

MHF® 4

低背设计，组合高度最大1.2 mm，最适用于空间有限的设计

Product Specifications:

Mated Height (mm max.)	1.2		
Rece. SMT Size (mm)	2.0 x 2.0		
Applicable Frequency	DC ~ 9 GHz		
Characteristic Impedance	50 ohm		
VSWR (L=100 mm)	Connector	PLUG	RECEPTACLE
	DC ~ 3 GHz	1.3 max.	1.3 max.
	3 ~ 6 GHz	1.5 max.	1.4 max.
	6 ~ 9 GHz	2.0 max.	1.55 max.

Applicable Cable Size:

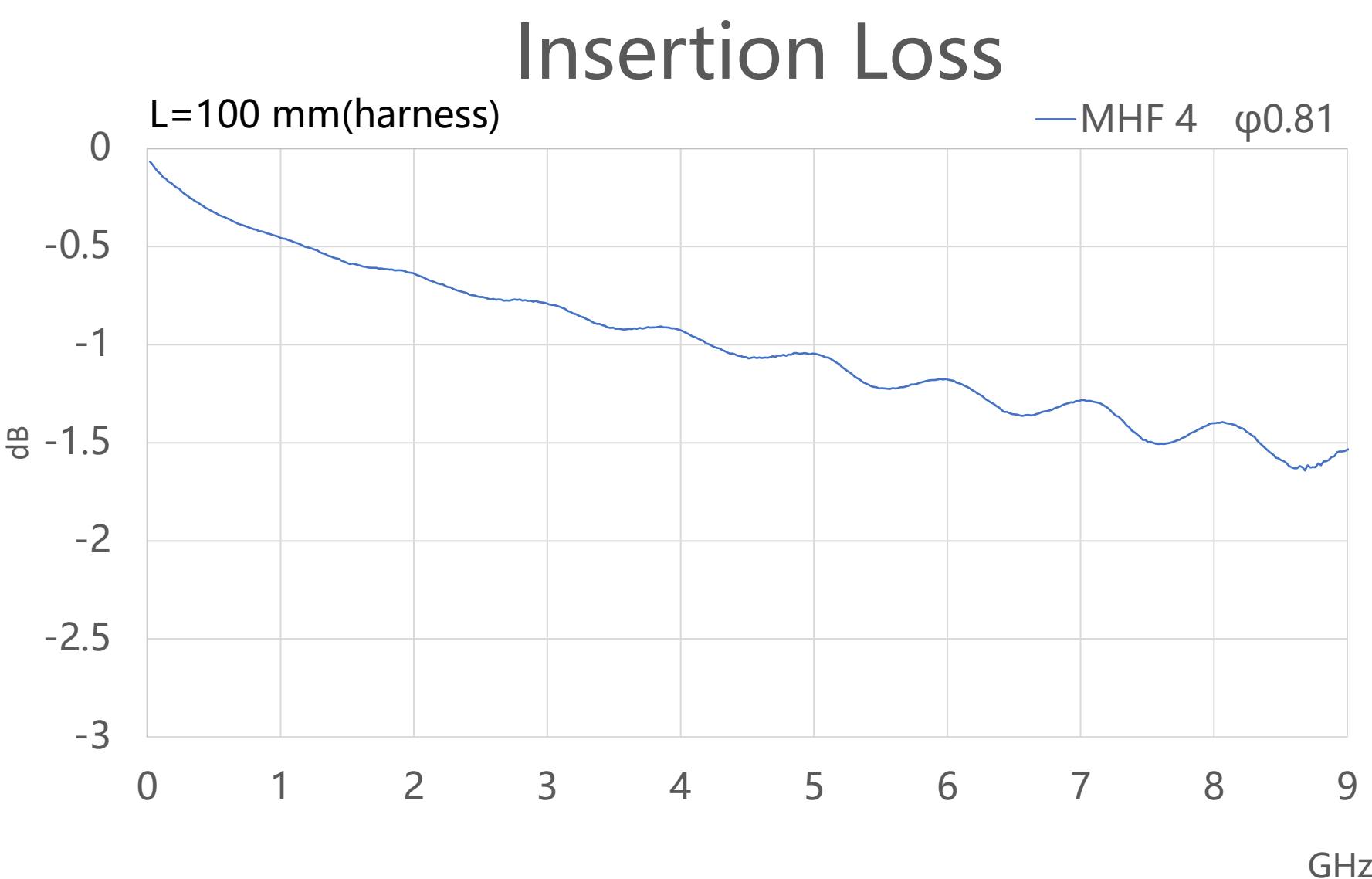
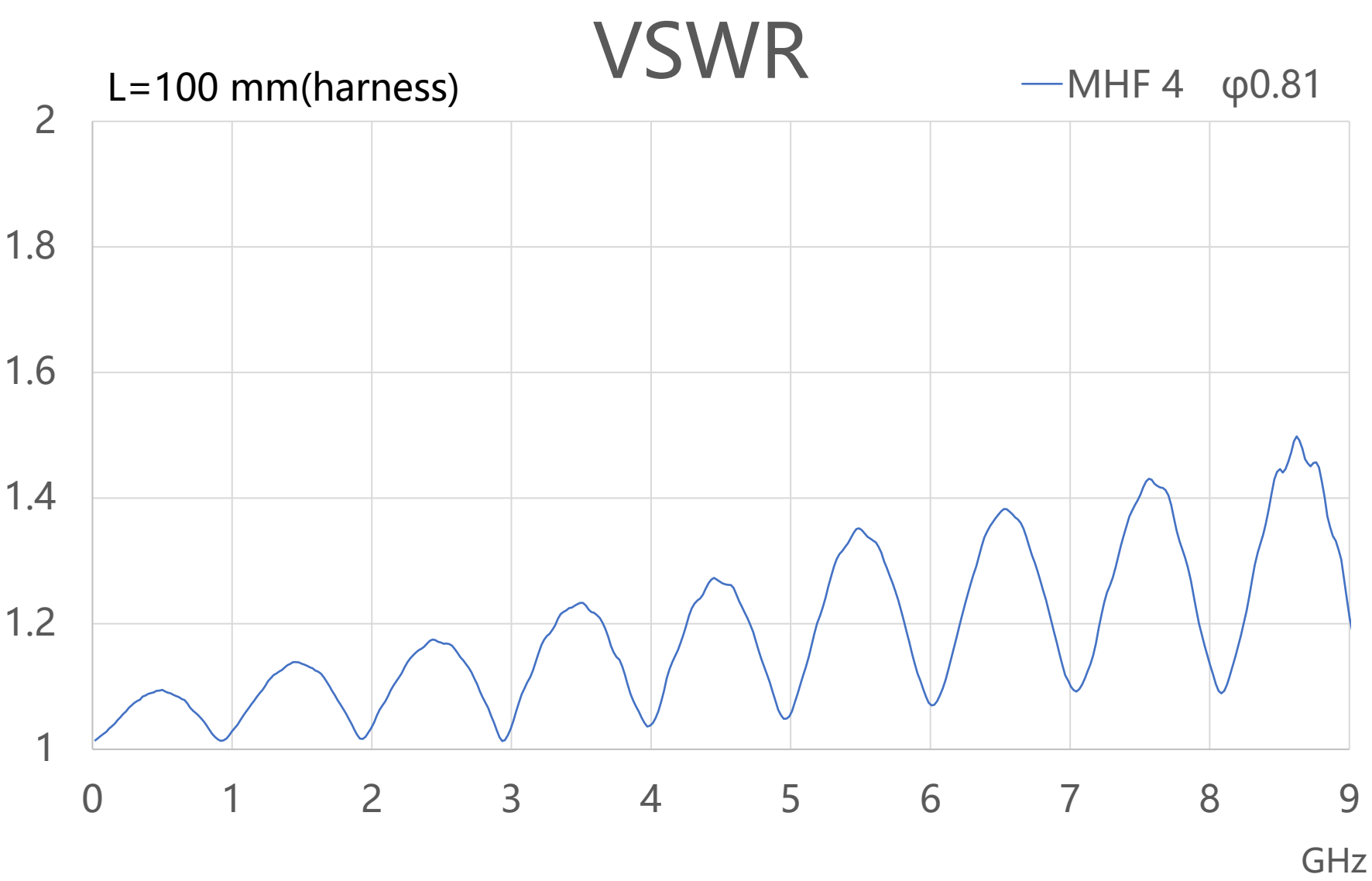
O.D. 0.81 mm / AWG 36

