

WORLD CLASS CONNECTOR COMPANY  
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**UJU ELECTRONICS**  
WORLD CLASS CONNECTOR COMPANY

**Automotive Connector**



**UJU ELECTRONICS**  
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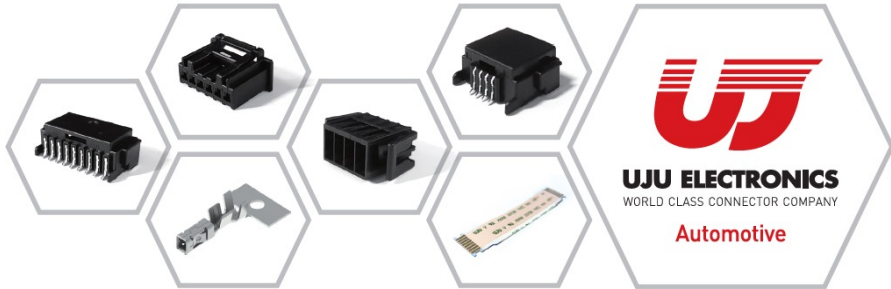
GROWTH COMPANY MAKING the FUTURE

## VISION

World Class Maker of Connectors & Electronic Components

## MISSION

- Enhanced Competence based on Knowledge
- Management Innovation based on profitability
- Marketing based on technology



## History

Vietnam Thai Nguyen AD factory completion	2023	
Approved HKMC supplier ( 020D / 025 D Series )	2021	Approved Magneti Marelli supplier ( 020 D / 020 D C Series )
Supplied PCB SLOT Series Supplied 015 Series	2018	Achieved IATF 16949
Established Factory at Vietnam	2017	
	2015	Supplied 020 S Series Supplied 025 Series
	2014	
	2013	Supplied 020 Series Supplied to Fujikura
Achieved Hyundai-Kia Motors SQ Achieved ISO / TS 16949:2009	2012	
	2011	Set up Automotive Division
Established Plant at Hwaseong	2010	
	2008	Set up FFC Division
The KOSDAQ listing Achieved ISO 140001:2004	2004	
	2002	Established Factory at China
Started LG business	1998	
	1997	Started Samsung business
Founded	1993	

### Domestic Factories



#### HQ(Hwaseong)

Address :  
61, 532beon-gil, chorog-ro,  
yanggam-myun, hwaseong-city,  
yeonggi-do, 18627, KOREA



#### Ansan Plant

Address :  
342, byeolmangno,  
Danwon-gu, Ansan-si,  
Gyeonggi-do, Korea

### Offices



#### Shanghai Sales Office

Address :  
Rm 1105, Jiazheng International Building,  
No.28, Moyu Road, Jiading District,  
Shanghai, China

### Overseas Factories



#### Vietnam Plant

Address :  
No 55, Lot CN 12, Khai Quang  
I.Z, VinhYen, Vinh Phuc  
Province, Viet Nam



#### Qingdao Plant

Address :  
Yuhuangong Gongyeyuan,  
Xiaozhuangjiedo, Chengyangqu,  
Qingdao Shandong China



#### ShenZhen & Taiwan Sales Office

Address(Shenzhen) :  
Rm 1508, ChuangJian Building, No.6023  
Shennan Blvd, Shenzhen, GuangDong, China  
Address(Taiwan) :  
3F-5, No. 18, Lane 48, XingShan Road, NeiHu  
District, Taipei City, 11469, Taiwan.



# UJU Products Portfolio

### INDICATOR CONTROL PCB

### ROOM MIRROR (ETCS)

### LED REAR LIGHT

### LED HEAD LIGHT

### SWITCH

### INVERTER CLUSTER

## 015(0.40mm) Series SMT TYPE

- Application**
- ▶ Multi-Function Switch
  - ▶ Steering Wheel Remote Control
  - ▶ Side Mirror

- Characteristic**
- ▶ Light and Miniature
  - ▶ Compact design and Smaller Size



- ▶ The blade width of male Terminal for this connector is 0.015 inch (0.4mm)
- ▶ The terminal pitch of this connector is 1.5mm
- ▶ This is small SMT connector that meets the requirement of the vehicle environment
- ▶ This is a unique connector for 0.015 inch(0.4mm) in the Korea that meets the Automotive Specifications
- ▶ Reliability Test Specification : ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 500V	-40°C ~ 85°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF33	PA66-GF30	Copper Alloy

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
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2P		Vertical	KH1600053-xx	5.92 x 2.85 x 5.8		KH1600051-xx	5.0 x 2.85 x 5.45
3P		Vertical	KH1600057-xx	7.42 x 2.85 x 5.8		KH1600052-xx	6.5 x 2.85 x 5.45

### Terminal

Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1600050-21 (Female)	0.96	1.12	4.88	0.4	Tin	0.22 mm <sup>2</sup>

# 020 S BL(0.50mm) Series

## SMT TYPE

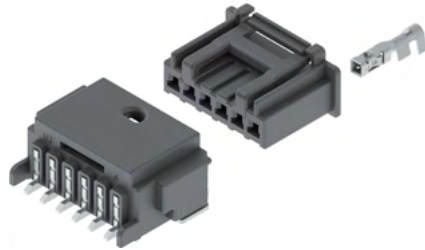
S : Small  
BL : Blistering Less

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light
- ▶ Side Mirror

### Characteristic

- ▶ Light and Miniature
- ▶ Process for easy mating
- ▶ Compact Size and Good contact



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ This product is smaller than 020 Series and excellent space utilization
- ▶ Reliability Test Specifications : ES91500-03, GMW3191

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PA66-GF15	Copper Alloy

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1400004-21 (Female)	1.5	1.9	7.8	0.5	Tin	0.22 ~ 0.5 mm <sup>2</sup>
KH1400004-31 (Female)	1.5	1.9	7.8	0.5	Au	0.22 ~ 0.5 mm <sup>2</sup>

# 020 S BL(0.50mm) Series

## SMT TYPE

S : Small  
BL : Blistering Less

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1700138-xx	8.2 x 6.8 x 10.9		KH1400047-xx	6.0 x 6.4 x 9.1
		Vertical	KH1700126-xx	8.4 x 9.7 x 7.9			
3P		Horizontal	KH1700140-xx	10.2 x 6.8 x 10.9		KH1400048-xx	8.0 x 6.4 x 9.1
		Vertical	KH1700128-xx	10.4 x 9.7 x 7.9			
4P		Horizontal	KH1700142-xx KH1800019-xx	12.2 x 6.8 x 10.9		KH1400049-xx	10 x 6.4 x 9.1
		Vertical	KH1700130-xx	12.4 x 9.7 x 7.9			
5P		Horizontal	KH1700144-xx KH1800020-xx	14.2 x 6.8 x 10.9		KH1500004-xx	12 x 6.4 x 9.1
		Vertical	KH1700132-xx KH1800014-xx	14.4 x 9.7 x 7.9			
6P		Horizontal	KH1700146-xx KH1800021-xx	16.2 x 6.8 x 10.9		KH1400069-xx	14 x 6.4 x 9.1
		Vertical	KH1700134-xx KH1800015-xx	16.4 x 9.7 x 7.9			
7P		Horizontal	KH1700148-xx KH1800022-xx	18.2 x 6.8 x 10.9		KH1600005-xx	16 x 6.4 x 9.1
		Vertical	KH1700136-xx	20.4 x 9.7 x 7.9			
8P		Horizontal	KH1700150-xx KH1800023-xx	20.2 x 6.8 x 10.9		KH1400070-xx	18 x 6.4 x 9.1
		Vertical	KH1700136-xx	20.4 x 9.7 x 7.9			
9P		Horizontal	KH1700152-xx KH1800024-xx	22.2 x 6.8 x 10.9		KH1600006-xx	20 x 6.4 x 9.1
		Vertical	KH1700136-xx	20.4 x 9.7 x 7.9			
10P		Horizontal	KH1700016-xx KH1800033-xx	24.2 x 6.8 x 10.9		KH1700015-xx	22 x 6.4 x 9.1
		Vertical	KH1700018-xx	24.4 x 9.7 x 7.9			
12P		Horizontal	KH1800112-xx	28.2 x 6.8 x 10.9		KH1800111-xx	26 x 6.4 x 9.1
		Vertical					

# 020(0.50mm) Series

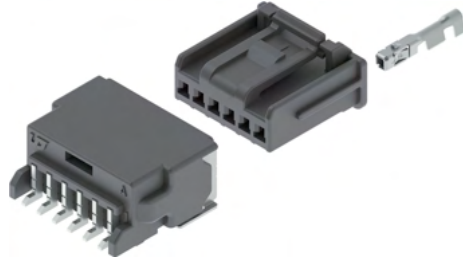
## SMT TYPE

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light
- ▶ Side Mirror

### Characteristic

- ▶ Light and Miniature
- ▶ Process for easy mating
- ▶ Compact Size and Good contact



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ Reliability Test Specifications : ES91500-03, GMW3191

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
LCP-GF/MF35	PBT-GF10	Copper Alloy

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1200030-21 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.35 mm <sup>2</sup>
KH1200030-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.5 mm <sup>2</sup>
KH1200030-31 (Female)	1.5	1.6	10.2	0.5	Au	0.3~ 0.35 mm <sup>2</sup>

