ND	1.39	1.16	.86	.71	—
18	11.0	HFN218CT-ND	1.43	1.19	.88	.74	—
20	12.0	HFN220CT-ND	1.47	1.23	.91	.76	—
22	13.0	HFN222CT-ND	1.53	1.28	.95	.79	—
24	14.0	HFN224CT-ND	1.58	1.32	.98	.81	—
26	15.0	HFN226CT-ND	1.64	1.37	1.01	.84	—
27	15.5	HFN227CT-ND	1.68	1.40	1.04	.86	—
12	8.0	HFN312CT-ND†	1.39	1.16	.86	.72	—
17	10.5	HFN317CT-ND†	1.57	1.31	.97	.81	—
18	11.0	HFN318CT-ND†	1.63	1.35	1.00	.83	—
20	12.0	HFN320CT-ND†	1.69	1.41	1.04	.87	—

No. of Pos.	Dim. A (mm)	Digi-Key Part No.	Cut Tape Price Each			T&R Pricing†	Hirose Part No.
			1	10	100		
22	13.0	HFN322CT-ND†	1.76	1.47	1.09	.91	—
24	14.0	HFN324CT-ND†	1.84	1.53	1.14	.94	—
26	15.0	HFN326CT-ND†	1.92	1.60	1.19	.98	—
27	15.5	HFN327CT-ND†	1.97	1.64	1.22	1.01	—
50	27.0	HFN350CT-ND†	2.61	2.17	1.63	1.31	—

Improved Actuator Design — RoHS Compliant

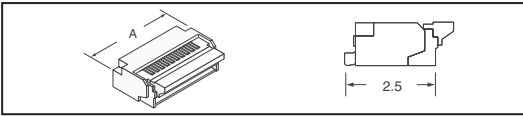
No. of Pos.	Dim. A (mm)	Digi-Key Part No.	Cut Tape Price Each			T&R Pricing†	Hirose Part No.
			1	10	100		
4	4.0	HFN404CT-ND	1.13	.93	.67	.57	379.70/M
6	5.0	HFN406CT-ND	1.21	.99	.72	.61	407.29/M
7	5.5	HFN407CT-ND	1.27	1.04	.76	.64	426.17/M
8	6.0	HFN408CT-ND	1.30	1.06	.77	.65	434.88/M
9	6.5	HFN409CT-ND	1.32	1.08	.79	.67	444.32/M
10	7.0	HFN410CT-ND	1.35	1.11	.81	.68	453.75/M
12	8.0	HFN412CT-ND	1.23	1.02	.76	.63	471.90/M
13	8.5	HFN413CT-ND	1.28	1.06	.79	.66	490.05/M
15	9.5	HFN415CT-ND	1.32	1.10	.82	.68	508.20/M
17	10.5	HFN417CT-ND	1.37	1.14	.85	.70	526.35/M
20	12.0	HFN420CT-ND	1.47	1.22	.91	.75	562.65/M
21	12.5	HFN421CT-ND	1.51	1.26	.93	.78	580.80/M
24	14.0	HFN424CT-ND	1.60	1.34	.99	.82	617.10/M
27	15.5	HFN427CT-ND	1.70	1.42	1.05	.87	653.40/M
30	17.0	HFN430CT-ND	1.79	1.49	1.11	.92	689.70/M
4	4.0	HFN504CT-ND	1.13	.93	.67	.57	379.70/M
5	4.5	HFN505CT-ND	1.18	.97	.71	.60	397.85/M
6	5.0	HFN506CT-ND	1.21	.99	.72	.61	407.29/M
8	6.0	HFN508CT-ND	1.30	1.06	.77	.65	434.88/M
9	6.5	HFN509CT-ND	1.32	1.08	.79	.67	444.32/M
10	7.0	HFN510CT-ND	1.35	1.11	.81	.68	453.75/M
12	8.0	HFN512CT-ND	1.23	1.02	.76	.63	471.90/M
13	8.5	HFN513CT-ND	1.28	1.06	.79	.66	490.05/M
14	9.0	HFN514CT-ND	1.28	1.06	.79	.66	490.05/M
15	9.5	HFN515CT-ND	1.32	1.10	.82	.68	508.20/M
16	10.0	HFN516CT-ND	1.34	1.12	.83	.69	517.64/M
17	10.5	HFN517CT-ND	1.37	1.14	.85	.70	526.35/M
18	11.0	HFN518CT-ND	1.42	1.18	.88	.73	544.50/M
20	12.0	HFN520CT-ND	1.47	1.22	.91	.75	562.65/M
21	12.5	HFN521CT-ND	1.51	1.26	.93	.78	580.80/M
22	13.0	HFN522CT-ND	1.53	1.28	.95	.79	590.24/M
24	14.0	HFN524CT-ND	1.60	1.34	.99	.82	617.10/M
26	15.0	HFN526CT-ND	1.68	1.40	1.04	.86	644.69/M
27	15.5	HFN527CT-ND	1.70	1.42	1.05	.87	653.40/M
28	16.0	HFN528CT-ND	1.72	1.44	1.06	.88	662.84/M
30	17.0	HFN530CT-ND	1.79	1.49	1.11	.92	689.70/M
32	18.0	HFN532CT-ND	1.84	1.53	1.14	.95	707.85/M
40	22.0	HFN540CT-ND	2.24	1.87	1.36	1.15	862.49/M
45	24.5	HFN545CT-ND	2.15	1.78	1.34	1.08	825.65/M
50	27.0	HFN590CT-ND	2.27	1.89	1.42	1.14	980.10/M

† Gold Plating ♦ RoHS Compliant ‡ For Tape and Reel part number, change CT-ND to TR-ND.

