



Automotive Connectors

Advanced technology for next
generation vehicle challenges



HRS HIROSE
ELECTRIC
U.S.A.

CONNECTING THE FUTURE

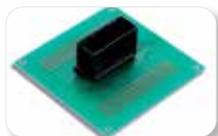
CONNECTING THE FUTURE

AUTOMOTIVE APPLICATIONS

Instrument Cluster • Infotainment • Antenna • Battery/Inverter • ADAS • LiDAR • Lighting



Infotainment & Cluster



GT25H2 Series



GT43 Series



FH41 Series

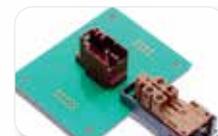


FH52K Series



FH63S/FH67 Series

Antenna



GT36 Series



GT21 Series

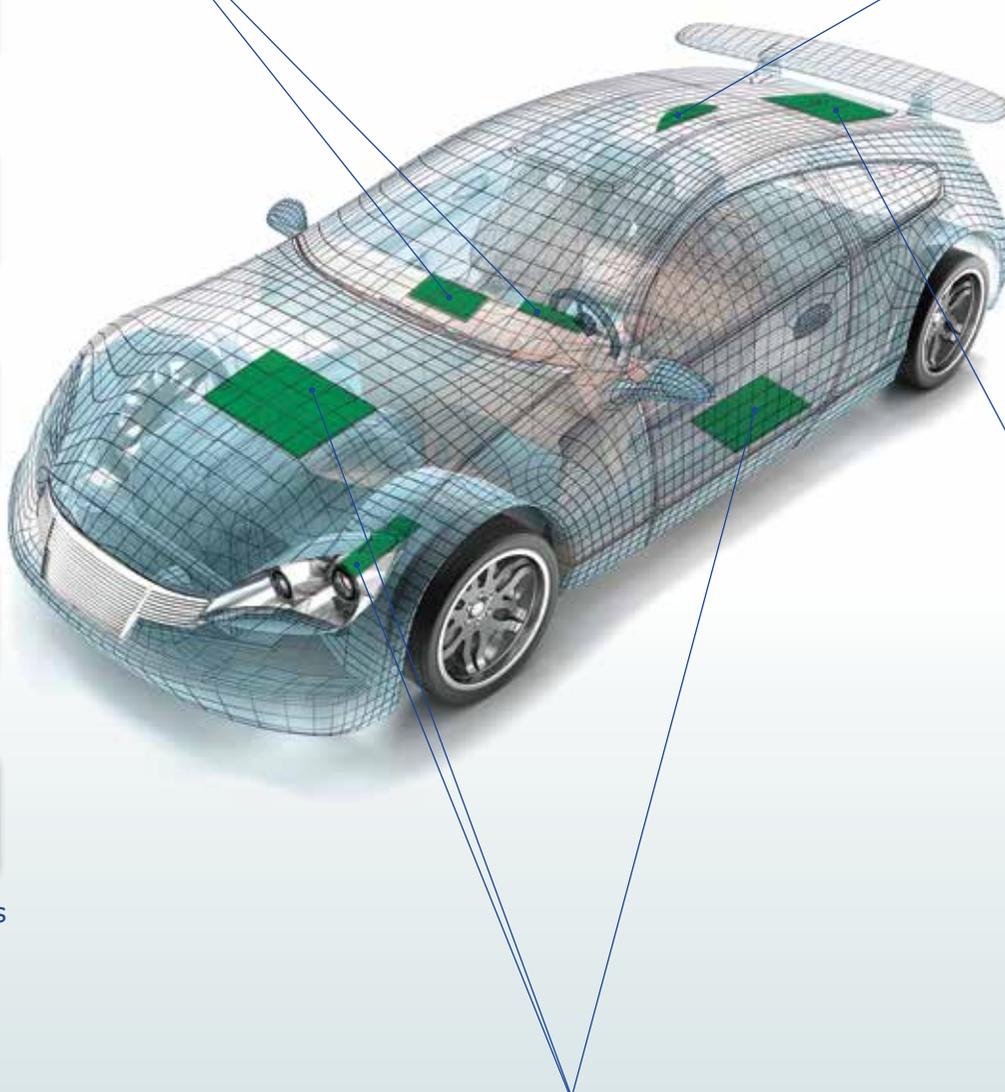
Autonomous Driving



FX23 Series



DF40T Series



Powertrain, Battery Management, Lighting



ZE05 Series



ZE064W Series



HVH-280 Series



FX26 Series

A WORLD LEADER INTERCONNECT TECHNOLOGY

Hirose provides innovative, cutting-edge solutions for your interconnect requirements. We specialize in the design, development & manufacturing of high-performance interconnect solutions supporting the automotive, consumer, medical, and industrial markets. With over 80 years experience, Hirose has established itself as a growing technology leader.