Applicable Standards (Reference Only):

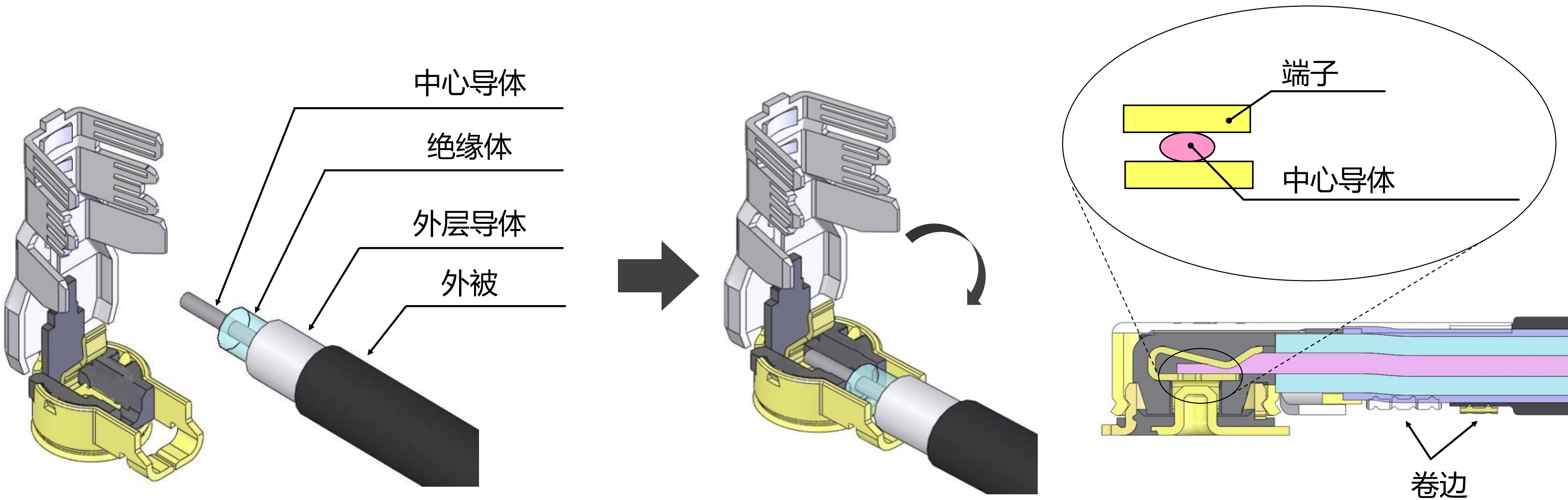
5G sub-6, Wi-Fi 6, LTE/LTE-Advanced, LPWA, Bluetooth, GPS