# 020(0.50mm) Series

## SMT TYPE

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1200007-xx KH1700020-xx	8.0 x 7.2 x 13.2		KH1200012-xx	7.9 x 7.0 x 12.4
		Vertical	KH1300001-xx KH1700001-xx	8.5 x 8.5 x 12.2			
3P		Horizontal	KH1200013-xx KH1700021-xx	10 x 7.2 x 13.2		KH1200015-xx	9.9 x 7.0 x 12.4
		Vertical	KH1200025-xx KH1700002-xx	10.5 x 8.5 x 12.2			
4P		Horizontal	KH1200016-xx KH1700022-xx	12 x 7.2 x 13.2		KH1200018-xx	9.9 x 7.0 x 12.4
		Vertical	KH1300004-xx KH1700003-xx	12.5 x 8.5 x 12.2			
6P		Horizontal	KH1200019-xx KH1700023-xx	16 x 7.2 x 13.2		KH1200021-xx	13.9 x 7.0 x 12.4
		Vertical	KH1300006-xx KH1700004-xx	16.5 x 8.5 x 12.2			
8P		Horizontal	KH1200022-xx KH1700024-xx	20 x 7.2 x 13.2		KH1200024-xx	17.9 x 7.0 x 12.4
		Vertical	KH1300008-xx KH1700005-xx	20.5 x 8.5 x 12.2			
9P		Horizontal	KH1400001-xx KH1700025-xx	22 x 7.2 x 13.2		KH1400003-xx	19.9 x 7.0 x 12.4

# 020 D(0.50mm) Series

## SMT TYPE

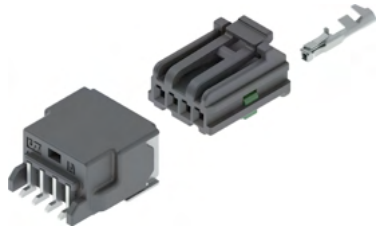
D : Double Lock

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light

### Characteristic

- ▶ Light and Miniature
- ▶ Process for easy mating
- ▶ Compact Size and Good contact
- ▶ Easy handle the secondary lock



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ This product is similar size with 020 Series even included the mounted TPA
- ▶ Pre-assembled TPA for secondary lock
- ▶ Reliability Test Specification : ES91500-00, ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PBT-GF10	Copper Alloy

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1700007-20 (Female)	1.5	1.6	10.2	0.5	Tin	0.22 mm <sup>2</sup>
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH1700007-30 (Female)	1.5	1.6	10.2	0.5	Au	0.22 mm <sup>2</sup>
KH1700007-32 (Female)	1.5	1.6	10.2	0.5	Au	0.3 ~ 0.5 mm <sup>2</sup>

# 020 D(0.50mm) Series

## SMT TYPE

D : Double Lock

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1700110-xx KH2100108-xx	8.0 x 7.2 x 13.2		KH1700098-xx	5.9 x 7.3 x 12.6
3P		Horizontal	KH1700112-xx KH2100109-xx	10 x 7.2 x 13.2		KH1700101-xx	7.9 x 7.3 x 12.6
		Vertical	KH1800081-xx KH2100116-xx	10.5 x 8.5 x 12.2			
4P		Horizontal	KH1700114-xx KH2100110-xx	12 x 7.2 x 13.2		KH1700104-xx	9.9 x 7.3 x 12.6
		Vertical	KH1800083-xx KH2100117-xx	12.5 x 8.5 x 12.2			
5P		Horizontal	KH1800097-xx KH2100111-xx	14 x 7.2 x 13.2		KH1800066-xx	11.9 x 7.3 x 12.6
		Vertical	KH1800085-xx KH2100118-xx	14.5 x 8.5 x 12.2			
6P		Horizontal	KH1700116-xx KH2100112-xx	16 x 7.2 x 13.2		KH1700107-xx	13.9 x 7.3 x 12.6
		Vertical	KH1800087-xx KH2100119-xx	16.5 x 8.5 x 12.2			
7P		Horizontal	KH1800099-xx KH2100113-xx	18 x 7.2 x 13.2		KH1800069-xx	15.9 x 7.3 x 12.6
		Vertical	KH1800089-xx KH2100120-xx	18.5 x 8.5 x 12.2			
8P		Horizontal	KH1800101-xx KH2100114-xx	20 x 7.2 x 13.2		KH1800072-xx	17.9 x 7.3 x 12.6
		Vertical	KH1800091-xx KH2100121-xx	20.5 x 8.5 x 12.2			
10P		Horizontal	KH1800103-xx KH2100115-xx	22 x 7.2 x 13.2		KH1800025-xx	21.9 x 7.3 x 12.6
		Vertical	KH1800028-xx KH2100122-xx	24.5 x 8.5 x 12.2			
12P		Vertical	KH1800093-xx KH2100123-xx	28.5 x 8.5 x 12.2		KH1800075-xx	25.9 x 7.3 x 12.6
15P		Vertical	KH1800095-xx KH2100124-xx	34.5 x 8.5 x 12.2		KH1800078-xx	31.9 x 7.3 x 12.6

# 020 D G(0.50mm) Series

## SMT TYPE

D : Double Lock

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light

### Characteristic

- ▶ Light and Miniature
- ▶ Process for easy mating
- ▶ Compact Size and Good contact
- ▶ Easy handle the secondary lock



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ This product is similar size with 020 Series even included the mounted TPA
- ▶ Pre-assembled TPA for secondary lock
- ▶ Reliability Test Specification : LV214, USCAR-2

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PBT-GF10	Copper Alloy

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1710007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH1710007-32 (Female)	1.5	1.6	10.2	0.5	Au	0.3 ~ 0.5 mm <sup>2</sup>

# 020 D G(0.50mm) Series

## SMT TYPE

D : Double Lock

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1710110-xx KH2110108-xx	8.0 x 7.2 x 13.2		KH1710098-xx	5.9 x 7.3 x 12.6
3P		Horizontal	KH1710112-xx KH2110109-xx	10 x 7.2 x 13.2		KH1710101-xx	7.9 x 7.3 x 12.6
		Vertical	KH1810081-xx KH2110116-xx	10.5 x 8.5 x 12.2			
4P		Horizontal	KH1710114-xx KH2110110-xx	12 x 7.2 x 13.2		KH1710104-xx	9.9 x 7.3 x 12.6
		Vertical	KH1810083-xx KH2110117-xx	12.5 x 8.5 x 12.2			
5P		Horizontal	KH1810097-xx KH2110111-xx	14 x 7.2 x 13.2		KH1810066-xx	11.9 x 7.3 x 12.6
		Vertical	KH1810085-xx KH2110118-xx	14.5 x 8.5 x 12.2			
6P		Horizontal	KH1710116-xx KH2110112-xx	16 x 7.2 x 13.2		KH1710107-xx	13.9 x 7.3 x 12.6
		Vertical	KH1810087-xx KH2110119-xx	16.5 x 8.5 x 12.2			
7P		Horizontal	KH1810099-xx KH2110113-xx	18 x 7.2 x 13.2		KH1810069-xx	15.9 x 7.3 x 12.6
		Vertical	KH1810089-xx KH2110120-xx	18.5 x 8.5 x 12.2			
8P		Horizontal	KH1810101-xx KH2110114-xx	20 x 7.2 x 13.2		KH1810072-xx	17.9 x 7.3 x 12.6
		Vertical	KH1810091-xx KH2110121-xx	20.5 x 8.5 x 12.2			
10P		Horizontal	KH1810103-xx KH2110115-xx	22 x 7.2 x 13.2		KH1810025-xx	21.9 x 7.3 x 12.6
		Vertical	KH1810028-xx KH2110122-xx	24.5 x 8.5 x 12.2			
12P		Vertical	KH1810093-xx KH2110123-xx	28.5 x 8.5 x 12.2		KH1810075-xx	25.9 x 7.3 x 12.6
15P		Vertical	KH1810095-xx KH2110124-xx	34.5 x 8.5 x 12.2		KH1810078-xx	31.9 x 7.3 x 12.6

# 020 D C(0.50mm) Series

## SMT TYPE

D : Double Lock  
C : CPA (Connector Position Assurance)

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light

### Characteristic

- ▶ Light and Miniature
- ▶ Good workability through fully assembly
- ▶ Compact Size and Good contact
- ▶ Apply the CPA for prevents accidental un-mating



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ This product is similar size with 020 Series even included the mounted TPA
- ▶ Pre-assembled TPA & CPA
- ▶ Reliability Test Specification : ES91500-00, ES91500-03, LV214, USCAR-2

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PBT-GF30	Copper Alloy

● Tin ● Au

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1700007-20 (Female)	1.5	1.6	10.2	0.5	Tin	0.22 mm <sup>2</sup>
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# 020 D C(0.50mm) Series

## SMT TYPE

D : Double Lock  
C : CPA (Connector Position Assurance)

