

WORLD CLASS CONNECTOR COMPANY
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UJU ELECTRONICS

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UJU ELECTRONICS
WORLD CLASS CONNECTOR COMPANY

Automotive Connector

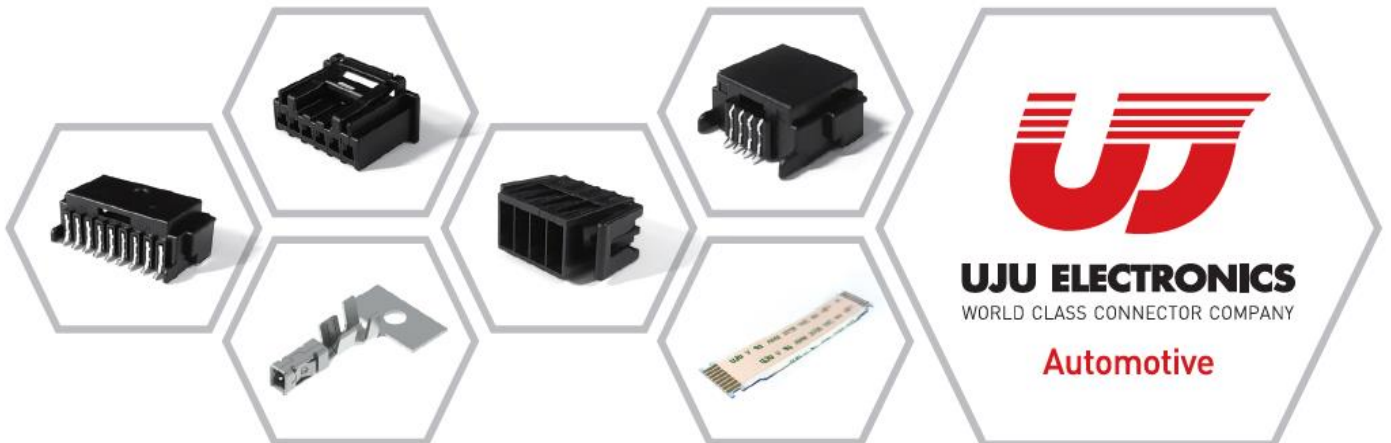
GROWTH COMPANY MAKING the FUTURE

VISION

World Class Maker of Connectors & Electronic Components

MISSION

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



History

Approved HKMC supplier (020D / 025 D Series)	2020	Approved Magneti Marelli supplier (020 D / 020 D C Series)
	2019	
Supplied PCB SLOT Series Supplied 015 Series	2018	Achieved IATF 16949:2016
	2017	
	2015	Supplied 020 S Series Supplied 025 Series
Established Factory at Vietnam	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,
gyeonggi-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 :
Yuhuangng Gongyeyuan,
Xiazhuangjeado, Chengyangqu,
Qingdao Shandong China

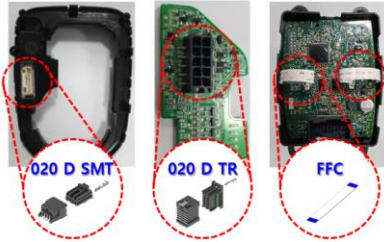


ShenZhen & Taiwan Sales Office

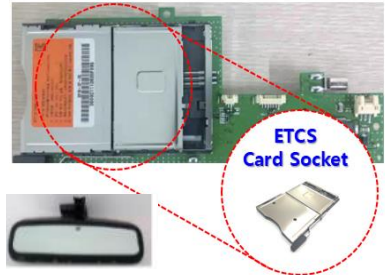
Address(Shenzhen) :
Rm 1508, ChuangJian Building, No.6023
Shennan Blvd, Shenzhen, Guangdong, China
Address(Taiwan) :
3F-5, No. 18, Lane 48, XingShan Road, NeiHu
District, Taipei City, 11469, Taiwan.

UJU Products Portfolio

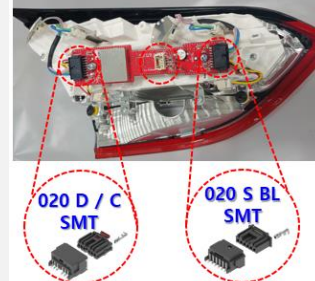
INDICATOR CONTROL PCB



ROOM MIRROR (ETCS)



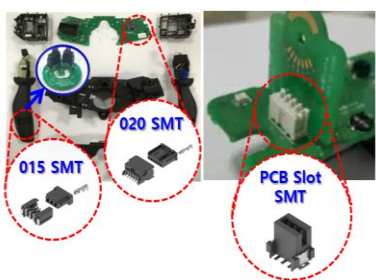
LED REAR LIGHT



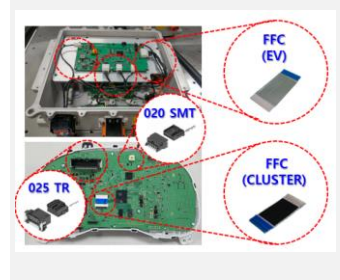
LED HEAD LIGHT



SWITCH



INVERTER CLUSTER



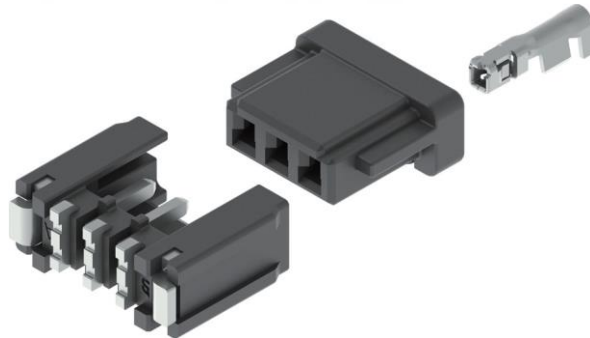
015(0.40mm) Series SMT TYPE

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

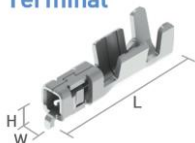
Male Housing	Female Housing	Terminal
PA9T-GF33	PA66-GF30	Copper Alloy

● 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	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