Positioned on the forefront of interconnect technology, Hirose works closely with its customers to develop innovations in miniaturization, high speed data transmission, signal integrity and robust mechanical design.

Hirose is a growing \$1.2 billion company, with over 4,500 employees worldwide. Top-tier engineers design high-quality, precision connectors. Customer support is provided through all stages of development.

HIROSE AUTOMOTIVE

Hirose is a key international supplier in the automotive industry manufacturing rugged, reliable connectors to meet the needs of diverse automotive requirements. Our world-class engineering capabilities combined with cost-effective operations enables us to provide our customers with high-value automotive interconnect solutions and services.

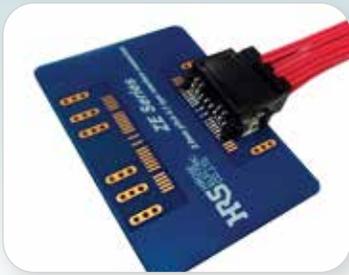
By partnering with customers early in the design stage, we provide optimum products, expertise & world-class solutions:

- ▶ Advanced Products
- ▶ High Performance
- ▶ Quality Management – continuous monitoring and evaluations within our manufacturing process

APPLICATIONS

Your products demand quality, and Hirose connectors provide the manufacturing precision, durability, and design intelligence that allows you to increase efficiency during installation, decrease costs, and improve your overall operations.

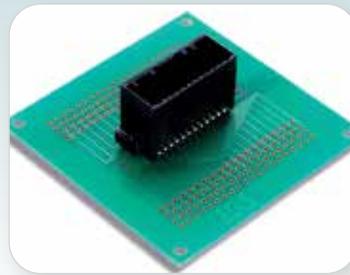
With expertise in infotainment, ECU, and lighting, Hirose provides wide selection of connectors for navigation systems, LED, HID, instrument clusters, antennas, and inverter/ battery management. Continually on the forefront of emerging technologies, Hirose's connectors are designed for use in contemporary products such as hybrid/electric vehicles.



ZE05 Series

- Oper. Temp. -40C to +125C
- 20-22 AWG
- 5A(Mono-pole) / 2A(Full pins used)
- 250V AC
- 30 Durability (mating cycles)
- Contact positions: 2, 4, 8, 12 (16, 20, 24)

High vibration resistance. 0.5mm terminal, 2mm pitch.



GT25H2 Series

- Oper. Temp. -40C to +105C
- 20-22 and 24-28 AWG
- 3A max rated current
- 250V AC
- 30 Durability (mating cycles)
- Contact positions: 8, 12, 16, 20, 24, 32, 40

SMT, Compatible with other manufacturers' products



ZE064W Series

- Oper. Temp. -40C to +125C
- 20-22 AWG
- 5A(Mono-pole)/2A(Full pins used)
- 250V AC
- 30 Durability (mating cycles)
- Contact positions : 14, 24

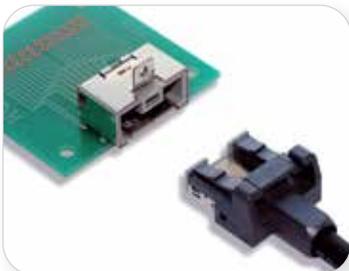
Small-sized, 0.64mm terminal, 2.2mm pitch, High vibration resistance, Heat Resistance, Waterproof (Supports IP67/IP69K)



HVH-280 Series

- Oper. Temp. -40C to +120C
- 12-14 AWG
- 30A max rated current
- 600V AC
- 30 Durability (mating cycles)
- Contact positions: 2

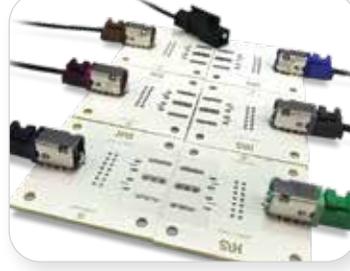
Clear "click feeling" to prevent incomplete insertion. Retainer on harness side to secure terminal insertion (TPA, Secondary lock) WaterProof & Non WaterProof available



GT32 Series

- Oper. Temp. -40C to +105C
- 24-28 AWG
- 1A max rated current
- 30V AC
- 30 Durability (mating cycles)
- Contact positions: 4, 10, 19

Pin-in-paste reflow method, 2-point contact, Panel mounting screw optional



GT43 Series

- Oper. Temp. -40C to +105C
- 1A max rated current
- 30V AC
- 30 Durability (mating cycles)
- Contact position : 1