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1900035-xx KH2100125-xx	10 x 7.2 x 13.2		KH1900009-xx	7.9 x 7.72 x 15.2
		Vertical	KH1900056-xx KH2100132-xx	10.6 x 8.5 x 12.2			
3P		Horizontal	KH1900036-xx KH2100126-xx	12 x 7.2 x 13.2		KH1900012-xx	9.9 x 7.72 x 15.2
		Vertical	KH1900057-xx KH2100133-xx	12.6 x 8.5 x 12.2			
4P		Horizontal	KH1900037-xx KH2100127-xx	14 x 7.2 x 13.2		KH1900015-xx	11.9 x 7.72 x 15.2
		Vertical	KH1900058-xx KH2100134-xx	14.6 x 8.5 x 12.2			
5P		Horizontal	KH1900038-xx KH2100128-xx	16 x 7.2 x 13.2		KH1900017-xx	13.9 x 7.72 x 15.2
		Vertical	KH1900059-xx KH2100135-xx	16.6 x 8.5 x 12.2			
6P		Horizontal	KH1900039-xx KH2100129-xx	18 x 7.2 x 13.2		KH1900019-xx	15.9 x 7.72 x 15.2
		Vertical	KH1900060-xx KH2100136-xx	18.6 x 8.5 x 12.2			
7P		Horizontal	KH1900040-xx KH2100130-xx	20 x 7.2 x 13.2		KH1900021-xx	17.9 x 7.72 x 15.2
		Vertical	KH1900061-xx KH2100137-xx	20.6 x 8.5 x 12.2			
9P		Horizontal	KH1900041-xx KH2100131-xx	24 x 7.2 x 13.2		KH1900023-xx	21.9 x 7.72 x 15.2
		Vertical	KH1900062-xx KH2100138-xx	24.6 x 8.5 x 12.2			



# 020 D C G(0.50mm) Series

## SMT TYPE

D : Double Lock  
C : CPA (Connector Position Assurance)

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light

### Characteristic

- ▶ Light and Miniature
- ▶ Good workability through fully assembly
- ▶ Compact Size and Good contact
- ▶ Apply the CPA for prevents accidental un-mating



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ This product is similar size with 020 Series even included the mounted TPA
- ▶ Pre-assembled TPA & CPA
- ▶ Reliability Test Specification : LV214, USCAR-2

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PBT-GF30	Copper Alloy

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1710007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH1710007-32 (Female)	1.5	1.6	10.2	0.5	Au	0.3 ~ 0.5 mm <sup>2</sup>

# 020 D C G(0.50mm) Series

## SMT TYPE

D : Double Lock  
C : CPA (Connector Position Assurance)

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1910035-xx KH2110125-xx	10 x 7.2 x 13.2		KH1910009-xx	7.9 x 7.72 x 15.2
		Vertical	KH1910056-xx KH2110132-xx	10.6 x 8.5 x 12.2			
3P		Horizontal	KH1910036-xx KH2110126-xx	12 x 7.2 x 13.2		KH1910012-xx	9.9 x 7.72 x 15.2
		Vertical	KH1910057-xx KH2110133-xx	12.6 x 8.5 x 12.2			
4P		Horizontal	KH1910037-xx KH2110127-xx	14 x 7.2 x 13.2		KH1910015-xx	11.9 x 7.72 x 15.2
		Vertical	KH1910058-xx KH2110134-xx	14.6 x 8.5 x 12.2			
5P		Horizontal	KH1910038-xx KH2110128-xx	16 x 7.2 x 13.2		KH1910017-xx	13.9 x 7.72 x 15.2
		Vertical	KH1910059-xx KH2110135-xx	16.6 x 8.5 x 12.2			
6P		Horizontal	KH1910039-xx KH2110129-xx	18 x 7.2 x 13.2		KH1910019-xx	15.9 x 7.72 x 15.2
		Vertical	KH1910060-xx KH2110136-xx	18.6 x 8.5 x 12.2			
7P		Horizontal	KH1910040-xx KH2110130-xx	20 x 7.2 x 13.2		KH1910021-xx	17.9 x 7.72 x 15.2
		Vertical	KH1910061-xx KH2110137-xx	20.6 x 8.5 x 12.2			
9P		Horizontal	KH1910041-xx KH2110131-xx	24 x 7.2 x 13.2		KH1910023-xx	21.9 x 7.72 x 15.2
		Vertical	KH1910062-xx KH2110138-xx	24.6 x 8.5 x 12.2			

# 020 D C TR / D T TR(0.50mm) Series

## SMT TYPE

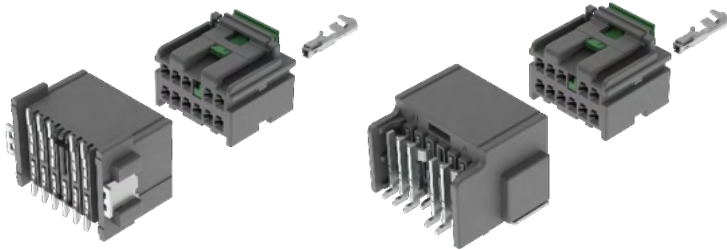
D : Double Lock  
C : CPA (Connector Position Assurance)

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light

### Characteristic

- ▶ Light and Miniature
- ▶ Good workability through fully assembly
- ▶ Compact Size and Good contact
- ▶ Apply the CPA for prevents accidental un-mating



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ This product is similar size with 020 Series even included the mounted TPA
- ▶ Pre-assembled TPA & CPA
- ▶ Reliability Test Specification : ES91500-00, ES91500-03, LV214, USCAR-2

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PBT-GF30	Copper Alloy

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1700007-20 (Female)	1.5	1.6	10.2	0.5	Tin	0.22 mm <sup>2</sup>
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# 020 D C TR(0.50mm) Series

## SMT TYPE

D : Double Lock  
C : CPA (Connector Position Assurance)

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
9P		Vertical	KH2200055-xx	17.4 x 12.2 x 13.5		KH2200029-xx	12.4 x 11.3 x 15.4
11P		Horizontal	KH2200047-xx	19.3 x 12.5 x 15.3		KH2200033-xx	14.4 x 11.3 x 15.4
		Vertical	KH2200058-xx	19.4 x 12.2 x 13.5			
13P		Horizontal	KH2200049-xx	21.3 x 12.5 x 15.3		KH2200036-xx	16.4 x 11.3 x 15.4
		Vertical	KH2200060-xx	21.4 x 12.2 x 13.5			
15P		Horizontal	KH2200051-xx	23.3 x 12.5 x 15.3		KH2200039-xx	18.4 x 11.3 x 15.4
		Vertical	KH2200062-xx	23.4 x 12.2 x 13.5			
17P		Horizontal	KH2200053-xx	25.3 x 12.5 x 15.3		KH2200042-xx	20.4 x 11.3 x 15.4
		Vertical	KH2200064-xx	25.4 x 12.2 x 13.5			

# 020 D T TR(0.50mm) Series

## SMT TYPE

D : Double Lock  
T : Top Latch

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
12P		Horizontal	KH2200093-xx	19.3 x 12.5 x 15.3		KH2200080-xx	14.4 x 11.3 x 12.6
		Vertical	KH2200098-xx	19.4 x 12.2 x 13.5			
14P		Horizontal	KH2200094-xx	21.3 x 12.5 x 15.3		KH2200083-xx	16.4 x 11.3 x 12.6
		Vertical	KH2200099-xx	21.4 x 12.2 x 13.5			
16P		Horizontal	KH2200095-xx	23.3 x 12.5 x 15.3		KH2200086-xx	18.4 x 11.3 x 12.6
		Vertical	KH2200100-xx	23.4 x 12.2 x 13.5			

# 020 D TR(0.50mm) Series

## SMT TYPE

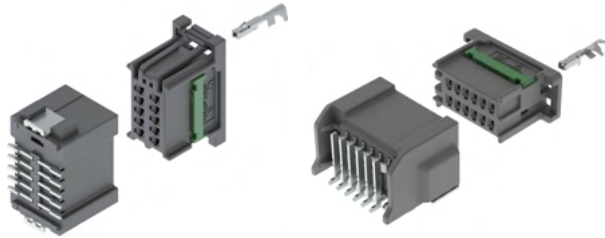
D : Double Lock  
TR : Two Row

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light
- ▶ E-Shifter indicator

### Characteristic

- ▶ Light and Miniature
- ▶ Pre-Assembled TPA for secondary lock
- ▶ Good workability through fully assembly



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ Pre-assembled TPA for secondary lock
- ▶ Reliability Test Specification : ES91500-00, ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PBT-GF10	Copper Alloy

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
10P		Vertical	KH1800007-xx	19.9 x 12.9 x 11.8		KH1800004-xx	19.5 x 9.6 x 12.6
12P		Horizontal	KH1900050-xx	21.2 x 12 x 16		KH1900044-xx	21.5 x 9.6 x 12.6
		Vertical	KH1900050-xx	21.9 x 12.9 x 11.8		KH1900044-xx	21.5 x 9.6 x 12.6
14P		Horizontal	KH1900054-xx	23.2 x 12 x 16		KH1900047-xx	23.5 x 9.6 x 12.6
		Vertical	KH1900054-xx	23.9 x 12.9 x 11.8		KH1900047-xx	23.5 x 9.6 x 12.6

● Tin ● Au

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1700007-20 (Female)	1.5	1.6	10.2	0.5	Tin	0.22 mm <sup>2</sup>
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# 020 S II (0.50mm) Series

## SMT TYPE

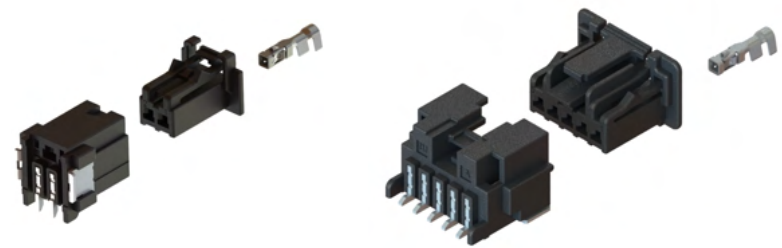
S : Small  
II : Prevent Miss Lock

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light
- ▶ Side Mirror

### Characteristic

- ▶ Light and Miniature
- ▶ Process for easy mating
- ▶ Compact Size and Good contact