● Tin ● Au

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 ²

020 S BL(0.50mm) Series SMT TYPE

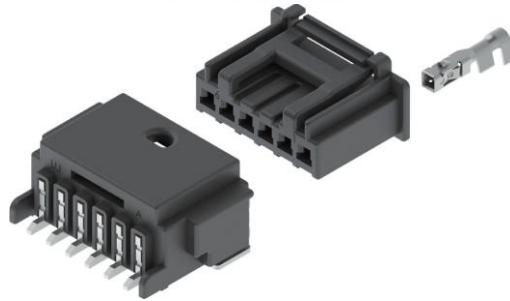
S : Small
BL : Blistering Less

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

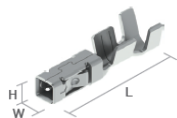
Specifications

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
































● Tin ● Au

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 ²
KH1400004-31 (Female)	1.5	1.9	7.8	0.5	Au	0.22 ~ 0.5 mm ²

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	KH1700018-xx	24.4 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

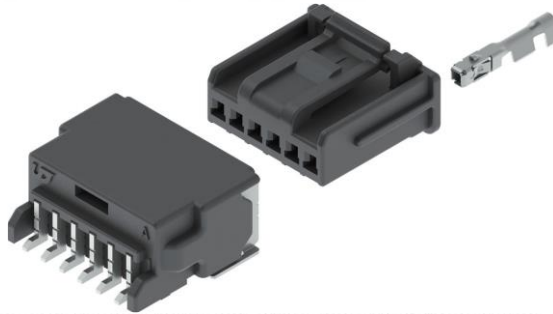
020(0.50mm) Series SMT TYPE

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

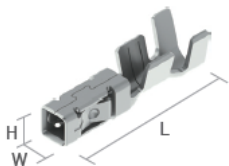
Materials

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

● Tin ● Au


















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 ²
KH1200030-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.5 mm ²
KH1200030-31 (Female)	1.5	1.6	10.2	0.5	Au	0.3~ 0.35 mm ²

Terminal



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 13.2		KH1400003-xx	19.9 x 7.0 x 12.4

020 D(0.50mm) Series SMT TYPE

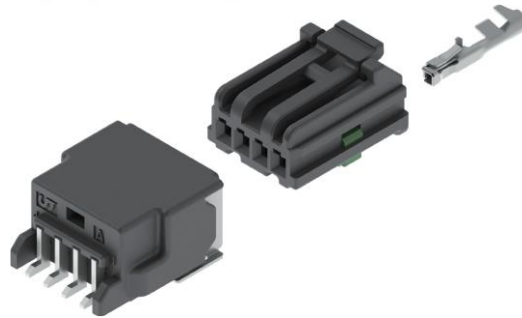
D : Double Lock

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

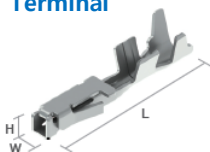
Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

Materials

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

● 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 ²
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm ²

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	8.0 x 7.2 x 13.2		KH1700098-xx	5.9 x 7.3 x 12.6
3P		Horizontal	KH1700112-xx	10 x 7.2 x 13.2		KH1700101-xx	7.9 x 7.3 x 12.6
		Vertical	KH1800081-xx	10.5 x 8.5 x 12.2			
4P		Horizontal	KH1700114-xx	12 x 7.2 x 13.2		KH1700104-xx	9.9 x 7.3 x 12.6
		Vertical	KH1800083-xx	12.5 x 8.5 x 12.2			
5P		Horizontal	KH1800097-xx	14 x 7.2 x 13.2		KH1800066-xx	11.9 x 7.3 x 12.6
		Vertical	KH1800085-xx	14.5 x 8.5 x 12.2			
6P		Horizontal	KH1700116-xx	16 x 7.2 x 13.2		KH1700107-xx	13.9 x 7.3 x 12.6
		Vertical	KH1800087-xx	16.5 x 8.5 x 12.2			
7P		Horizontal	KH1800099-xx	18 x 7.2 x 13.2		KH1800069-xx	15.9 x 7.3 x 12.6
		Vertical	KH1800089-xx	18.5 x 8.5 x 12.2			
8P		Horizontal	KH1800101-xx	20 x 7.2 x 13.2		KH1800072-xx	17.9 x 7.3 x 12.6
		Vertical	KH1800091-xx	20.5 x 8.5 x 12.2			
10P		Horizontal	KH1800103-xx	22 x 7.2 x 13.2		KH1800025-xx	21.9 x 7.3 x 12.6
		Vertical	KH1800028-xx	24.5 x 8.5 x 12.2			
12P		Vertical	KH1800093-xx	28.5 x 8.5 x 12.2		KH1800075-xx	25.9 x 7.3 x 12.6
15P		Vertical	KH1800095-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

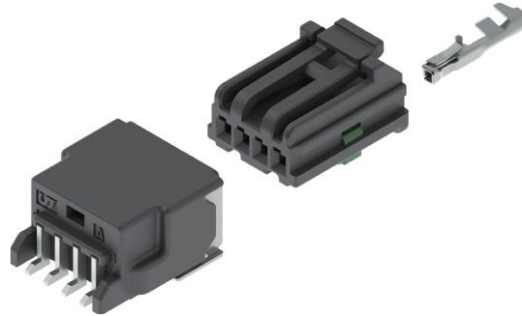
D : Double Lock

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

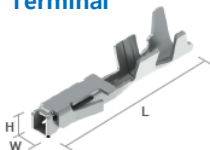
Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

Materials

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

● 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 ²
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm ²

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	8.0 x 7.2 x 13.2		KH1710098-xx	5.9 x 7.3 x 12.6
3P		Horizontal	KH1710112-xx	10 x 7.2 x 13.2		KH1710101-xx	7.9 x 7.3 x 12.6
		Vertical	KH1810081-xx	10.5 x 8.5 x 12.2			
4P		Horizontal	KH1710114-xx	12 x 7.2 x 13.2		KH1710104-xx	9.9 x 7.3 x 12.6
		Vertical	KH1810083-xx	12.5 x 8.5 x 12.2			
5P		Horizontal	KH1810097-xx	14 x 7.2 x 13.2		KH1810066-xx	11.9 x 7.3 x 12.6
		Vertical	KH1810085-xx	14.5 x 8.5 x 12.2			
6P		Horizontal	KH1710116-xx	16 x 7.2 x 13.2		KH1710107-xx	13.9 x 7.3 x 12.6
		Vertical	KH1810087-xx	16.5 x 8.5 x 12.2			
7P		Horizontal	KH1810099-xx	18 x 7.2 x 13.2		KH1810069-xx	15.9 x 7.3 x 12.6
		Vertical	KH1810089-xx	18.5 x 8.5 x 12.2			
8P		Horizontal	KH1810101-xx	20 x 7.2 x 13.2		KH1810072-xx	17.9 x 7.3 x 12.6
		Vertical	KH1810091-xx	20.5 x 8.5 x 12.2			
10P		Horizontal	KH1810103-xx	22 x 7.2 x 13.2		KH1810025-xx	21.9 x 7.3 x 12.6
		Vertical	KH1810028-xx	24.5 x 8.5 x 12.2			
12P		Vertical	KH1810093-xx	28.5 x 8.5 x 12.2		KH1810075-xx	25.9 x 7.3 x 12.6
15P		Vertical	KH1810095-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