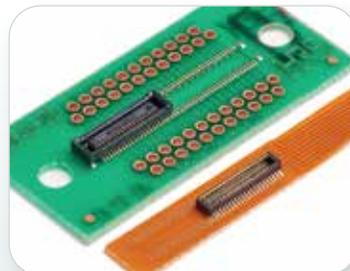
Small-sized, space-saving design, Low Noise, 6 keying varieties High frequency transmission for video: 3GHz



FH63S Series

- Oper. Temp. -55C to +125C
- 2.8mm Height
- 0.5A max rated current
- 50V AC
- 10 Durability (mating cycles)
- Contact positions: 10, 30, 40

Bottom contact, Satisfies severe automotive requirements, One action lock, Supports USB 3.0, Embedded Display Port 1.3, HDMI 1.4a, V-by-One HS, Halogen-free (IEC61249-2-21)



DF40T Series

- Oper. Temp. -55C to +125C
- 0.3A max rated current
- 30V AC
- 30 Durability (mating cycles)
- 1.5, 2.0, 2.5, 3.0, 3.5, 4.0 Height
- Contact positions: 10, 20, 30, 40

Supports USB3.1 Gen 2, 10Gbps transmission



FX23(L) Series

- Pitch: 0.5mm
- 0.5A (signal), 3A (power4 pin) max rated current
- 50V AC/ 200 V DC
- Contact positions: 20/40/60/80/100/120 for signal + 4 for power source
- Stacking height (mm) 8, 10, 12, 15, 20, 25, 30

SMT, Floating structure stacking and vertical versions, 8 Gbps High Speed transmission



FX26 Series

- Oper. Temp. -40C to +140C
- 0.5A max rated current
- 125V AC/DC
- 12, 15, 17, 18, 20, 23, 25 Height
- Contact positions: 20, 30, 40, 50, 60

Floating Range $\pm 0.7\text{mm}$ (X and Y), Effective mating length $\pm 0.75\text{mm}$ (Z), Vibration Absorption Design, Heat Resistance

HIROSE USA, AUTOMOTIVE CONNECTORS, QUICK REFERENCE SHEET

*Reference only, review each of the part drawings for most accurate detailed information.