- ▶ The blade width of male Terminal for this Connector is 0.020 inch (0.5mm)
- ▶ The terminal pitch of this connector is 2.0mm
- ▶ This product is smaller than 020 Series and excellent space utilization
- ▶ This product has a lock function that does not unlocked arbitrarily. (Prevent Miss Lock)
- ▶ Reliability Test Specifications : ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30	PA66-GF15	Copper Alloy

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Vertical	KH2400016-xx	8.4 x 9.8 x 8.4		KH2300047-xx	8.2 x 6.9 x 9.1
5P		Horizontal	KH2300003-xx	14.2 x 8.5 x 10.9		KH2300004-xx	14.2 x 8.2 x 9.1

● Tin ● Au

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1400004-21 (Female)	1.5	1.9	7.8	0.5	Tin	0.22 ~ 0.5 mm <sup>2</sup>
KH1400004-31 (Female)	1.5	1.9	7.8	0.5	Au	0.22 ~ 0.5 mm <sup>2</sup>

ALL specifications Subject to change. Consult UJU ELECTRONICS for latest specifications

# 025 D(0.64mm) Series

## SMT TYPE

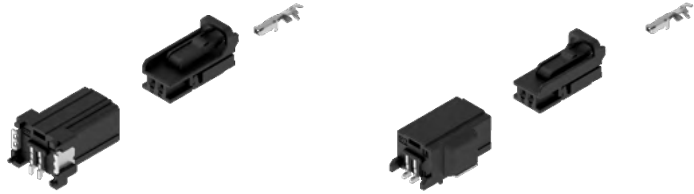
D : Double Lock

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Steering Wheel Remote Control
- ▶ Vanity Lamp
- ▶ TGS Indicator

### Characteristic

- ▶ Double locking structure using the integral TPA
- ▶ Terminal's reverse & incomplete insert prevention structure



- ▶ The blade width of male terminal for this connector is 0.025 inch (0.64mm)
- ▶ The terminal pitch of this connector is 2.2mm
- ▶ This is the standard product about the small connector for 0.025 inch (0.64mm)
- ▶ Reliability Test Specification : ES91500-00

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	10mΩ (Max.)	100MΩ(Min.)	AC 1KV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PPA-GF15	PBT	Copper Alloy

● Tin ● Au

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1800045-21 (Female)	1.65	1.7	11	0.64	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# 025 D(0.64mm) Series

## SMT TYPE

D : Double Lock

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1400027-xx	12.4 x 9.25 x 19.2		KH1800056-xx	7.7 x 10.5 x 18.7
		Vertical	KH1400033-xx	12.6 x 10.4 x 18.25			
3P		Horizontal	KH1400029-xx	14.6 x 9.25 x 19.2		KH1900003-xx	9.9 x 10.5 x 18.7
		Vertical	KH1400035-xx	14.8 x 10.4 x 18.25			
4P		Horizontal	KH1400031-xx	16.8 x 9.25 x 19.2		KH1900005-xx	12.1 x 10.5 x 18.7
		Vertical	KH1400037-xx	17 x 10.4 x 18.25			
6P		Horizontal	KH1300051-xx	21.2 x 9.25 x 19.2		KH1900007-xx	16.5 x 10.5 x 18.7
		Vertical	KH1300031-xx	21.4 x 10.4 x 18.25			
8P		Horizontal	KH1300055-xx	25.6 x 9.25 x 19.2		KH1800058-xx	20.9 x 10.5 x 18.7
		Vertical	KH1300038-xx	25.8 x 10.4 x 18.25			
10P		Horizontal	KH1900072-xx	32.2 x 9.25 x 19.2		KH1900070-xx	27.5 x 10.5 x 18.7

# 025 (0.64mm) Series

## Wire To Wire TYPE



Pin	Item	PN.	Size(mm) (WxHxL)
6P		KH1500001-xx	18.7x9.4x32.0
6P		KH1300035-xx	16.5x9.25x18.7
Suitable Male Terminal		Suitable Female Terminal	
▶ KH1200034-xx (Tin Plated)		▶ KH1200031-xx (Tin Plated)	



# 025 II(0.64mm) Series

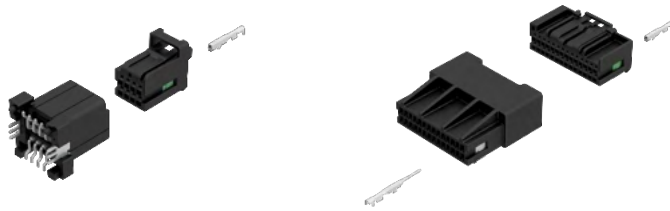
## SMT & WIRE TO WIRE TYPE

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Steering Wheel Remote Control

### Characteristic

- ▶ Advanced terminal contact structure
- ▶ Pre-assembled TPA for Easy handle the secondary lock
- ▶ Kojiri prevention structure



- ▶ The blade width of male terminal for this connector is 0.025 inch[0.64mm]
- ▶ The terminal pitch of this connector is 2.2mm
- ▶ Applied TPA type of male/female connector : Pre-assembled TPA
- ▶ This is the standard product about the small connector for 0.025 inch(0.64mm)
- ▶ Reliability Test Specification : ES91500-00, GMW3191

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF30 / PBT-GF10	PBT-GF10	Copper Alloy

Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH2000016-21 (Female)	1.6	1.55	21.9	0.64	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH2000017-21 (Male)	1.4	2.0	13.9	0.64	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# 025 II(0.64mm) Series

## SMT & WIRE TO WIRE TYPE

● Tin ● Au

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
6P		Vertical	KH2000065-xx	15.8 x 16.2 x 20.3		KH2000059-xx	9.1 x 15.5 x 18.1
		Male	KH2100046-xx	11.5 x 16.2 x 33.0			
8P		Vertical	KH2000085-xx	18.0 x 16.2 x 20.3		KH2000082-xx	11.3 x 15.5 x 18.1
		Male	KH2000025-xx	16.1 x 16.2 x 33.0			
10P		Vertical	KH2000071-xx	22.4 x 16.2 x 20.3		KH2000062-xx	15.7 x 15.5 x 18.1
		Male	KH2100104-xx	22.5 x 16.1 x 33.0			
16P		Vertical	KH2100102-xx	20.1 x 16.2 x 18.1		KH2000088-xx	20.1 x 15.2 x 18.1
		Male	KH2000091-xx	22.7 x 16.2 x 33.0			
		Vertical	KH2100052-xx	31.5 x 16.2 x 33.0			
		Male	KH2100055-xx	33.3 x 15.2 x 18.1			
24P		Vertical	KH2100052-xx	31.5 x 16.2 x 33.0		KH2100049-xx	28.9 x 15.2 x 18.1
		Male	KH2100055-xx	35.9 x 16.2 x 33.0			
28P		Vertical	KH2100052-xx	31.5 x 16.2 x 33.0		KH2100055-xx	33.3 x 15.2 x 18.1
		Male	KH2100055-xx	35.9 x 16.2 x 33.0			

# 025(0.64mm) Sealed Series

## WIRE TO WIRE TYPE

### Application

- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Radar
- ▶ Sensor

### Characteristic

- ▶ Connector for Wire to Wire
- ▶ Robust designed water resistant feature
- ▶ Pre-Assembled the moving plate for Terminal Protection



- ▶ The blade width of male Terminal for this Connector is 0.025 inch (0.64mm)
- ▶ The terminal pitch of this connector is 3.3mm
- ▶ Quality enhancement in waterproof aspect
- ▶ Applied TPA type of male/female connector : Pre-assembled TPA
- ▶ Reliability Test Specifications : ES91500-00

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Female Housing	Male Housing	Terminal	Wire Seal
PBT-GF10	PBT-GF10	Copper Alloy	Silicone

Pin	Item	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
4P		KH2200019-xx KH2200018 (TPA)	Ø21.4 x Ø21.4 x 37.1 9.2 x 12.6 x 21.4		KH2200017-xx	16.9 x 22.0 x 22.2
6P		KH2100071-xx KH2100070 (TPA)	Ø23.0 x Ø23.0 x 37.1 12.4 x 12.6 x 21.4		KH2100067-xx	20.2 x 22.0 x 22.2
8P		KH2000039-xx	21.5 x 19.5 x 37.1		KH2000036-xx	23.5 x 20.6 x 22.2

### Terminal



### Seal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH2000035-21 (Male)	1.5	1.8	22.2	0.64	Tin	0.3 ~ 0.5 mm
KH2000034-21 (Female)	1.5	2.0	15.2	0.64	Tin	0.3 ~ 0.5 mm
KH2000035-20 (Male)	1.5	1.8	22.2	0.64	Tin	0.22 mm
KH2000034-20 (Female)	1.5	2.0	15.2	0.64	Tin	0.22 mm

Part No.	Dimension (mm)			Color	Insulation Range	Applicable Wire Range
	W	H	L			
KD0000002 (Wire Seal S)	Ø3.1	Ø3.1	6.4	Red	Ø0.9	0.22 mm
KD0000004 (Wire Seal M)	Ø3.1	Ø3.1	6.4	Gray	Ø1.4	0.3 mm
KD0000005 (Wire Seal L)	Ø3.0	Ø3.0	6.4	Purple	Ø1.6~Ø1.7	0.5 mm
KD0000003 (Dummy Seal)	Ø3.6	Ø3.6	7.3	Blue	-	-