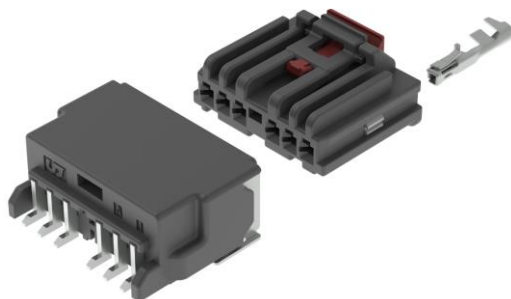
D : Double Lock
C : CPA (Connector Position Assurance)

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

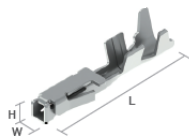
Current Rating	Contact Resistance	Insulation Resistance	Dielectric strength	Temperature Range
5A	30mΩ (Max.)	100MΩ (Min.)	AC 1kV	-40°C ~ 125°C

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 ²
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm ²

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	KH1910035-xx	10 x 7.2 x 13.2		KH1910009-xx	7.9 x 7.72 x 15.2
		Vertical	KH1910056-xx	10.6 x 8.5 x 12.2			
3P		Horizontal	KH1910036-xx	12 x 7.2 x 13.2		KH1910012-xx	9.9 x 7.72 x 15.2
		Vertical	KH1910057-xx	12.6 x 8.5 x 12.2			
4P		Horizontal	KH1910037-xx	14 x 7.2 x 13.2		KH1910015-xx	11.9 x 7.72 x 15.2
		Vertical	KH1910058-xx	14.6 x 8.5 x 12.2			
5P		Horizontal	KH1910038-xx	16 x 7.2 x 13.2		KH1910017-xx	13.9 x 7.72 x 15.2
		Vertical	KH1910059-xx	16.6 x 8.5 x 12.2			
6P		Horizontal	KH1910039-xx	18 x 7.2 x 13.2		KH1910019-xx	15.9 x 7.72 x 15.2
		Vertical	KH1910060-xx	18.6 x 8.5 x 12.2			
7P		Horizontal	KH1910040-xx	20 x 7.2 x 13.2		KH1910021-xx	17.9 x 7.72 x 15.2
		Vertical	KH1910061-xx	20.6 x 8.5 x 12.2			
9P		Horizontal	KH1910041-xx	24 x 7.2 x 13.2		KH1910023-xx	21.9 x 7.72 x 15.2
		Vertical	KH1910062-xx	24.6 x 8.5 x 12.2			

020 D TR(0.50mm) Series SMT TYPE

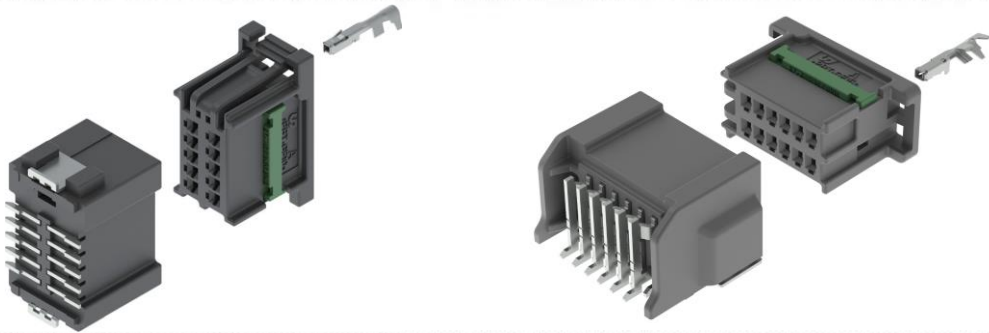
*D : Double Lock
TR : Two Row*

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

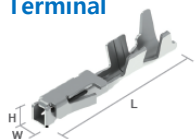
Materials

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

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	19.55 x 11.8 x 12.1		KH1800004-xx	19.5 x 9.6 x 12.6
12P		Horizontal	KH1900050-xx	21.15 x 11.95 x 16		KH1900044-xx	21.5 x 9.6 x 12.6
14P		Horizontal	KH1900054-xx	23.15 x 11.95 x 16		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 ²
KH1700007-22 (Female)	1.5	1.6	10.2	0.5	Tin	0.3 ~ 0.5 mm ²

020(0.50mm) Sealed Series WIRE TO WIRE TYPE

Application

- ▶ Vehicle Camera
- ▶ Door Handle

Characteristic

- ▶ Compact Design & Good contact
- ▶ Robust designed water resistant feature
- ▶ IP69K for waterproof performance is satisfied



- ▶ The applied blade size is 0.5mm(Width)
- ▶ Quality enhancement in waterproof aspect
- ▶ Robust designed water resistant feature
- ▶ This product is satisfied with the IP69K for waterproof performance
- ▶ **Reliability Test Specification : SES E 060-07**

Specifications

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

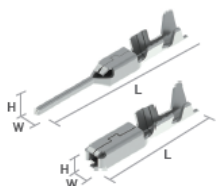
Materials

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

Pin	Item	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		KH1700120-20	12.17 x 9.25 x 23.5		KH1700118-20	10.47 x 10.35 x 14.9
4P		KH1600063-20	11.8 x 11.05 x 23.5		KH1600061-20	10.2 x 12.15 x 14.9
6P		KH1700124-20	12.4 x 13 x 23.5		KH1700122-20	10.8 x 14.1 x 14.9

● Tin ● Au

Terminal



Part No.	Dimension (mm)			Tab Width (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1600060-21 (Male)	1.5	1.4	13.4	0.4	Tin	0.3 ~ 0.35 mm ²
KH1600059-21 (Female)	1.5	1.4	8.35	0.4	Tin	0.3 ~ 0.35 mm ²