Series	Type	Contacts (Pins)	Pitch (mm)	Height (mm)	Temp Range (°C)	Current (A/pin)	Voltage (V AC)	Speed (Gbps)	Features
Board to Wire & Wire to Wire Connectors									
DF51	B to W, W to W	2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	2	4.5 (DF51-2P-2DS(01))	-55 to 105	2	250	-	Side lock (polarized), Accepts resin sealing (vertical only)
GT8E, GT8EU	B to W, W to W	2-8, 10, 12, 16, 20, 24	2	6.9 (GT8EA-2P-2H)	-40 to 105	1	250	-	Wide variation, Positive Lock Internal connector
GT25H2	B to W, W to W	8, 12, 20, 24, 32, 40	2.2	13.0 (GT25H2-8DP-2.2H)	-40 to 105	3	250	-	Wide variation
ZE05	B to W	2, 4, 8, 12, 16, 20, 24	2	8.34 (ZE05-2P-2H)	-40 to 125	2	250	-	0.5 terminal, Severe Vibration Resistance
ZE064W	W to W	14, 24	2.2	25.5	-40 to 125	2	250	-	Water proof, Severe vibration resistance
HVH-280 (Water Proof)	W to W	2	9.5	25.74	-40 to 120	30	600	-	Water proof, CPA, HVIL
Coax Connectors									
GT5	B to W, W to W	1, 2, 4	n/a	13.9 (GT5-1P-DS)	-40 to 105	1	250	2GHz	One step crimp, Wide Variation GPS, DTV, AM/FM radio etc
GT13	B to W, W to W	1, 2, 4	n/a	12.35 (GT13S-1PP-DS)	-40 to 105	1	125	1GHz	One step crimp, Wide Variation AM/FM etc
GT16, GT16C, GT16G	B to W, W to W	1	n/a	10.0 (GT16D-1P-H)	-30 to 105	1	250	3, 6GHz	One step crimp, 3GHz, 6GHz Satellite radio, Bluetooth, DSRC, Wi-Fi etc
GT21	B to W, W to W	1, 2, 3, 4	n/a	10.0 (GT21-1P-DS)	-40 to 105	1	250	2.5GHz	One step crimp, Wide Variation GPS, DTV, AM/FM radio, etc
GT36(A, S)	B to W	1, 4	6	16.3	-40 to 105	1	50	2.5, 3, 6GHz	Compact design GPS, DTV, TEL, Bluetooth, DSRC, Wi-Fi, etc
GT43	B to W, W to W	1	n/a	10.6	-40 to 105	1	50	3GHz	For video transmission, One step crimp, noise prevention
U.FL	B to W	1	n/a	1.9	-40 to 85	n/a	n/a	6GHz	Low profile, Space saving, For internal wiring
High Speed Connectors									
GT17(V)	B to W, W to W	6, 8, 10	2	15.7 (GT17V-6DP-DS(70))	-40 to 105	3	250	1	USB2.0, IEEE1394, LVDS, GVIF
GT17H, GT17HN	B to W, W to W	4, 16	2	7.2 (GT17H-4P-2H)	-40 to 105	1	250	1	Low profile, Wide variation, USB2.0
GT32(F)	B to W, W to W	4, 10, 19	0.75, 1.5	11.2 (GT32-4DP-1.5H)	-40 to 105	1	30	1-5	USB3.2 Gen1 (10pin), HDMI1.4 (19pin), Pin-in-paste reflow
FPC Connectors									
FH28K	FPC	10, 15, 20, 28, 30, 40, 50, 55, 60, 64, 68, 80	0.5	2.55	-40 to 125	0.5	50	-	Robust
FH40	FPC	10, 20, 24, 30, 40, 45, 50, 60, 64, 80	0.5	5.8	-40 to 105	0.5	50	-	Vertical
FH41	FPC	15, 20, 28, 30, 31, 40, 50, 60, 68	0.5	2.5	-40 to 105	0.5	50	4	Shielded, Compatible with FH48, V-by-One HS, Horizontal
FH48	FPC	20, 21, 30, 31, 40, 50, 68	0.5	6.68	-40 to 105	0.5	50	4	Shielded, Compatible with FH41, V-by-One HS, Vertical
FH52K	FPC	6, 8, 10, 12, 15, 18, 20, 22, 24, 25, 26, 30, 32, 34, 40, 45, 50, 68	0.5	2	-40 to 125	0.5	50	-	Long metal fittings
FH55	FPC	10, 22, 31, 40	0.4, 0.5	1.5	-55 to 105	0.5 (0.5mm pitch) or 0.4 (0.4mm pitch)	50 (0.5mm pitch) or 40 (0.4mm pitch)	10	High speed, Impedance matched, USB3.2 Gen2
FH63S	FPC	30	0.5	2.8	-55 to 125	0.5	50	5.4	One action lock, Bottom contact, 2-point contact, Horizontal, eDP1.3, HDMI 1.4a, USB 3.0 Gen1, V-by-One HS
FH65	FPC	8, 10, 34	0.5	1.2	-40 to 125	0.5	50	-	Space Saving, Low Profile
FH67	FPC	30	0.5	5.2	-55 to 125	0.5	50	5.4	One action lock, 2-point contact, Vertical
FH75	FPC	40	0.5	2	-40 to 125	0.5	50	1.5	2-point contact
Board to Board Connectors									
DF12N	B to B	10, 14, 20, 30, 32, 36, 40, 50, 60, 80	0.5	3, 3.5, 4, 5	-45 to 125	0.3	50	5	Wide variations of stacking height
DF17	B to B	20, 26, 30, 40, 50, 60, 70, 80	0.5	4, 5, 5.5, 6, 6.5, 7, 8	-35 to 85	0.3	50	-	Wide variations of stacking height, robust
DF40T	B to B	10, 34, 40, 50	0.4	1.5, 2, 2.5, 3, 3.5, 4	-55 to 125	0.3	30	16	PCI Express 4.0
DF40GT	B to B	10	0.4	1.5	-55 to 125	0.3	30	16	PCI Express 4.0, Shielded
DF40GL	B to B	44	0.4	1.5	-55 to 105	0.35	30	16	Positive lock, Shielded, Shock resistant
FX23(L)	B to B (Floating)	20, 40, 60, 80, 100, 120	0.5	8, 10, 12, 15, 20, 25, 30	-55 to 105	0.5 (Signal) 3 (Power)	50	8	Floating range ±0.6 for XY, High speed
FX26	B to B (Floating)	20, 30, 40, 50, 60	1	12, 15, 17, 18, 20, 23, 25	-55 to 140	0.5	125	-	Floating Range ±0.7 for XY, Vibration Absorption Design
USB Type-C									
CX	B to W	16, 24	0.5	3.14-3.66	-30 to 105	1.25	20	10	USB Type C, Wide Variety

For additional information please go to <https://www.hirose.com/product/en/products/industry/automotive/>
Specifications herein are subject to change without notice. Contact Hirose for latest specifications, drawings, or availabilities.

CONNECTING THE FUTURE

AUTOMOTIVE INNOVATION



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