# 025 II(0.64mm) Self Aligned Series

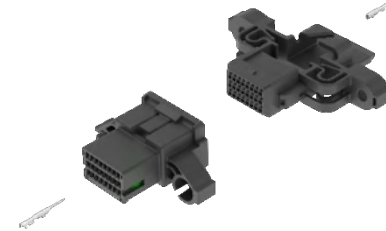
## WIRE TO WIRE TYPE

### Application

- ▶ Headlight

### Characteristic

- ▶ Connector for Wire to Wire
- ▶ Structure for connector position correction



- ▶ The blade width of male terminal for this connector is 0.025 inch[0.64mm]
- ▶ The terminal pitch of this connector is 2.2mm
- ▶ Applied TPA type of male/female connector : Pre-assembled TPA
- ▶ Reliability Test Specification : ES91500-00, GMW3191

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PBT-GF10	PBT-GF10	Copper Alloy

Pin	Item	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
6P		KH2100088-xx	38.7 x 18.4 x 34.1		KH2100080-xx	16.3 x 11.4 x 16.7
					KH2100086-xx	37.5 x 15.1 x 57.3
12P		KH2100091-xx	44.2 x 17.6 x 34.1		KH2100083-xx	23.7 x 10.7 x 16.7
					KH2100087-xx	69.2 x 15.2 x 52.8
24P		KH2200005-xx	52.3 x 21.4 x 34.1		KH2200001-xx	28.1 x 14.5 x 16.7
					KH2200004-xx	75.3 x 15.2 x 52.3

ALL specifications Subject to change. Consult UJU ELECTRONICS for latest specifications

# 025 TR(0.64mm) Series

## SMT TYPE

TR : Two Row

### Application

- ▶ LDM of Headlight
- ▶ Rear Combination Light
- ▶ Power Window Switch

### Characteristic

- ▶ Pre-Assembled TPA for secondary lock
- ▶ Raw Material for high Temp. condition
- ▶ Kojiri prevention structure



- ▶ The blade width of male Terminal for this Connector is 0.025 inch (0.64mm)
- ▶ The terminal pitch of this connector is 2.2mm
- ▶ It has applied the TPA of side type for the assemble workability
- ▶ Pre-assembled TPA for secondary lock
- ▶ Reliability Test Specifications : ES91500-00, ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA9T-GF33	PBT-GF10	Copper Alloy

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
16P		Vertical	KH1700070-xx	32.6 x 16.2 x 19.7		KH1700064-xx	20.4 x 14.6 x 18.7
24P		Vertical	KH1700075-xx	41.4 x 16.2 x 19.7		KH1700067-xx	29.2 x 14.6 x 18.7

### Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1200031-20 (Female)	1.5	1.9	14.2	0.64	Tin	0.22 mm <sup>2</sup>
KH1200031-21 (Female)	1.5	1.9	14.2	0.64	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# 025 BTP(0.64mm) Series

## SMT TYPE

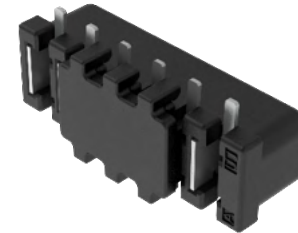
BTP : Board to Pin

### Application

- ▶ Headlight

### Characteristic

- ▶ Not required the Male connector
- ▶ Good contact



- ▶ The blade width of male Terminal for this Connector is 0.025 inch(0.64mm)
- ▶ The terminal pitch of this connector is 2.9mm
- ▶ Reliability Test Specification : ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 500V	-40°C ~ 125°C

### Materials

Female Housing	Terminal
LCP-GF30	Copper Alloy

Pin	Item	Type	Female PN.	Size (mm) (W x H x L)
2P		Vertical	KH2000044-20	10.7 x 5.2 x 7.4
4P		Vertical	KH2000028-20	13.6 x 5.2 x 7.4
6P		Vertical	KH2000032-20	16.5 x 5.2 x 7.4

# 060(1.50mm) Sealed Series

## WIRE TO WIRE TYPE

### Application

- ▶ Headlight
- ▶ Switch
- ▶ Sensor
- ▶ Injector

### Characteristic

- ▶ Connector for Wire to Wire
- ▶ Robust designed water resistant feature



- ▶ The blade width of male Terminal for this Connector is 0.060 inch (1.50mm)
- ▶ The terminal pitch of this connector is 4.6mm
- ▶ Quality enhancement in waterproof aspect
- ▶ Applied TPA type of male/female connector : Pre-assembled TPA
- ▶ Reliability Test Specifications : ES91500-00

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
10A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Female Housing	Male Housing	Terminal	Wire Seal
PBT-GF10	PBT-GF10	Copper Alloy (F) & Brass (M)	Silicone

Pin	Item	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		KH2100099-xx	17.3 x 17.2 x 37.8		KH2100096-xx	18.4 x 19.7 x 23.2

### Terminal

Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH2100095-22 (Male)	2.4	1.9	22.1	1.50	Tin	0.75 ~ 1.25 mm <sup>2</sup>
KH2100094-22 (Female)	2.3	2.4	16.3	1.50	Tin	0.75 ~ 1.25 mm <sup>2</sup>
KH2100095-21 (Male)	2.4	1.9	22.1	1.50	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH2100094-21 (Female)	2.3	2.4	16.3	1.50	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH2100095-20 (Male)	2.4	1.9	22.1	1.50	Tin	0.22 mm <sup>2</sup>
KH2100094-20 (Female)	2.3	2.4	16.3	1.50	Tin	0.22 mm <sup>2</sup>

### Seal

Part No.	Dimension (mm)			Color	Insulation Range	Applicable Wire Range
	W	H	L			
KD0000007 (Wire Seal S)	Ø4.8	Ø4.8	7.8	Brown	Ø0.9	0.22 mm <sup>2</sup>
KD0000008 (Wire Seal M)	Ø4.8	Ø4.8	7.8	Orange	Ø1.4	0.3 ~ 0.85 mm <sup>2</sup>
KD0000009 (Wire Seal L)	Ø4.8	Ø4.8	7.8	Gray	Ø1.9~Ø2.2	1.25 mm <sup>2</sup>
KD0000010 (Dummy Seal)	Ø5.3	Ø5.3	8.8	Red	-	-

# 060(1.50mm) Series

## SMT TYPE

### Application

- ▶ Headlight
- ▶ Switch
- ▶ Sensor
- ▶ Injector

### Characteristic

- ▶ Connector for Wire to Wire
- ▶ Robust designed water resistant feature



- ▶ The blade width of male Terminal for this Connector is 0.060 inch (1.50mm)
- ▶ The terminal pitch of this connector is 3.2/4.35mm
- ▶ Quality enhancement in non-waterproof aspect
- ▶ Applied TPA type of female connector : Pre-assembled TPA
- ▶ Reliability Test Specifications : ES91500-00

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength
10A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV

### Materials

Female Housing	Male Housing	Terminal
PBT-GF10	PA9T-GF30%	Copper Alloy (F)

Pin	Item	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		KH2300028-xx	21.4 x 18.9 x 19.85		KH2300007-xx	15.6 x 17.75 x 19.3

### Terminal

Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH2100094-22 (Female)	2.3	2.4	15.9	1.50	Tin	0.75 ~ 1.25 mm <sup>2</sup>
KH2100094-21 (Female)	2.3	2.4	15.9	1.50	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH2100094-20 (Female)	2.3	2.4	15.9	1.50	Tin	0.22 mm <sup>2</sup>



# PCB Jumper Series

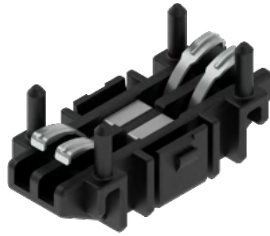
## BOARD TO BOARD TYPE

### Application

- ▶ Headlight
- ▶ HMSL

### Characteristic

- ▶ Connection of separated PCBs
- ▶ Wireless
- ▶ Connector for various PCB assembly conditions (Tilting, Rolling, Flush)



- ▶ PCBs can be connected by this product
- ▶ The terminal pitch is 4.0mm
- ▶ A specified mount shape is required for compression and fastening between the connector and PCB.
- ▶ Reliability Test Specifications : ES91500-03

# PCB Slot Series

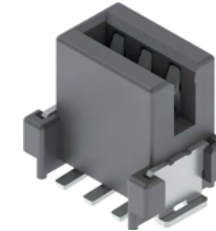
## SMT TYPE

### Application

- ▶ Crush Pad Switch
- ▶ Switch bank

### Characteristic

- ▶ Connector for Board to Board vertically
- ▶ This is used only one connector for connection
- ▶ Good contact




- ▶ PCBs can be connected by this product alone
- ▶ Applicable PCB thickness is 1.6mm for Slot area
- ▶ The terminal pitch is 2.2mm
- ▶ Reliability Test Specifications : ES91500-03, GMW3191

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 500V	-40°C ~ 125°C

### Materials

Female Housing	Terminal
PBT-GF10	Phosphor Bronze



Pin	Item	Type	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH2300032-xx	14.8 x 15.5 x 35.0

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Female Housing	Terminal
PA9T-GF30	Copper Alloy

Pin	Item	Type	Female PN.	Size (mm) (W x H x L)
3P		Vertical	KH1700030-xx KH1700033-xx	9.9 x 9.1 x 6.6
4P		Vertical	KH1800053-xx KH1800055-xx	12.1 x 9.1 x 6.6