025 D(0.64mm) Series SMT TYPE

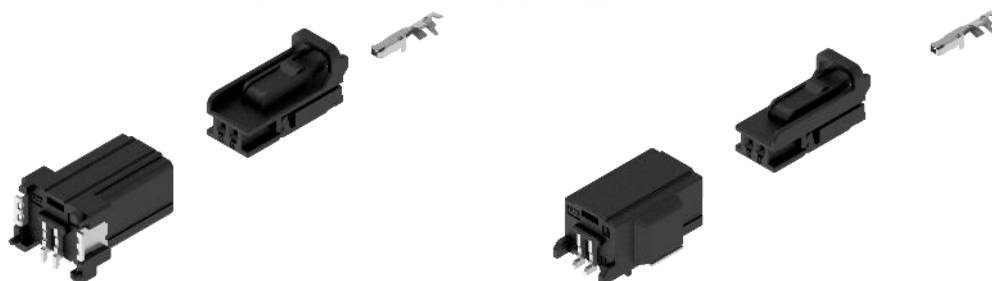
D : Double Lock

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 ²

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

▶ KH1200034-xx (Tin Plated)

Suitable Female Terminal

▶ KH1200031-xx (Tin Plated)

025 II(0.64mm) Series

SMT & WIRE TO WIRE TYPE

Application

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

Characteristic

- ▶ Compact Design & Good contact
- ▶ Pre-Assembled TPA for secondary lock
- ▶ 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
- ▶ 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

Terminal

● Tin ● Au














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

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 Male	KH2000065-xx Ongoing	15.8 x 16.2 x 20.3		KH2000059-xx	9.1 x 15.5 x 18.1
8P		Vertical	KH2000085-xx	18.0 x 16.2 x 20.3		KH2000082-xx	11.3 x 15.5 x 18.1
10P		Male	KH2000025-xx	16.1 x 16.2 x 33.0		KH2000022-xx	13.5 x 15.2 x 18.1
12P		Horizontal Vertical	KH2100062-xx KH2000071-xx	22.4 x 16.2 x 20.3		KH2000062-xx	15.7 x 15.5 x 18.1
16P		Male	KH2000091-xx	22.7 x 16.2 x 33.0		KH2000088-xx	20.1 x 15.2 x 18.1
24P		Male	Ongoing	31.5 x 16.2 x 33.0		Ongoing	28.9 x 15.2 x 18.1
28P		Male	Ongoing	35.9 x 16.2 x 33.0		Ongoing	33.3 x 15.2 x 18.1

025 TR(0.64mm) Series SMT TYPE

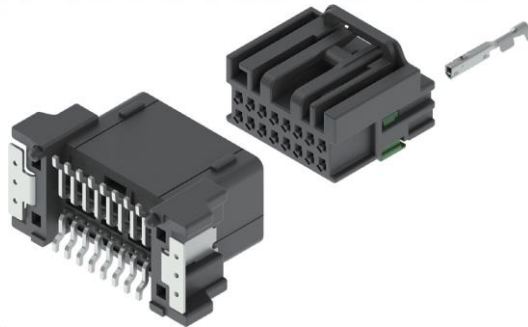
TR : Two Row

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

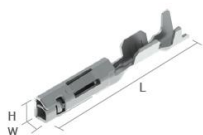
Male Housing	Female Housing	Terminal
PA9T-GF33	PBT-GF10	Copper Alloy

● Tin ● Au

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

● Tin ● Au

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 ²
KH1200031-21 (Female)	1.5	1.9	14.2	0.64	Tin	0.3 ~ 0.5 mm ²

025 BTP(0.64mm) Series SMT TYPE

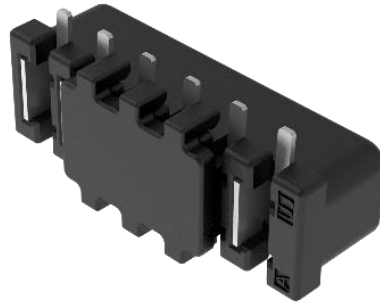
BTP : Board to Pin

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

● Tin ● Au

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

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)
8P		KH2000039-20	20.7 x 19.5 x 37.1		KH2000036-20	23.5 x 20.6 x 22.2

Terminal

	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 ²
	KH2000034-21 (Female)	1.5	2.0	15.2	0.64	Tin	0.3 ~ 0.5 mm ²
	KH2000035-20 (Male)	1.5	1.8	22.2	0.64	Tin	0.22 mm ²
	KH2000034-20 (Female)	1.5	2.0	15.2	0.64	Tin	0.22 mm ²

Seal

	Part No.	Dimension (mm)			Color	Insulation Range	Applicable Wire Range
		W	H	L			
	KD0000002 (Wire Seal S)	Ø3	Ø3	6.4	Green	Ø0.9	0.22 mm ²
	KD0000004 (Wire Seal M)	Ø3	Ø3	6.4	Brown	Ø1.4	0.3 mm ²
	KD0000005 (Wire Seal L)	Ø2.9	Ø2.9	6.4	Orange	Ø1.6~Ø1.7	0.5 mm ²
	KD0000003 (Dummy Seal)	Ø3.6	Ø3.6	7.3	Blue	-	-

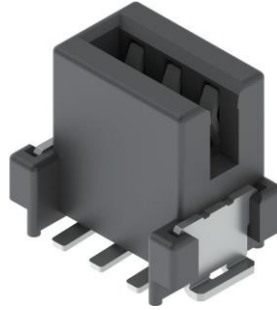
PCB Slot Series SMT TYPE

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**


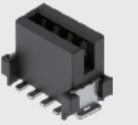
Specifications

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

Materials

Female Housing	Terminal
PA9T-GF30	Copper Alloy

● Tin ● Au

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

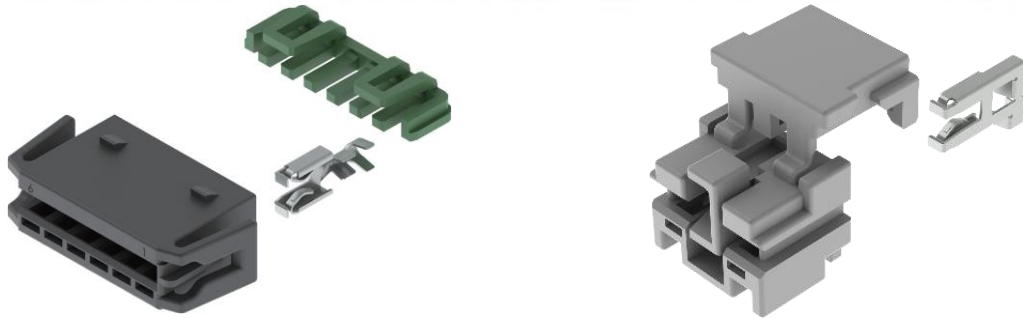
PCB Slot Series SLOT TYPE

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

● Tin ● Au

















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 ²
KH2000008-xx (Vertical)	4.1	1.6	9.2	1.6	Tin	0.3 ~ 0.5 mm ²