0.5mm FFC/FPC Connectors FH33 Series — Single-sided Lead, Bottom Contact



**Specifications:** • Current Rating: 0.5A maximum • PCB Mount Type: SMT • Contact Mating Area Plating: Gold • Terminal Pitch: 0.5mm • Contact Spacing: 0.5mm



No. of Pos.	Dim. A (mm)	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel Pricing	Hirose Part No.
			1	10	100			
6	5.0	HFS06CT-ND	1.13	.93	.67	.57	HFS06TR-ND	379.70/M
9	6.5	HFS09CT-ND	1.18	.97	.71	.60	HFS09TR-ND	397.85/M
10	7.0	HFS10CT-ND	1.21	.99	.72	.61	HFS10TR-ND	407.29/M
12	8.0	HFS12CT-ND	1.27	1.04	.76	.64	HFS12TR-ND	426.17/M
14	9.0	HFS14CT-ND	1.30	1.06	.77	.65	HFS14TR-ND	434.88/M
26	15.0	HFS26CT-ND	1.32	1.10	.82	.68	HFS26TR-ND	508.20/M
28	16.0	HFS28CT-ND	1.37	1.14	.85	.70	HFS28TR-ND	526.35/M

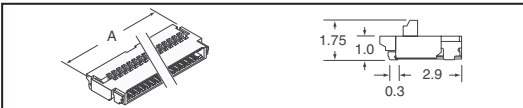
0.5mm FFC/FPC Connectors FH34 Series — Top Contact Version of FH19S(C)



**Features:** • Low profile and space saving 1.0mm of height and 3.8mm of mounting depth top contact connectors • Increased FPC/FFC retention force • Unique back flip ZIF structure enables user-friendly and reliable connection • Smooth FPC/FFC insertion with tapers at housing opening • Smooth FPC/FFC insertion with actuator delivered in open position

**Applications:** • Mobile phones • Digital cameras • Digital video cameras • Portable terminals • DVD • CD-RW • Notebook PC • Game machines

**Specifications:** • Current Rating: 0.5A maximum • PCB Mount Type: SMT • Contact Mating Area Plating: Gold • Terminal Pitch: 0.5mm • Contact Spacing: 0.5mm • Operating Temperature: -55°C - 85°C



No. of Pos.	Dim. A (mm)	Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel Pricing	Hirose Part No.
			1	10	100			
4	4.0	HFT04CT-ND	2.18	1.82	1.35	1.12	HFT04TR-ND	855.23/M
8	6.0	HFT08CT-ND	2.13	1.76	1.32	1.07	HFT08TR-ND	935.09/M
14	9.0	HFT14CT-ND	1.33	1.11	.82	.68	HFT14TR-ND	521.27/M
30	17.0	HFT30CT-ND	3.06	2.53	1.90	1.53	HFT30TR-ND	1342.38/M

0.5mm and 1.0mm FFC/FPC Connectors FH12, FH12A, FH12F and FH12S Series —



“Flip-Lock” SMT/ZIF Type Flexible Printed Circuit Board Connectors

The FH12 Series of miniature connectors for FPC/FFC use brings form to the newly developed “flip-lock” concept and can be used with Surface Mount Technology (SMT) to eliminate the problems of the contemporary side-lock system. These connectors have a contact spacing of 0.5mm, are suited to high density mounting, and are based on a single-action Zero Insertion Force (ZIF) structure for easy connections. Types with top or bottom contacts, and vertical mounting are available to suit your applications.

**Materials/Finish:** • Insulation: Polyamide Resin, beige; PPS Resin, dark brown (UL94V-0) • Contacts: Phosphor Bronze, solder plating

**Electrical:** • Rated Current: 0.4A • Insulation Resistance: 500MΩ or greater at 100VDC • Withstanding Voltage: 150VAC for one minute • Contact Resistance: 50mΩ or less (Note: When all conductors are to continuously carry the rated current, set the current to 70% of the rated current value.)

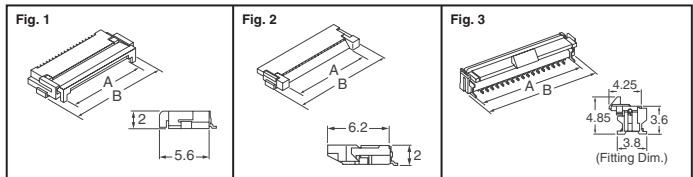


Fig.	No. of Pos.	Dimensions (mm)		Digi-Key Part No.	Cut Tape Price Each			Digi-Key Part No.	Tape and Reel Pricing		Hirose Part No.	
		A	B		25	100	250		Qty.	Price		
<b>.5mm Horizontal Mount — Bottom Contact Type</b>												
1	11	6.07	9.6	HFJ11CT-ND	1.34	1.03	.83	.69	HFJ11TR-ND	2,000	524.17/M	FH12-11S-0.5SH
	12	6.57	10.1	HFJ12CT-ND	1.34	1.03	.83	.69	HFJ12TR-ND	2,000	524.17/M	FH12-12S-0.5SH
	13	7.07	10.6	HFJ13CT-ND	1.37	1.06	.85	.71	—	—	—	FH12-13S-0.5SH
	14	7.57	11.1	HFJ14CT-ND	1.40	1.08	.87	.72	HFJ14TR-ND	2,000	551.04/M	FH12-14S-0.5SH
	15	8.07	11.6	HFJ15CT-ND	1.44	1.11	.89	.74	—	—	—	FH12-15S-0.5SH

\* Note: The 1.0mm version of FH12 is constructed by loading every other contact into the 0.5mm housing

(Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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