# PCB Slot Series

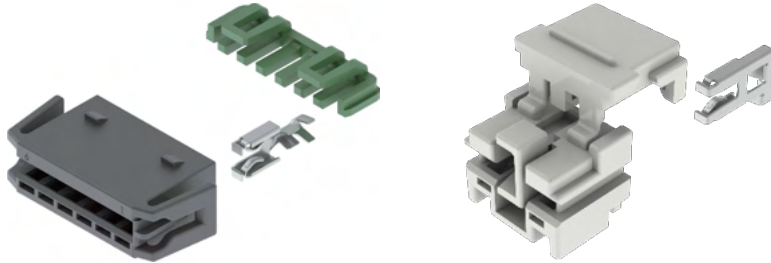
## SLOT TYPE

### Application

- ▶ Rear Combination Light
- ▶ Daytime Running Light
- ▶ Headlight

### Characteristic

- ▶ Slot connector for Wire to Board
- ▶ Connecting to PCB board directly
- ▶ Good contact



- ▶ This is used only female connector without male.
- ▶ It is connecting the wire to board. (Slot Type)
- ▶ The terminal pitch is 2.5mm.
- ▶ Applicable PCB thickness is 1.6mm for Slot area
- ▶ Optional Part for Horizontal : T/CPA
- ▶ Reliability Test Specifications : ES91500-03, GMW3191, LV214, USCAR-2

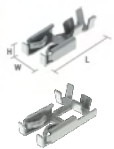
### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Horizontal Housing	Vertical Housing	T/CPA	Terminal
PA66-GF15	PBT	PA66-GF15	Copper Alloy

### Terminal



Part No.	Dimension (mm)			PCB Thickness (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1600036-21 KH1600036-31 (Horizontal)	4.1	1.6	9.1	1.6	Tin Au	0.3 ~ 0.5 mm <sup>2</sup>
KH2000008-xx (Vertical)	4.1	1.6	9.2	1.6	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# PCB Slot Series

## SLOT TYPE

● Tin ● Au

Pin	Item	Type	Female PN.	Size (mm) (W x H x L)	Item	T/CPA PN. (For HZT)	Size (mm) (W x H x L)
2P		Horizontal	KH1600037-xx	11.1 x 6.0 x 10.7		KH1700026-70	8.6 x 3.2 x 5.9
		Vertical	KH2000009-xx	10.8 x 8.7 x 11.4			
3P		Horizontal	KH1600038-xx	13.6 x 6.0 x 10.7		KH1700027-70	11.1 x 3.2 x 5.9
		Vertical	KH2000010-xx	13.3 x 8.7 x 11.4			
4P		Horizontal	KH1600039-xx	16.1 x 6.0 x 10.7		KH1700028-70	13.6 x 3.2 x 5.9
		Vertical	KH2000011-xx	15.8 x 8.7 x 11.4			
5P		Horizontal	KH1900091-xx	18.6 x 6.0 x 10.7			
		Vertical	KH2200015-xx	18.3 x 8.7 x 11.4			
6P		Horizontal	KH1600040-xx	21.1 x 6.0 x 10.7		KH1700029-70	18.6 x 3.2 x 5.9
		Vertical	KH2000012-xx	20.8 x 8.7 x 11.4			
8P		Horizontal	KH1800031-xx	26.1 x 6.6 x 10.7			
		Vertical	KH2000013-xx	25.8 x 8.7 x 11.4			
10P		Horizontal	KH1800032-xx	31.1 x 6.6 x 10.7			
		Vertical	KH2300005-xx	30.8 x 8.7 x 11.4			

# PCB Slot HZT Series

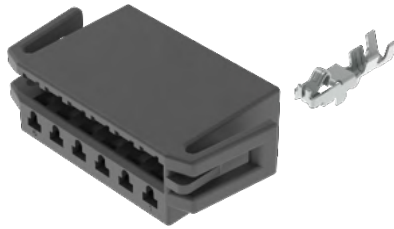
## SLOT TYPE

### Application

- ▶ Headlight
- ▶ Daytime Running Light
- ▶ LDM

### Characteristic

- ▶ Slot connector for Wire to Board
- ▶ Connecting to Metal PCB board directly
- ▶ One side contact of the PCB



- ▶ This is used only female connector without male.
- ▶ It is connecting the wire to board. (Slot Type)
- ▶ The terminal pitch is 2.5mm.
- ▶ Applicable PCB thickness is 1.6mm for Slot area
- ▶ Metal PCB available through one side contact
- ▶ Reliability Test Specifications : ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	10mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Female Housing	Terminal
PBT-GF10	Copper Alloy

### Terminal



Part No.	Dimension (mm)			PCB Thickness (mm)	Plating	Applicable Wire Range
	W	H	L			
KH2000087-21	2.0	2.7	9.6	1.6	Tin	0.3 ~ 0.5 mm <sup>2</sup>

# PCB Slot HZT Series

## SLOT TYPE

● Tin ● Au

Pin	Item	Type	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH2200104-xx	11.6 x 6.3 x 11.3
3P		Horizontal	KH2200105-xx	14.1 x 6.3 x 11.3
4P		Horizontal	KH2200106-xx	16.6 x 6.3 x 11.3
5P		Horizontal	KH2000080-xx	19.1 x 6.3 x 11.3
6P		Horizontal	KH2200107-xx	21.6 x 6.3 x 11.3
7P		Horizontal	KH2000081-xx	24.1 x 6.3 x 11.3
8P		Horizontal	KH2200108-xx	26.6 x 6.3 x 11.3

# FAKRA (Automotive System) Series

## SEMI-AUTOMATED TYPE

### Application

- ▶ Infotainment (Wireless Antenna, Instrument Cluster)
- ▶ Safety (Driver Assistance, Camera View, Emergency Braking)
- ▶ In-Vehicle Networks (Electronics Control Unit, Powertrain, Traffic Info)

### Characteristic

- ▶ Pre-assembled TPA for Easy handle the secondary lock
- ▶ Raw Material for high Temp. condition
- ▶ Good Contact



- ▶ Semi-Automated Assembly
- ▶ Components (Center Contact / Outer Contact / Ferrule)
- ▶ Applied TPA Type of Male/Female Connector : Pre-Assembled TPA
- ▶ Reliability Test Specification : ES96200-03

### Specifications

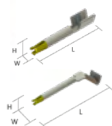
Frequency Range	Impedance	V.S.W.R	Insertion Loss	Temperature Range
DC ~ 6GHz	50Ω (±5Ω)	1 : 1.5	~ 2.0dB	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
LCP-GF35	PA66-GF10	Copper Alloy

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)	● Tin ● Au	
1P		Straight	KH2200126-20 (Coding - A)	7.7 x 12.4 x 25		KH2200129-20 (Coding - A)	9.5 x 14.4 x 15.9		
1P		Right-Angle	KH2200122-20 (Coding - G)	10.6 x 11.7 x 16.2		KH2200117-30 (Coding - G)	9.5 x 14.1 x 12.9		

### Terminal



Part No.	Dimension (mm)			Plating	Cable Type
	W	H	L		
KH2200111-30 (ST Female)	1.7	1.5	8.6	Tin Au	1.5DS, RG316D
KH2200110-30 (RA Female)	4.5	1.5	11.9	Tin Au	1.5DS, RG316D

# FAKRA (Automotive System) Series

## SEMI-AUTOMATED TYPE

Key Code	Female	Male	Color	Ral No.	Application
A			Jet Black	9005	Radio without phantom supply
B			Cream	9001	Radio with phantom supply
C			Signal Blue	5005	GPS: telematics or navigation
D			Claret Violet	4004	GSM Cellular phone
E			Leaf Green	6002	TV1
F			Nut Brown	8011	TV2
G			Blue Gray	7031	Remote control keyless entry
H			Heather Violet	4003	GPS: telematics or navigation
I			Beige	1001	Radio controlled parking heating
K			Curry	1027	Radio with IF
L			Carmine Red	3002	Not defined
M			Pastel Orange	2003	Not defined
N			Pastel Green	6019	Not defined
Z			Water Blue	5021	Universal Neutral Code



# Press Fit

## Application

- ▶ Solder free solution

## Characteristic

- ▶ EON(Eye Of Needle) shape



- ▶ Press fit Products meet all IEC60352-5 standards.
- ▶ This product is providing the Solder Free Solution for the harsh environment of vehicle
- ▶ This can be used to apply to Single Pin type or Housing of connector depending on the situation

## Specifications

Current Rating	Contact Resistance	Press-In Force	Press-Out Force
5A	0.5mΩ (Max.)	130N (Max.)	30N (Min.)