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 10.8			
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 10.8			
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 10.8			
5P		Horizontal	KH1900091-xx	18.6 x 6.0 x 10.7			
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 10.8			
8P		Horizontal	KH1800031-xx	26.1 x 6.6 x 10.7			
		Vertical	KH2000013-xx	25.8 x 8.7 x 10.8			
10P		Horizontal	KH1800032-xx	31.1 x 6.6 x 10.7			

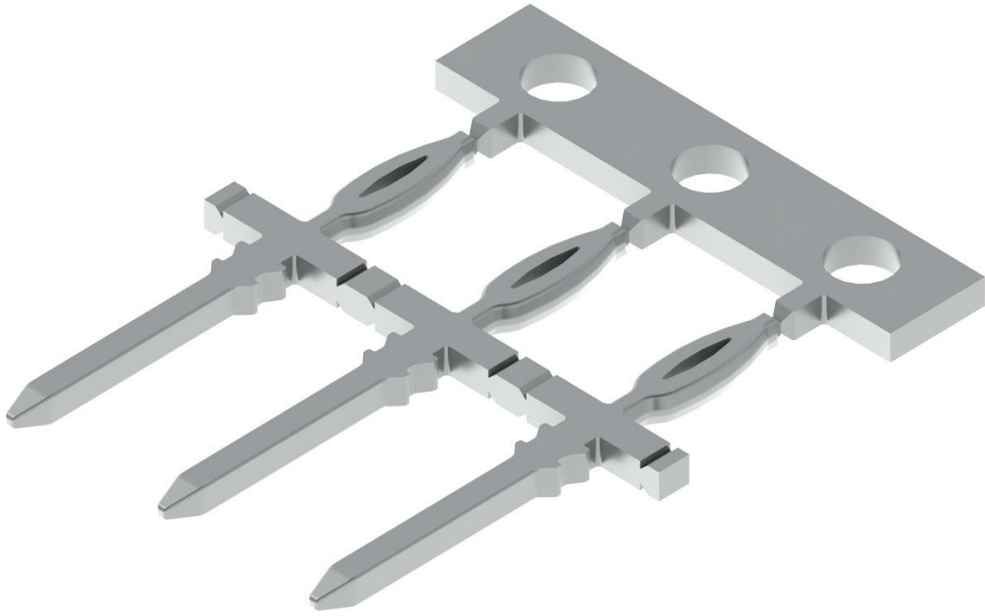
Press Fit

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







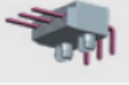
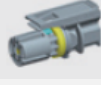
















Specifications

Current Rating	Contact Resistance	Press-In Force	Press-Out Force
5A	0.5m Ω (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
040		040 3M HDR ASSY (H)	KH1500011-20	312 SLD		312 SLD 1F ASSY	KH2100001-20
110 SLD		110 SLD 12F ASSY	KH2100002-20	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		Relay Holder Housing	KH1300019-10
		025/060 82M HDR ASSY (V)	KH1200041-10			Grommet Inner Housing	KH1300014-10
		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
						Shield Bracket LED	KH1600018-20

FFC Connector Series SMT TYPE

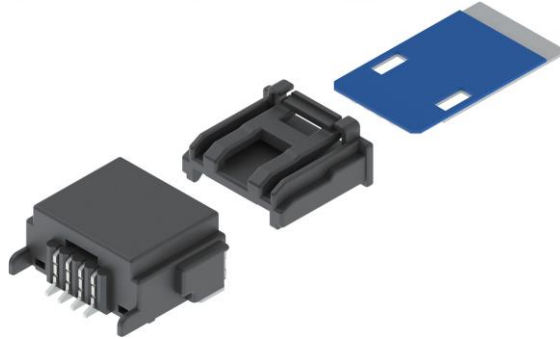
FFC : Flexible Flat Cable

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

● Tin ● Au

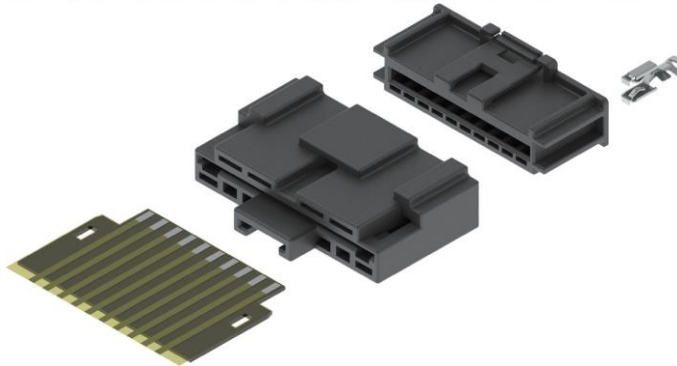
Pin	Item	Type	Male PN.	Size (mm) (W x H x L)	Item	Female PN.	Size (mm) (W x H x L)
2P		Horizontal	KH1600024-xx	10.6 x 5.7 x 10.5		KH1600022-xx	9.0 x 5.0 x 9.0
4P		Horizontal	KH1600028-xx	13.1 x 5.7 x 10.5		KH1600023-xx	10.5 x 5.0 x 9.0

FFC Connector Series WIRE TO FPC TYPE

FFC : Flexible Flat 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

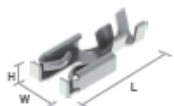
Male Housing	Female Housing	Terminal
PA66-GF15	PA66-GF15	Copper Alloy