▶ 对应 9 GHz 的高性能小型连接器



▶ 使用“i-Fit®” 技术的无需焊接极细同轴线连结



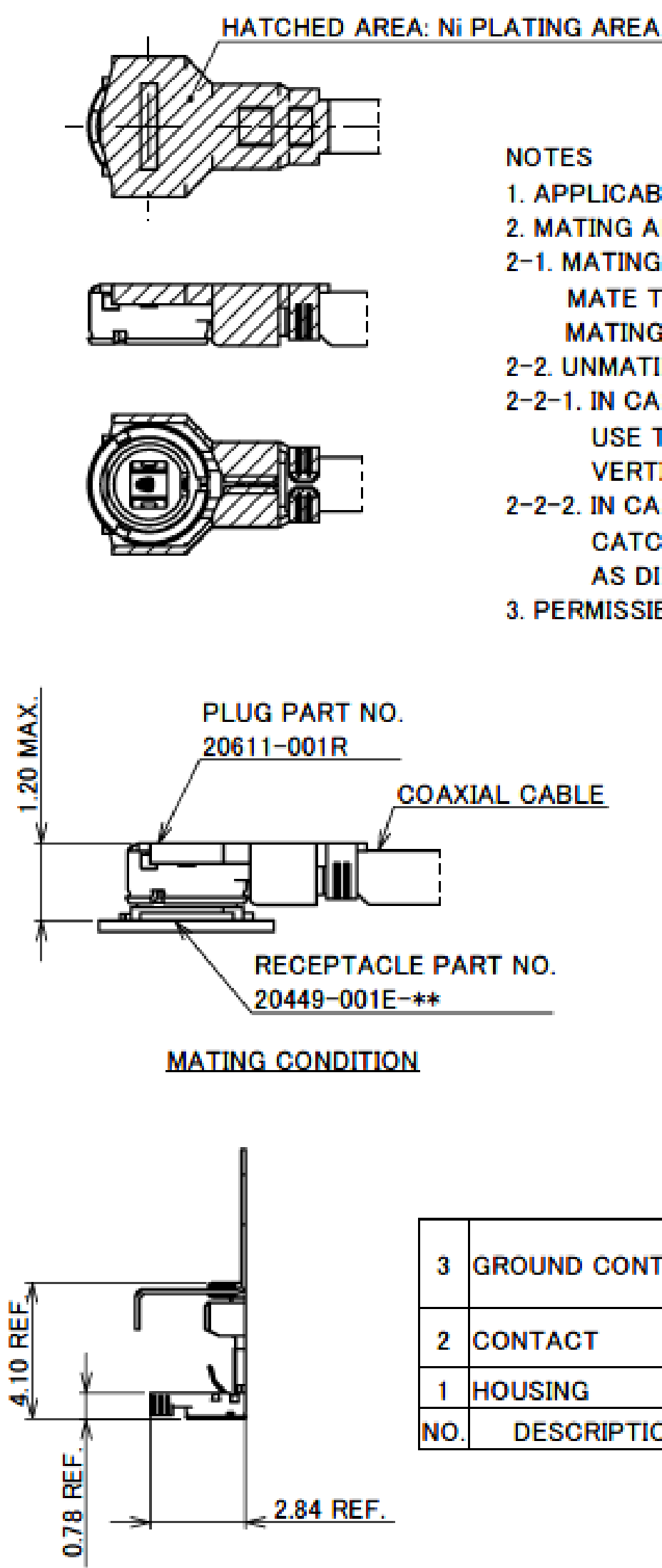