## Materials

Male Housing	Female Housing	Terminal
-	-	Copper Alloy

# Special & Customizing Products

Series	Item	Product	Part No.	Series	Item	Product	Part No.
030 SLD		030 SLD 5F ASSY	KH1200043-20	060 SLD		060 SLD 2F ASSY BR	KH1200001-40
		030 SLD 5M ASSY	KH1200046-20			060 SLD 2F ASSY GN	KH1200001-70
		030 Cavity Plug	KH1200049-10			060 SLD 3F ASSY BK	KH1200004-20
110 SLD		110 SLD 12F ASSY	KH2100002-20	312 SLD		312 SLD 1F ASSY	KH2100001-20
040		040 3M HDR ASSY (H)	KH1500011-20	050		050 PB SMT 3M ASSY (V)	KH1900076-20
						050 SLD SMT 3M ASSY (H)	KH1900080-20
025 HYB		025/060 40M HDR ASSY (V)	KH1400010-10	HSG		Grommet Inner Housing	KH1300014-10
		025/060 82M HDR ASSY (V)	KH1200041-10			Relay Holder Housing	KH1300019-10
		025/090 40M HDR ASSY (V)	KH1200037-10			Conn. Holder Housing	KH1300029-20
		025/110 10M HDR ASSY (H)	KH1600014-20			Fuse Puller Housing	KH1300028-30
Band Cable		Band Cable Ø6	KH1800116-xx	Shield Bracket		Shield Bracket Halogen for CK	KH1600042-20 KH1600044-20
		Band Cable Ø7	KH1800117-xx			Shield Bracket Halogen	KH2000053-20 KH2000055-20
		Connector Clip Ø7	KH2300013-20			Shield Bracket LED	KH1600018-20

# FFC Connector Series

## SMT TYPE

FFC : Flexible Flat Cable

### Application

- ▶ FFC to Board
- ▶ Headlight
- ▶ Rear Combination Light
- ▶ Daytime Running Light

### Characteristic

- ▶ Use FFC instead of Wire
- ▶ Light and Miniature
- ▶ Easy handle the mating and unmating
- ▶ Good contact



- ▶ This connector use a FFC instead of wire.
- ▶ It is connecting a FFC to board. (SMT Type)
- ▶ The terminal pitch is 1.25mm.
- ▶ It is not required the female terminal
- ▶ Reliability Test Specifications : ES91500-03, GMW3191

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
2A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 85°C

### Materials

Male Housing	Female Housing	Terminal
PPA-GF15	PA66-GF15	Copper Alloy

Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)	● Tin ● Au	
2P		Horizontal	KH1600024-xx	10.6 x 5.7 x 10.5		KH1600022-xx	9.0 x 5.0 x 9.0		
4P		Horizontal	KH1600028-xx	13.1 x 5.7 x 10.5		KH1600023-xx	10.5 x 5.0 x 9.0		

# FPC Slot Series

## WIRE TO FPC TYPE

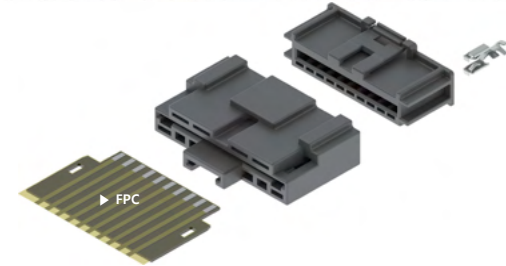
FPC : Flexible Printed Cable

### Application

- ▶ Headlight

### Characteristic

- ▶ Fork Pin + Cantilever Type TML
- ▶ Easy handle the mating and unmating
- ▶ Good Contact



- ▶ This connector connecting FPC to Wire.
- ▶ The terminal pitch of this connector is 2.5mm
- ▶ This connector can use at the vehicle environment.
- ▶ It is not required the male terminal
- ▶ Reliability Test Specifications : ES91500-03

### Specifications

Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
3A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

### Materials

Male Housing	Female Housing	Terminal
PA66-GF15	PA66-GF15	Copper Alloy

Pin	Item	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)	● Tin ● Au	
10P		KH1700166-xx	32.9 x 9.54 x 22.6		KH1700165-xx	30.7 x 8.82 x 11.7		

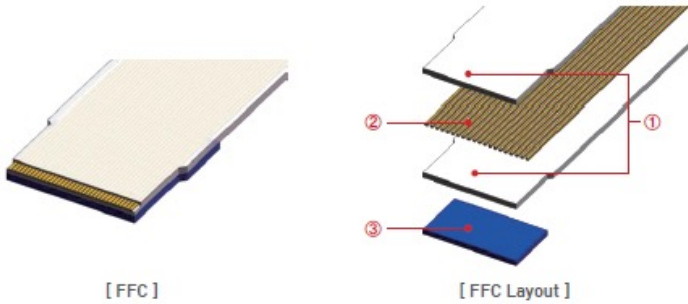
### Terminal



Part No.	Dimension (mm)			PCB Thickness (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1600036-21 (Female)	4.1	1.6	9.1	1.6	Tin	0.3 ~ 0.5 mm <sup>2</sup>
KH1600036-31 (Female)	4.1	1.6	9.1	1.6	Au	0.3 ~ 0.5 mm <sup>2</sup>

# FFC Structure








※ FFC: Flexible Flat Cable



[ FFC ]

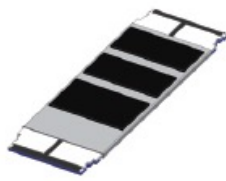
[ FFC Layout ]

## Structure Characteristic

NO.	Part	Composition	Characteristic	Remark
①	Insulation	 PET or PI	Temp. 80 - 125°C (PET)	Thermosetting & Thermoplastic
		 Primer		
		 Hot Melt	Temp. 130°C (PI)	
②	Conductor	 Copper	AWG 42 - 27 Current : 0.2A - 3.0A	Au / Ni Plating or Sn Plating
③	Supporting Tape	 PET	80 - 125°C	Color : Blue, Sky Blue Transparency
		 Primer		
		 Hot Melt		



[ EMI Shielding Type ]



[ Ground & EMI Shielding Type ]

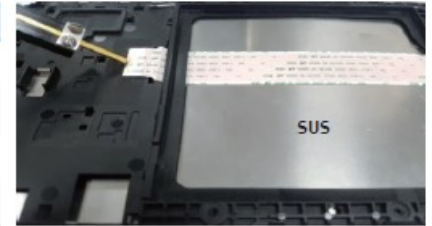


[ Impedance Matching Type ]

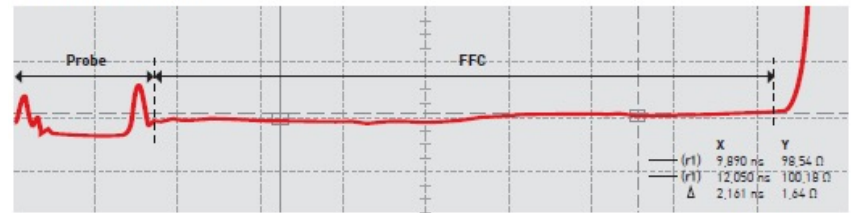
# Electrical Performance

## Performance

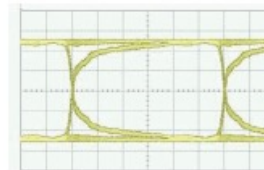
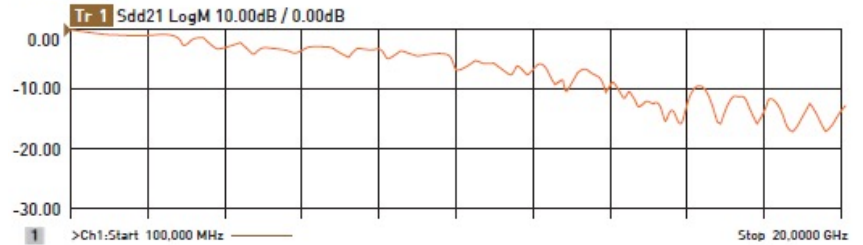
Part	Specification
Pin	8P - 96P
Type	Single & Double Side Matching (EMI Shielding)
Signal Characteristics	LVDS / UHS STD 100±10Ω (Customizing)



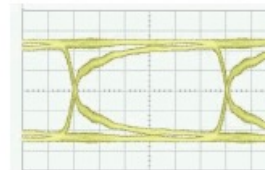
## ► Impedance Characteristics



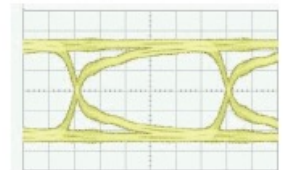
## ► Insertion Loss



[ 16 ]



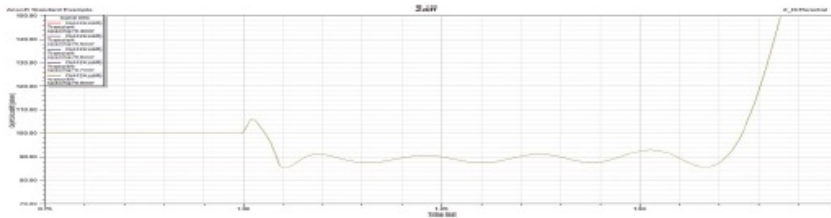
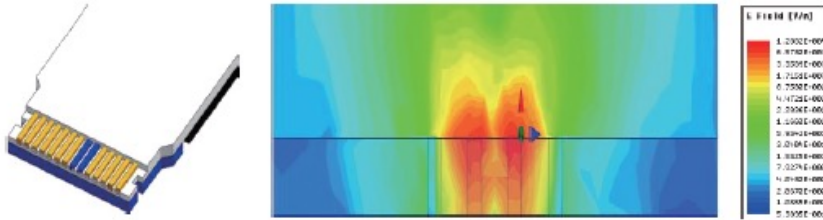
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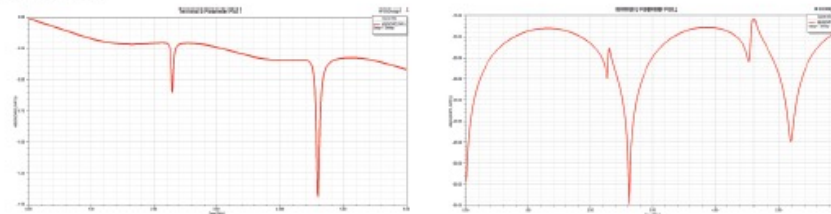
[ 36 ]

# Structured analysis and design technique (With HFSS)

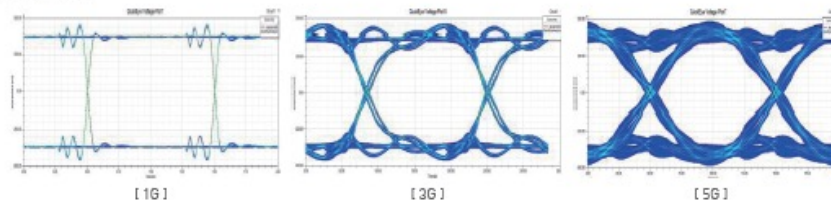
## ► Impedance Characteristics



## ► S-Parameter



## ► Eye Pattern



# Normal Signal Type

0.4mm Pitch / 0.5mm Pitch / 1.0mm Pitch / 1.25mm Pitch

## Applications

- Head Up Display (HUD)
- TV, Tablet PC
- D-Audio
- CD-Rom

## Characteristics

- Signal Transmission
- Flexibility
- Insulation
- Corrosion Resistance



- This is the most common specification among FFC.
- The conductor pitch of this product is 0.5mm / 1.0mm.
- It is possible to implement various contact method.

