

High heat resistant, compact and low SMT type connector for automation

- Increase in controlling ECUs and PCB connectors due to sophisticated systems with spreading autonomous driving

- 1 Compact / Low height
- 2 High heat resistance
- 3 High vibration resistance

- Application: Meter, Lamp, Center information display etc
- Applicable Specification: JASO D616 etc
- Applicable wire size: 0.13 - 0.5mm²
- Lineup: Unsealed, Pins 8/12/16/20/24, Wire-to-PCB

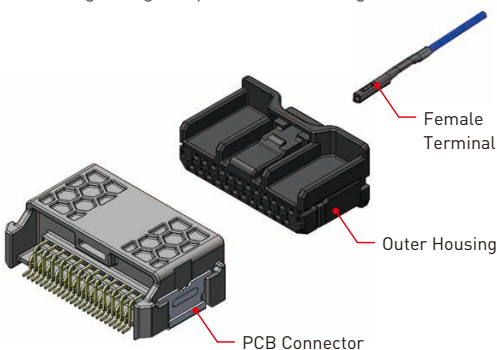
1 Compact / Low height

The pitch between pins is 2.0mm wide and 2.4mm long by using 0.50 terminal and it makes compact and low connector (The pitch wide between pins is available heat resistant wires)

2 High heat resistance

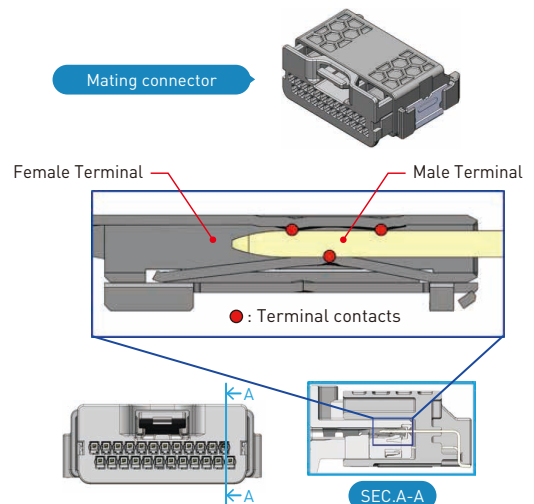
Available at environment temperature 125degC

*Including rising temperature for energization



3 High vibration resistance

3 point contact structure at the terminal contacts suppresses tilt during vibration and improves vibration resistance



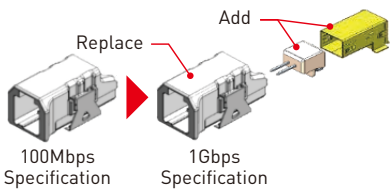
- Standard cavity connector for vehicle communication (ISO8092-6 ANNEX-C)
- The connector with high reliability required for high speed communication and safety systems

- Acceleration of large communication capacity by spreading autonomous driving and connected cars

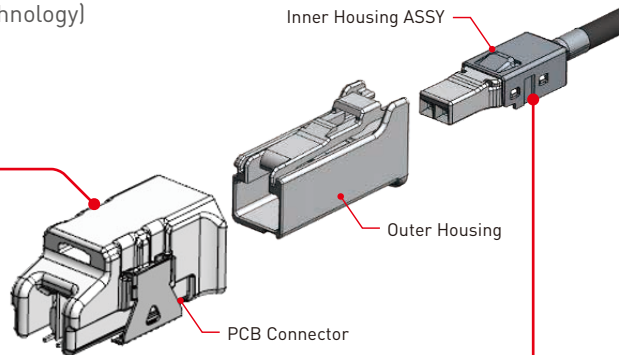
- 1 Support 100Mbps / 1Gbps
- 2 The structure to be easy to assemble for wire harness manufacturer
- 3 Ensure margin even considering vehicle environment / manufacturing variations

- Characteristic impedance: 100Ω
- Operating temperature range: Unsealed -40 to 85degC, Sealed -40 to 105degC
- Application: Ethernet
- OABR 100 BASE-T1 Comply (100Mbps) / OABR 1000 BASE-T1 Comply (1Gbps)
- Application wire: J-UTP (100Mbps) / STP (1Gbps)
- Lineup: Unsealed / Sealed, Wire-to-Wire, Wire-to-PCB
- Mounting PCB: SMT (Surface Mount Technology)
- Cable retention force: Over 100N