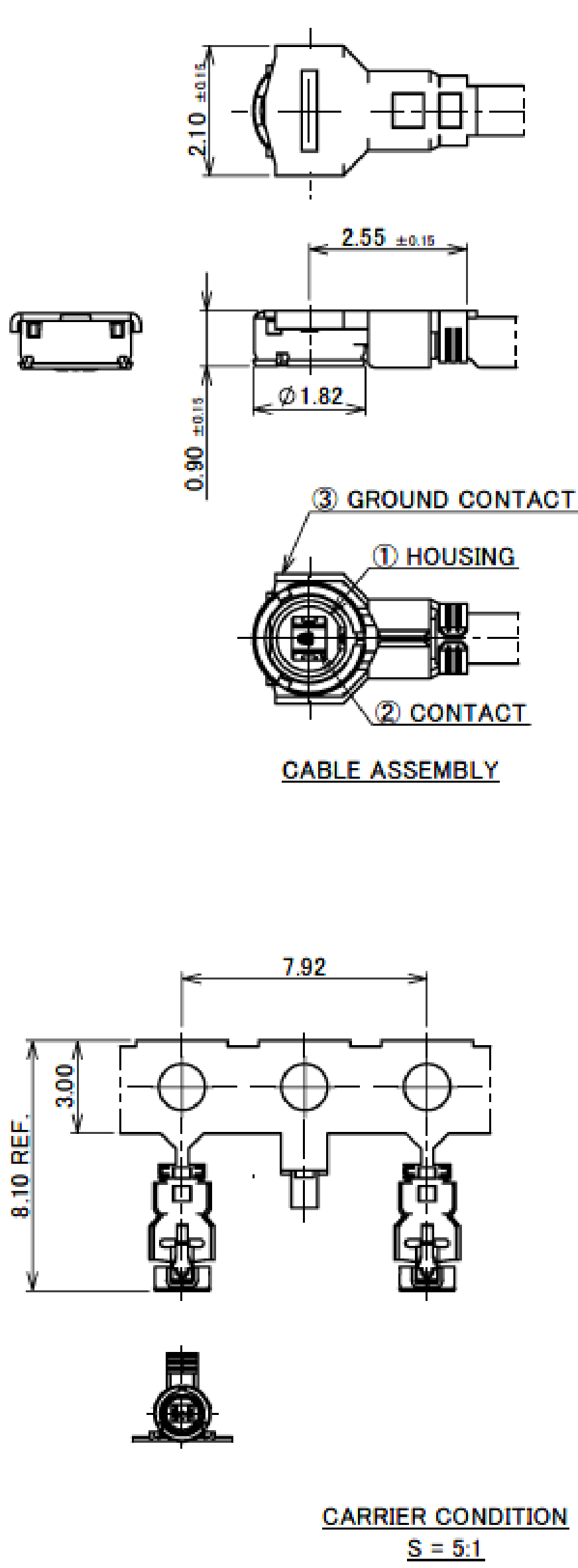
▶ MHF® 4 公座适用的极细同轴线外径 (AWG): 0.81 mm (36)