● Tin ● Au

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

● Tin ● Au

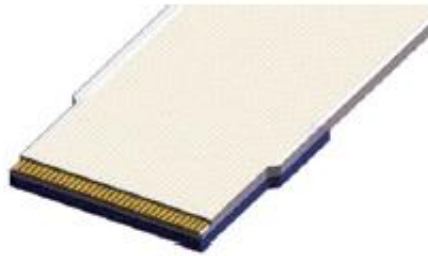
Terminal



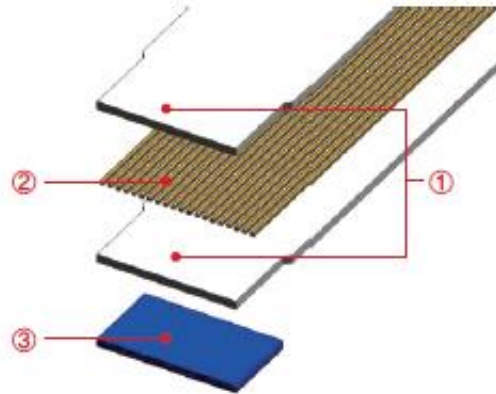
Part No.	Dimension (mm)			PCB Thickness (mm)	Plating	Applicable Wire Range
	W	H	L			
KH1600036-21 (Female)	4.1	1.6	9.1	1.6	Tin	0.3 ~ 0.5 mm ²
KH1600036-31 (Female)	4.1	1.6	9.1	1.6	Au	0.3 ~ 0.5 mm ²

FFC Structure

FFC : Flexible Flat Cable










[FFC]



[FFC Layout]

Structure Characteristic

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



[EMI Shielding Type]



[Ground & EMI Shielding Type]



[Impedance Matching Type]

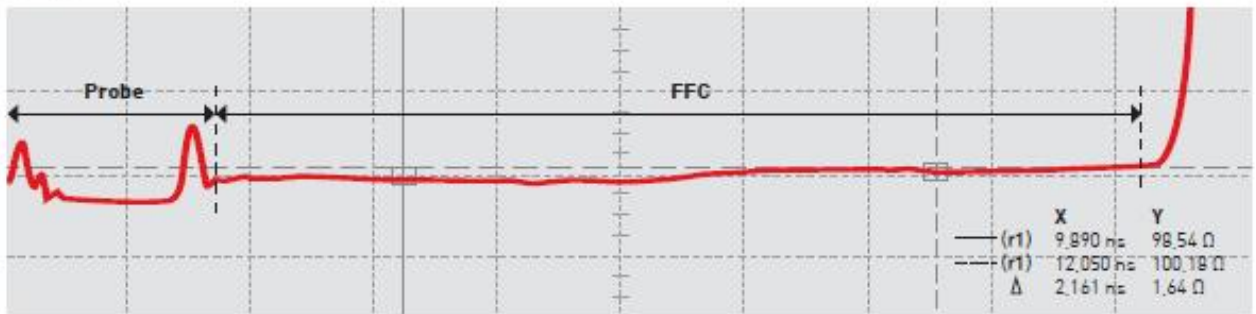
Electrical Performance

Performance

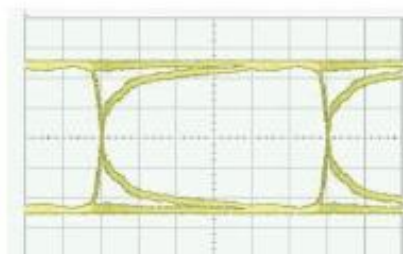
Part	Specification
Pin	8P - 96P
Type	Single & Double Side Matching (EMI Shielding)
Signal Characteristics	LVDS / UHS STD 100±10Ω (Customizing)



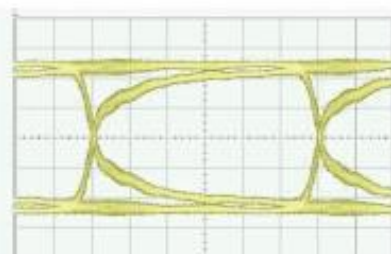
► Impedance Characteristics



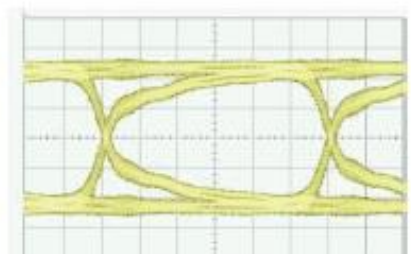
► Insertion Loss



[16]



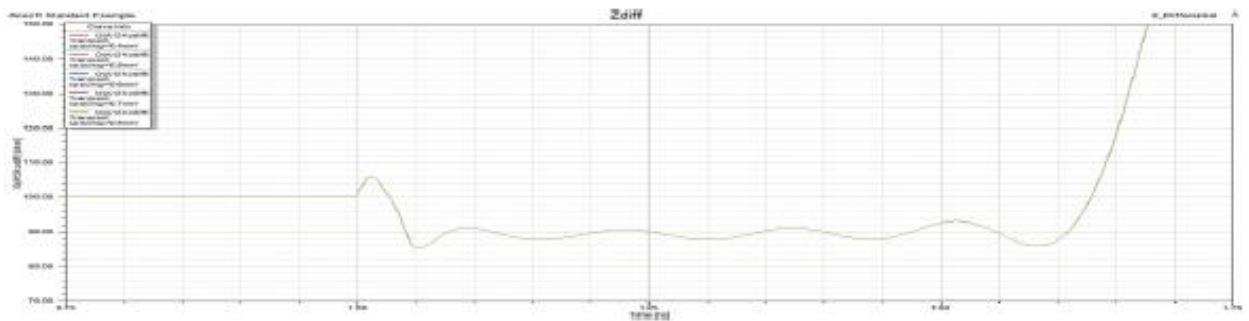
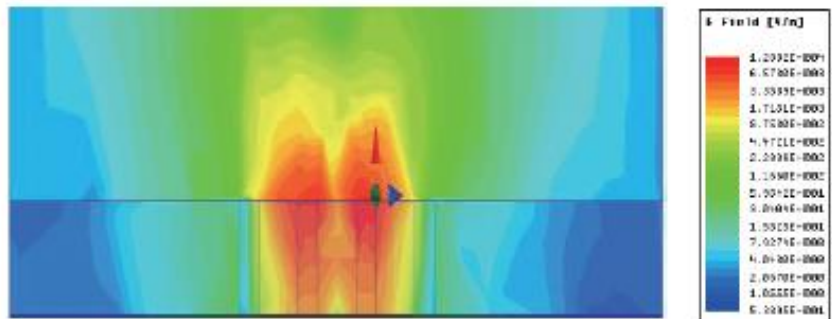
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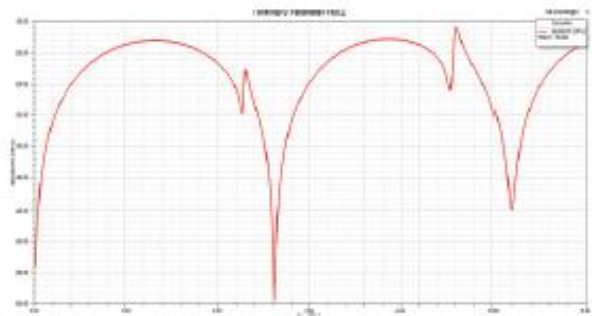
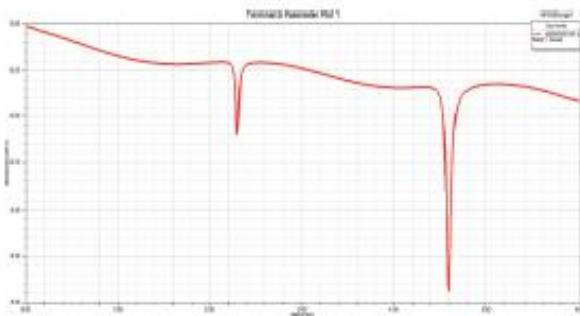
[36]