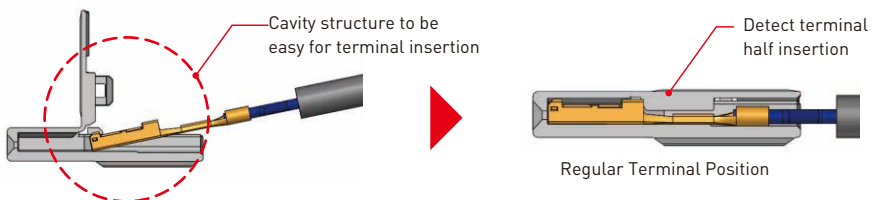
1 Support 100Mbps / 1Gbps



It is available for 1Gbps with adding shielded parts for 100Mbps



2 The structure to be easy to assemble for wire harness manufacturer



- Standard cavity connector for vehicle communication & camera systems (USCAR 888-U-00X-1-Z02)
- High reliability connector for wide frequency

- Acceleration of V2V, V2I and V2X communication for emergency call (eCall etc.) and driving assistance

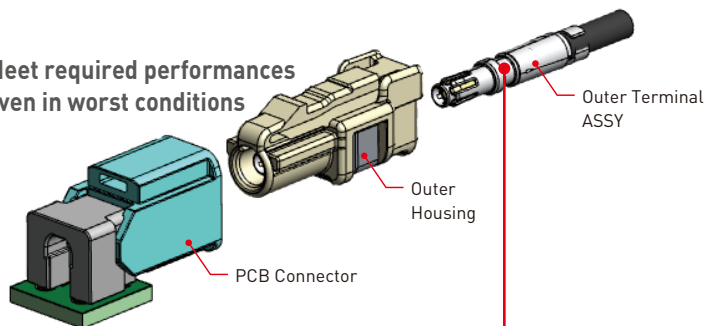
- 1 Ensure margin even considering vehicle environment / manufacturing variations
- 2 The structure to be easy to assemble for wire harness manufacturer
- 3 Support Max. 6GHz broadband

- Characteristic impedance: 50Ω
- Operating temperature range: -40 to 85degC
- Comply with USCAR49
- Application wire: 1.5D (RG174)
- Lineup: Unsealed, Wire-to-Wire, Wire-to-PCB
- Mounting PCB: Through Hole
- Cable retention force: Over 100N

1 Ensure margin even considering vehicle environment / manufacturing variations

- Heat, water, bending, bundle wire harness
- Terminal processing variations
- Connector dimension variations
- Material variations (property)

Meet required performances even in worst conditions



2 The structure to be easy to assemble for wire harness manufacturer






Set inner terminal and guide sleeve



It is easy to aim the open barrel due to big insertion point.

High speed communication cable for various automotive communication

- Accelerated automotive communication with high capacity due to growth of autonomous driving and connected cars
- Support automotive communication from 100Mbps to over 10Gbps
- Ensure vehicle installed quality and enable perfect proposals of installing areas
- Terminal processing by automatic machine due to interchangeable standard port

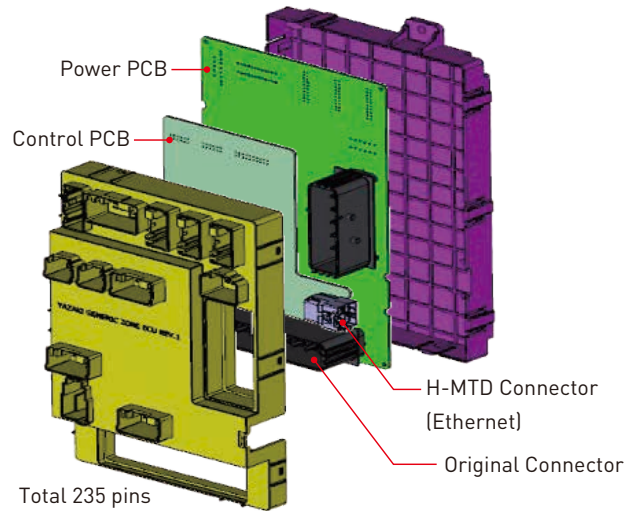
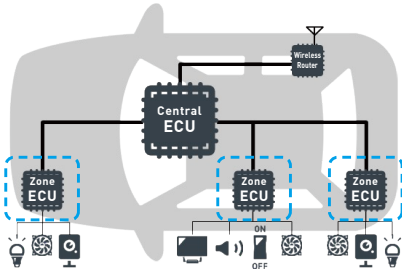
	Conductor		Insulation	Twist	Shield		Sheath	Main Performance
	Size	Outer Diameter [mm]	Outer Diameter [mm]	Outer Diameter [mm]	Composition	Braid Density [%]	Outer Diameter [mm]	
J-UTP 	0.13	0.48	0.9	1.8	-	-	2.5	Basic Performance: ISO19642 (Class B) Transmission Quality: OABR 100BASE-T1
STP 	0.13	0.48	1.2	2.4	AL Foil Braid	Over 90	3.8	Basic Performance: ISO19642 (Class B) Transmission Quality: -OABR 1000BASE-T1 -OABR Multi-giga BASE-T1
Coax 	0.17	0.54	1.6	-	AL Foil Braid	Over 90	3	Basic Performance: ISO19642 (Class B) Transmission Quality: Max. frequency 6GHz