## Specifications

Pitch(mm)	Pin	Current Rating	Temperature	Insulation Resistance	Dielectric Strength
0.4	2P-99P	0.5A	80°C - 125°C	100MQ (Min.)	AC 250V
0.5					AC 300V
1.0	2P-49P	1.0 - 2.0A	80°C - 125°C	100MQ (Min.)	AC 500V
1.25					AC 1,000V

## Materials

Conductor	Insulation	Supporting Tape
Copper, Au/Ni or Tin Plated	Polyester / Hot Melt	Polyester / Hot Melt

Item	Pitch(mm)	Pin	Application	Item	Pitch(mm)	Pin	Application
	0.5	50P	Navigation		1.0	8P	Audio / HUD
	0.5	68P	TV		1.0	14P	Cluster



# EMI Shielding & LVDS Cable

0.5mm Pitch / 1.0mm Pitch

## Applications

- ▶ Navigation, D-Audio
- ▶ Head Up Display (HUD)
- ▶ TV
- ▶ Medical device

## Characteristics

- ▶ Impedance
- ▶ S-Parameter
- ▶ EMI Shielding
- ▶ Eye Pattern



- ▶ It is FPC with high speed transmission.
- ▶ The conductor pitch of this product is 0.5mm / 1.0mm
- ▶ High speed transmission & EMI shielding is possible.

## Specifications

Pitch(mm)	Pin	Current Rating	Temperature	Insulation Resistance	Dielectric Strength
0.5	2P-99P	0.5A	80°C - 125°C	100MΩ (Min.)	AC 300V
1.0	2P-49P	1.0A	80°C - 125°C	100MΩ (Min.)	AC 500V

## Materials

Conductor	Insulation	etc.
Copper, Au/Ni or Tin plated	Polyester	Fabric: Al-PET, Ag-PET

Item	Pitch(mm)	Pin	Application	Item	Pitch(mm)	Pin	Application
	0.5	40P	Navigation		0.5	51P	TV
	0.5	68P	D-Audio		1.0	30P	Audio / HUD

# Power Cable

1.25mm Pitch / 2.0mm Pitch / 3.3mm Pitch / 4.0mm Pitch

## Applications

- ▶ Door Scuff
- ▶ Cluster
- ▶ TV

## Characteristics

- ▶ Signal Transmission
- ▶ Insulation
- ▶ Flexibility
- ▶ Corrosion Resistance



- ▶ This product can be used as a power supply wire.
- ▶ This is FPC that meets the use of the vehicle environment

## Specifications

Pitch(mm)	Pin	Current Rating	Temperature	Insulation Resistance	Dielectric Strength
1.25	2P, 4P		80°C - 125°C	100MΩ (Min.)	AC 500V
2.0	10P	2A	80°C - 125°C	100MΩ (Min.)	AC 500V
3.3	8P	2A	80°C - 125°C	100MΩ (Min.)	AC 500V
4.0	2P	3A	80°C - 125°C	100MΩ (Min.)	AC 1,000V

## Materials

Conductor	Insulation	etc.
Copper, Au/Ni or Tin plated	Polyester	-

Item	Pitch(mm)	Pin	Application	Item	Pitch(mm)	Pin	Application
	2.0	10P	TV		1.25	4P	Lamp
	4.0	2P	Door Scuff		3.3	8P	Battery

# ETCS Card Socket

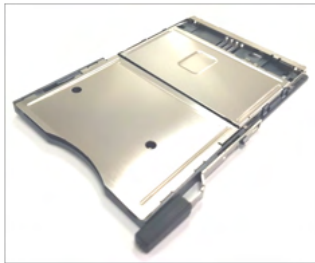
ETCS : Electronic Toll Collection System

### Application

- ▶ ECM for High-pass
- ▶ High-pass module

### Characteristic

- ▶ Preventive structure for deformation
- ▶ Preventive structure for increasing widely solder
- ▶ Stable contact structure for Switch & Pin



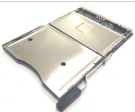
- ▶ Reliability Test Specifications : UJU-CS01
- ▶ The terminal pitch 2.54mm
- ▶ This socket can use at the vehicle environment.

## Specifications

Current Rating	Card insertion force	Button operation force	Durability	Temperature Range
1A	1.02kgf Max	1.02kgf Max	100,000Cycles	-30°C~85°C

## Materials

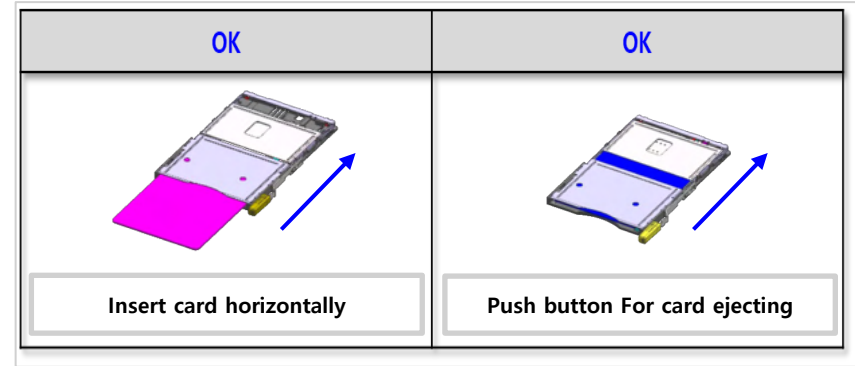
Materials	Press Item	Spring
LCP / PA46	Cooper Alloy / Stainless steel	Stainless steel

Pin	Item	PN.	Size (mm) (W x H x L)
6P		KH2000018-20	91.40 x 4.75 x 60.00

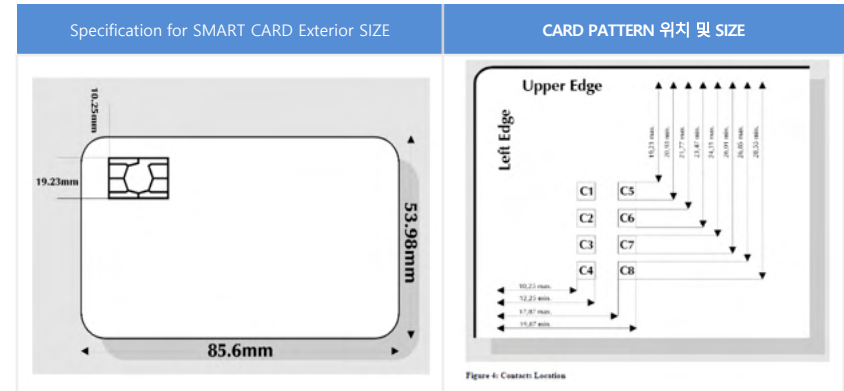
# Product description

ETCS : Electronic Toll Collection System

- ▶ The excessive external force added to the connector can make serious injury or malfunction of the connector. Please be careful not to make deformation of the connector when you handle it.
- ▶ Please insert the card slowly. Too quick movement can cause serious damage on the entering part of connector and the card.



- ▶ Design considering the smallest card size

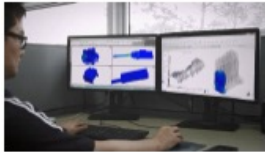


[See the Smartcard Standard ISO7816-2]

- ▶ The connector is only for using the smart card. Please do not insert any other cards.
- ▶ In card mating condition, please do not push the card hardly with excessive force.

# Cover all process of product development

## Product Development Process



Design



Development



Validation

## Reliability Laboratory

▶ 100% Test Evaluation ability for Connector Specification



Combined Environment Test Lab.



Durability Environment Test Lab.



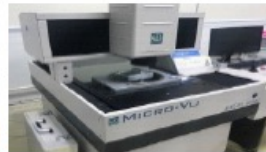
Durability Environment Test Lab.



Chemistry Test Lab.



Material Test & Analysis Lab



Accurate Measurement Lab.

## Acquisition plan of reliability



# Certificate

## IATF 16949 : 2021



## ISO 14001:2004



## Hyundai-Kia Motors SQ



WORLD CLASS CONNECTOR COMPANY

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