Structured analysis and design technique (With HFSS)

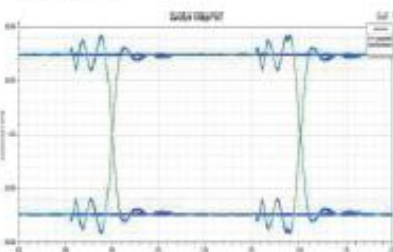
► Impedance Characteristics



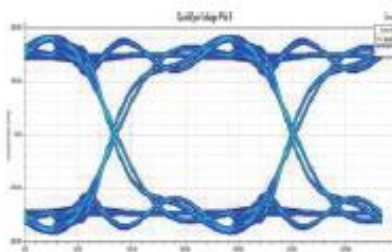
► S-Parameter



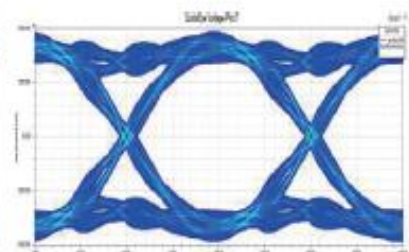
► Eye Pattern



[1G]



[3G]



[5G]

Normal Signal Type

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

Application

- ▶ Head Up Display (UHD)
- ▶ D-Audio
- ▶ TV, Tablet PC
- ▶ CD-ROM

Characteristic

- ▶ Signal Transmission
- ▶ Insulation
- ▶ Flexibility
- ▶ 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	100MΩ (Min.)	AC 250V
0.5					AC 300V
1.0	2P-49P	1.0 - 2.0A	80°C - 125°C	100MΩ (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

Application

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

Characteristic

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



- ▶ It is FFC 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℃ ~ 125℃	100MΩ (Min.)	AC 300V
1.0	2P~49P	1.0A	80℃ ~ 125℃	100MΩ (Min.)	AC 500V

Materials

Conductor	Insulation	etc.
Coppery, 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

Application

- ▶ Door Scuff
- ▶ Cluster

▶ TV

Characteristic

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



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

Specifications

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

Materials

Conductor	Insulation	etc.
Coppery, 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

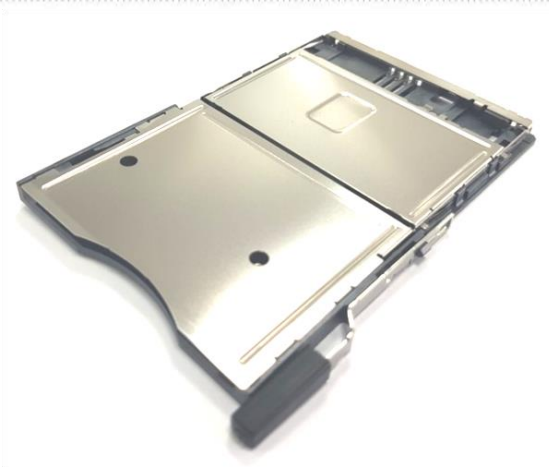
ETCS : Electronic Toll Collection System

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

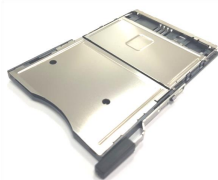
Current Rating	Card insertion force	Button operation force	Durability	Temperature Range
1A	1.02kgf Max	1.02kgf Max	100,000Cycles	-30°C~85°C