*Please contact us about other specifications.

- Power distribution
- Proxy in/output
- Communication Gateway
- Ethernet communication

- Develop Zone ECU for new E/E architecture (integrated control architecture)

- Power distribution with full semiconductors
- High speed communication (Ethernet)
- Proposal of original connector



Features

Area Power Supply	Proxy Input/Output (I/O)
Body System Control	Reprogramming
Ethernet Communication	Communication Gateway (Ethernet-CAN)
Ethernet Communication Switching HUB	Cyber Security
CAN/CANFD Communication	Power Control (IG, ACC)
LIN Communication	Semiconductor Fuse Control

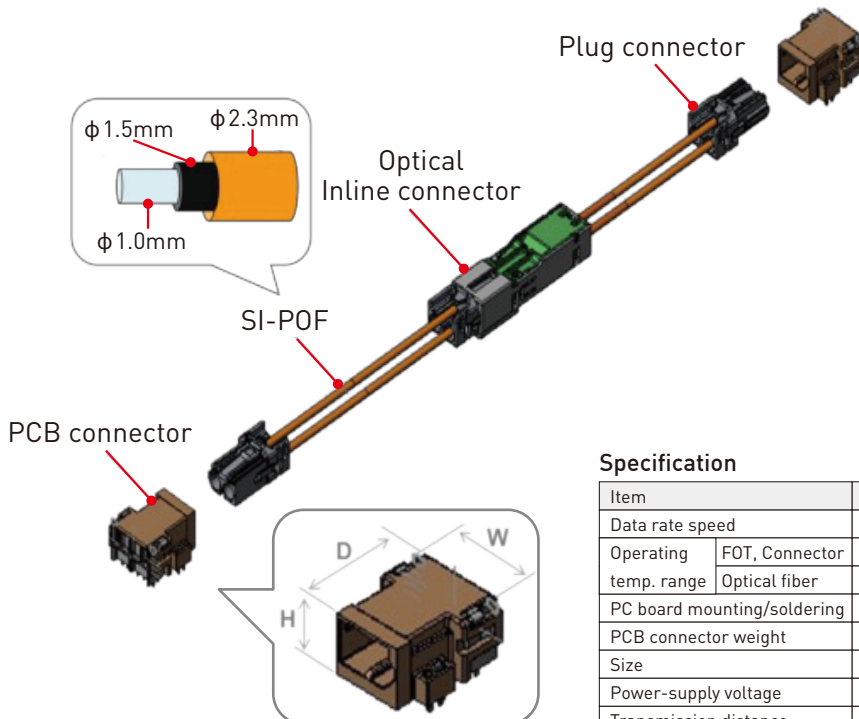
Specification

Operating Temperature	-40degC to 85degC
Operating Voltage	6V-16V
Input	72ch
Output High Side / Half Bridge	64ch
Output Low Side	8ch
Ethernet 1G	1ch
Ethernet 100M	4ch
CAN, CANFD	8ch
LIN	10ch

1Gbps Ethernet Communication

- Support automotive high speed communication (Transfer high accuracy images)
- Anti-noise needs associated with vehicle electrification
- Noise-free and weight reduction by using optical fibers (1/4 mass compared to shielded cables)
- Ensure reliability in automotive environment
- 70% smaller than current MOST connectors (25Mbps)

USA PACE Award Winner in 2022

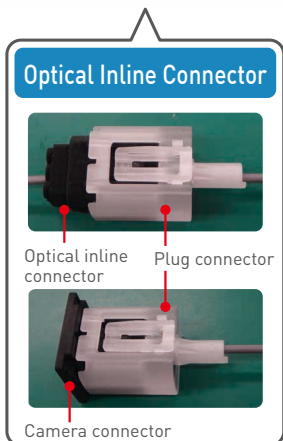
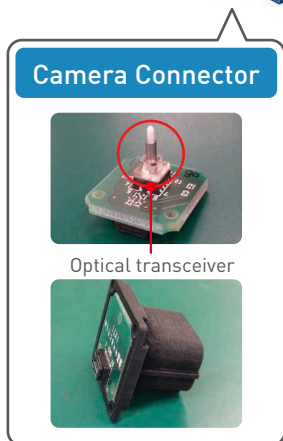
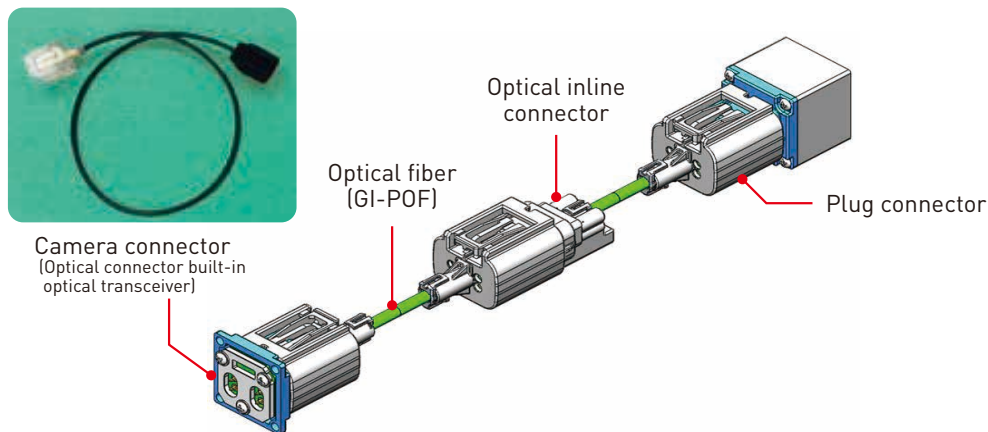


Specification

Item	Specification	
Data rate speed	1G bps	
Operating temp. range	FOT, Connector	-40 to 105degC
	Optical fiber	-40 to 95degC
PC board mounting/soldering	Through-hole flow/dip	
PCB connector weight	4.7 g	
Size	20.1(W)x22.8(D)×12.1(H) mm	
Power-supply voltage	3.3 V +/-5%	
Transmission distance	Up to 40m ex. 15m with 4in-line connectors /40m without in-line connectors	
SI- POF min. bend radius	R 10 mm	

10Gbps Ethernet Communication

- Support automotive high speed communication (Transfer high accuracy images)
 - Anti-noise needs associated with vehicle electrification
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- Noise-free and weight reduction by using optical fibers (1/4 mass compared to shielded cables)
 - Comply with IEEE802.3dh standard (Plan)
 - 10Gbps high speed communication by using GI-POF



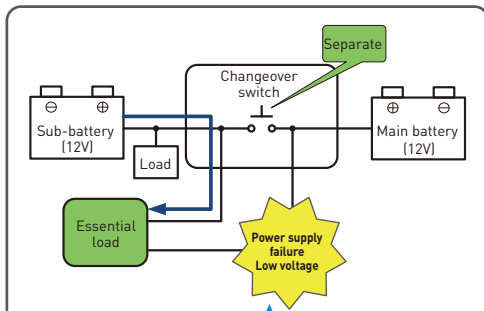
Specification

Item	Specification	
Function / Feature	10GbEthernet	
Data rate speed	10Gbps	
Optical source	VCSEL	
Optical fiber	GI(Graded Index)-POF ($\phi 55\mu\text{m}$)	
Operating temp. range	FOT, Connector	-40 to 105degC
	Optical fiber	-40 to 105degC
Modulation system	Binary	
PC board mounting/soldering	Reflow (Pb free)	
Power-supply voltage	3.3V $\pm 5\%$	
Transmission distance/Relay number	15m/3pcs., 40m/none	