Materials

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

Pin	Item	PN.	Size (mm) (W x H x L)
-----	------	-----	--------------------------

6P



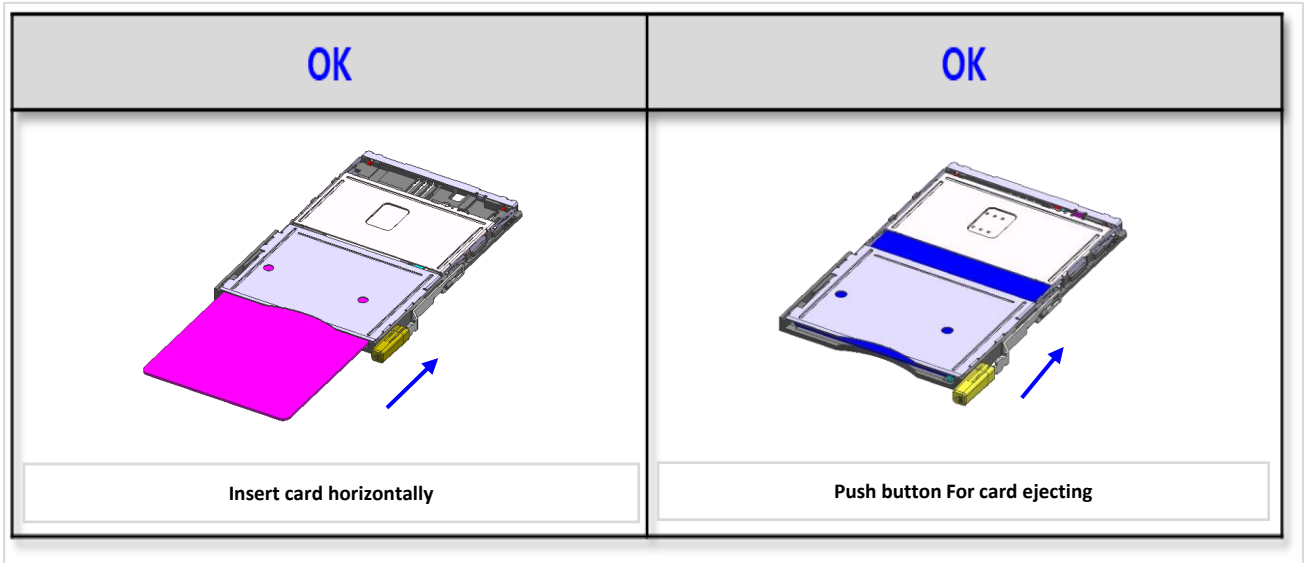
KH2000018-20

91.40 x 4.75 x 60.00

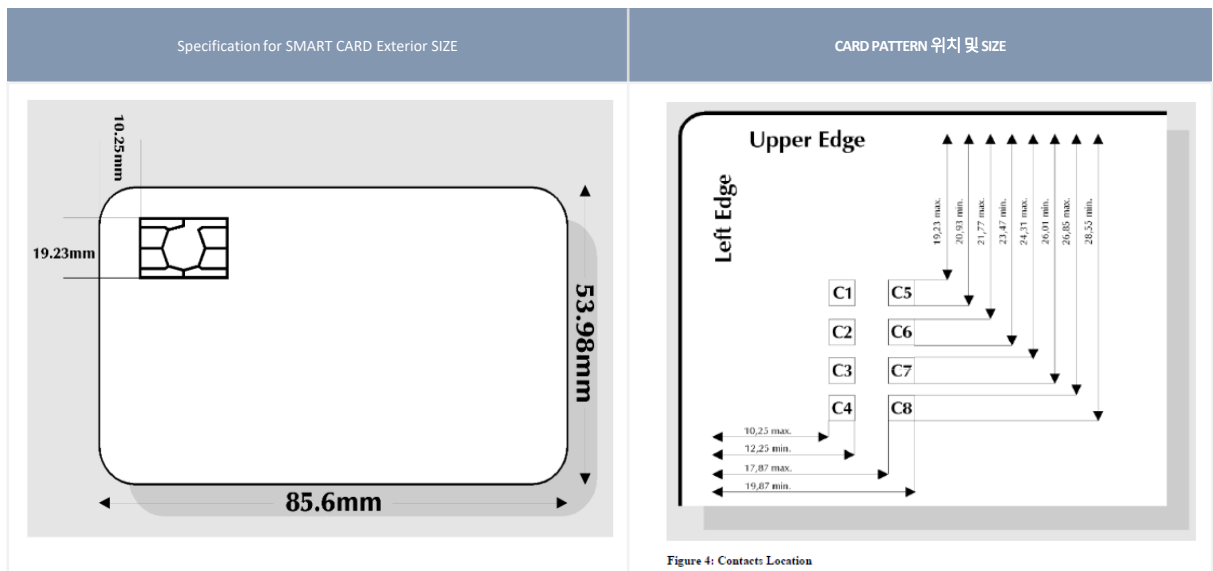
Product description

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

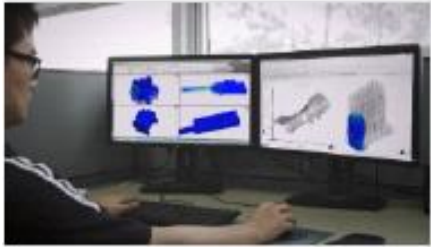


[See the Smartcard Standard ISO7816-2]

- ▶ 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.



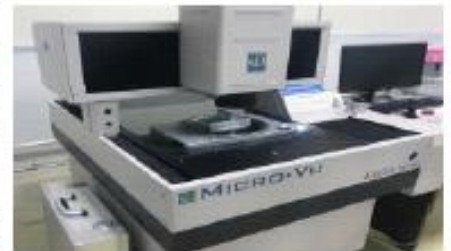
Durability Environment Test Lab.



Chemistry Test Lab.



Material Test & Analysis Lab



Accurate Measurement Lab.

Acquisition plan of reliability



Certificate

IATF 16949 : 2021

TUV - 210322
Application Completion Confirmation



Company : UJU Electronics Co., Ltd
 Address : 61, Chonok-ro 532beon-gil, Yanggam-myeon, Hwasong-si / 342,byeolmangro, Danwon-gu,Ansan-si
 Certificate body : TUV HESSEN

The above company is confirmed that the certificate is being issued in consideration of IATF 16949 certificate audit based on IATF 16949 revision5 edition from our certificate body

22. Mar. 2021

TUV HESSEN CO., LTD. 

ISO 14001:2004

bsi.
Certificate of Registration



ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2004

This is to certify that
 UJU Electronics Co., Ltd.
 61, Chonok-ro 532beon-gil
 Yanggam-myeon
 Hwasong-si, Gyeonggi-do
 44821
 Republic of Korea

Has a Certificate for **EMS 24433**
 2021 year ISO 14001 Environmental Management System which complies with the requirements of ISO 14001:2004 for the following scope:

The design, development and manufacture of connectors and flexible flat cables.

The award is held by **Ms. Young-hyeon of Compliance & Risk - Juy Park**

On 22nd March 2021

BSI Registration No: 02790207
 Lead Number: 0261-02790207
 BSI Registration No: 02790207
 Entry No: 14990006
 Page: 1 of 2

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SQ 인증서

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 대표자명 : 노영희 인증등급 : A
 사업과번호 : 1248160313 인증종류 : A
 업종코드 : #498Y 사업장코드 : #498Y1
 회사주소 : 경기도 홍성시 양암면 신항리 100-14번지

HYUNDAI
협력사 품질평가 규정에 의거
상기인 같이 SQ(협력사 품질보장)
요구사항에 적합함을 인증합니다.

인증일자 : 2021년 11월 19일
 유효일자 : 2025년 12월 31일 까지
 인증평가일시 : 2017.09.08 [SQ사무실(홍성)]

• 부 호 : (주)에스엠에프
 • 주 문 : 현대-기아자동차

WORLD CLASS CONNECTOR COMPANY

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