Distribute 12V stable voltage and power

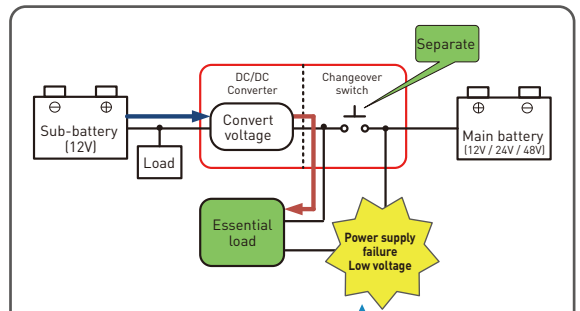
Supply stable voltage for load during a power supply failure

- According to increase load of electrification and autonomous driving, backup power is required to supply large power and stable voltage
- Output various load voltage
- Stable output voltage during low voltage of sub battery
- Reduce engineering man-hour by standardization of Hardware



Only Changeover Switch

The sub-battery supplies power to the essential load during a power supply failure

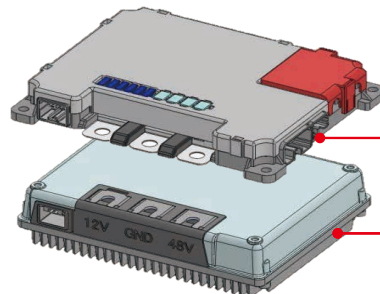


DC/DC Converter + Changeover Switch

- Output various load voltage
- Stable output voltage during low voltage of sub-battery

Integration Impact

- Quick reaction and stable voltage during a power failure
- Reduce harnesses
- Reduce ASSY man-hour
- Reduce size

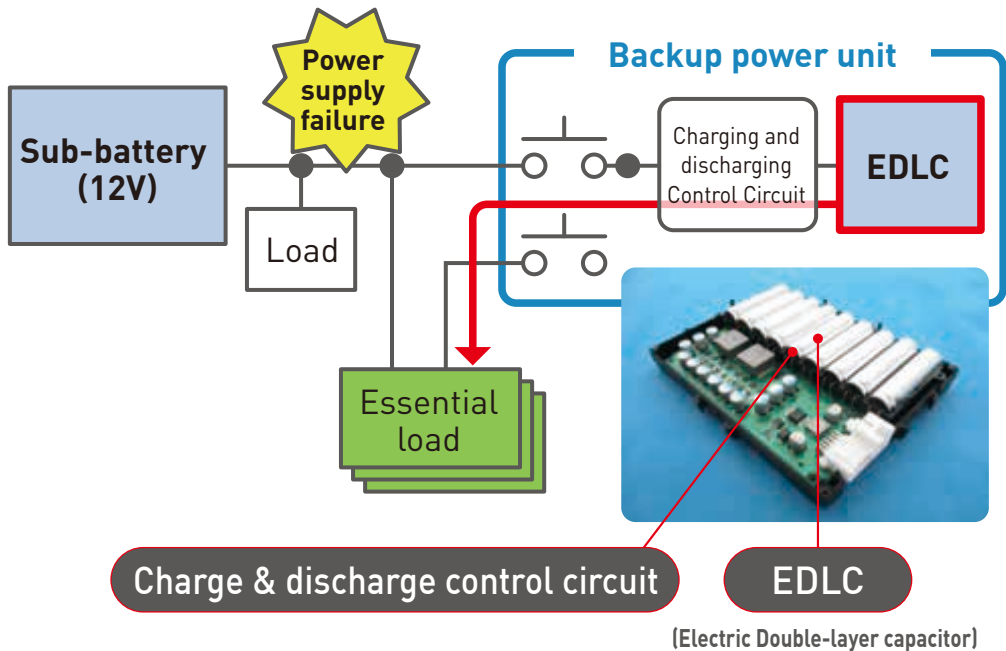


Power Changeover BOX

DC/DC Converter

EDLC supply power to essential load during a power failure

- According to increase essential load such as autonomous driving system, it is required for ensuring functions that passengers avoid risks during a power failure
- Quantity of EDLC can be changed depending on power
- Built-in charge and discharge function



Built-in charge & discharge function supply stable power