Product name		MHF® 4L			MHF® 4
Frequency		DC – 12 GHz (MHF® 4L Plug x MHF® 4L Rece) DC – 9 GHz (MHF® 4L Plug x MHF® 4 Rece)			DC – 9 GHz
Mating Height		1.7 mm max.	1.4 mm max.	1.2 mm max.	1.2 mm max.
Coaxial O.D. (Center Conductor AWG)	1.37 mm (AWG#30)	●			
	1.13 mm (AWG#32)		●		
	0.95 mm (AWG#33)		●		
	0.81 mm (AWG#36)			●	●
	0.64 mm (AWG#36)			●	
Receptacle		MHF® 4L / MHF® 4 receptacle			MHF® 4L / MHF® 4 receptacle

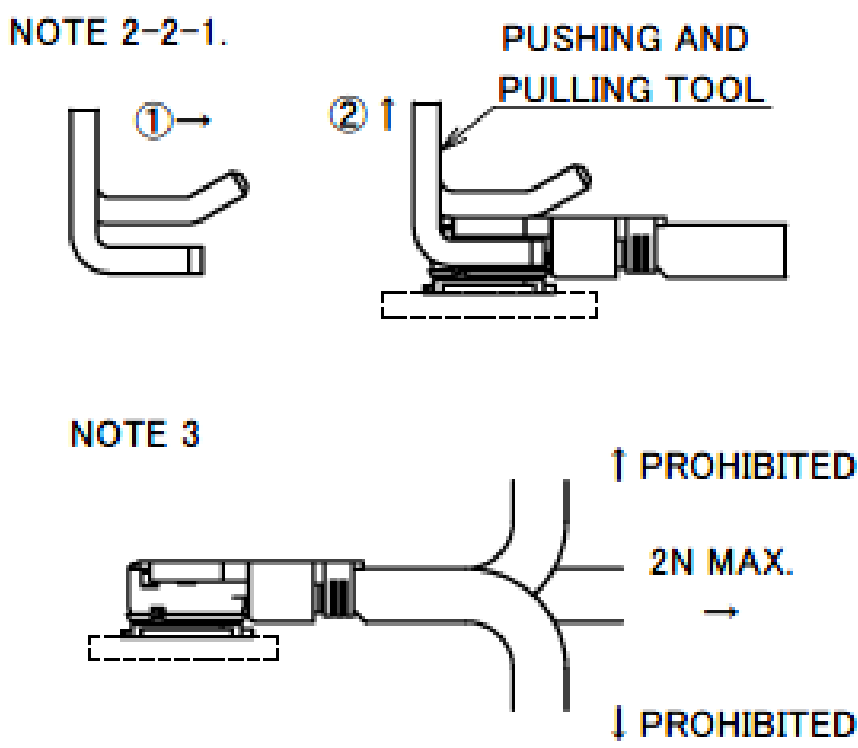
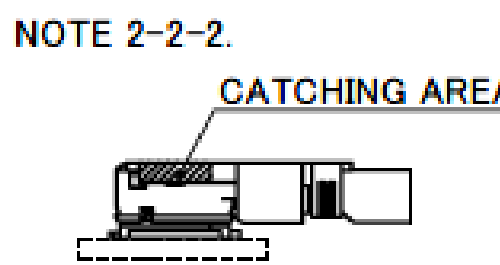
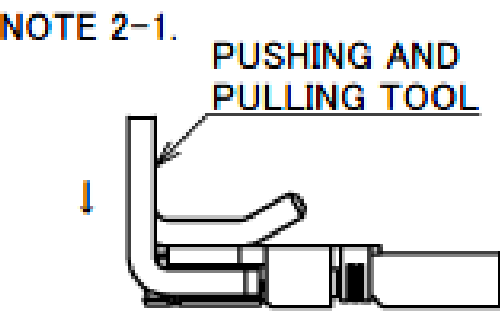
Component Parts Details

MHF[®] 4 plug Ni top

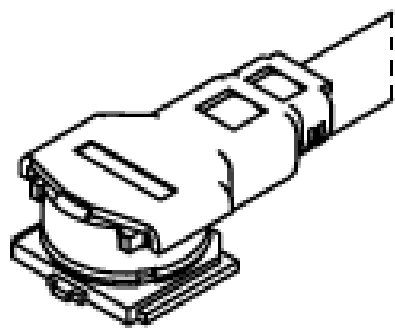
Recommended P/N	20611-001R
PART NO.	20611-001R



- NOTES
1. APPLICABLE CONNECTOR: 20449-001E-**
 2. MATING AND UNMATING INSTRUCTION
 - 2-1. MATING
MATE THE CONNECTOR VERTICALLY AS MUCH AS POSSIBLE. ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. DO NOT SLANT MATE.
 - 2-2. UNMATING
 - 2-2-1. IN CASE OF UNMATING BY PULLING TOOL (PART NO. 90435-001)
USE THE PULLING TOOL AS THE FOLLOWING DRAWING, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.
 - 2-2-2. IN CASE OF UNMATING DIRECTLY BY HAND.
CATCH THE CATCHING AREA OF PLUG, AND PULL TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.
 3. PERMISSIBLE LOAD OF CABLE AT MATING



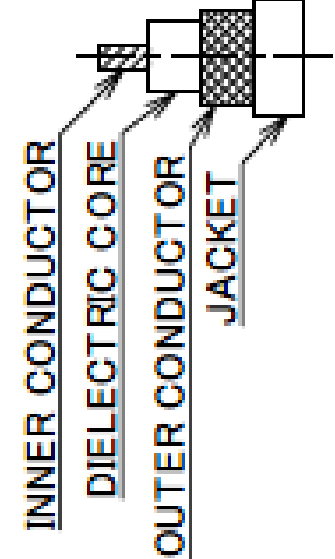
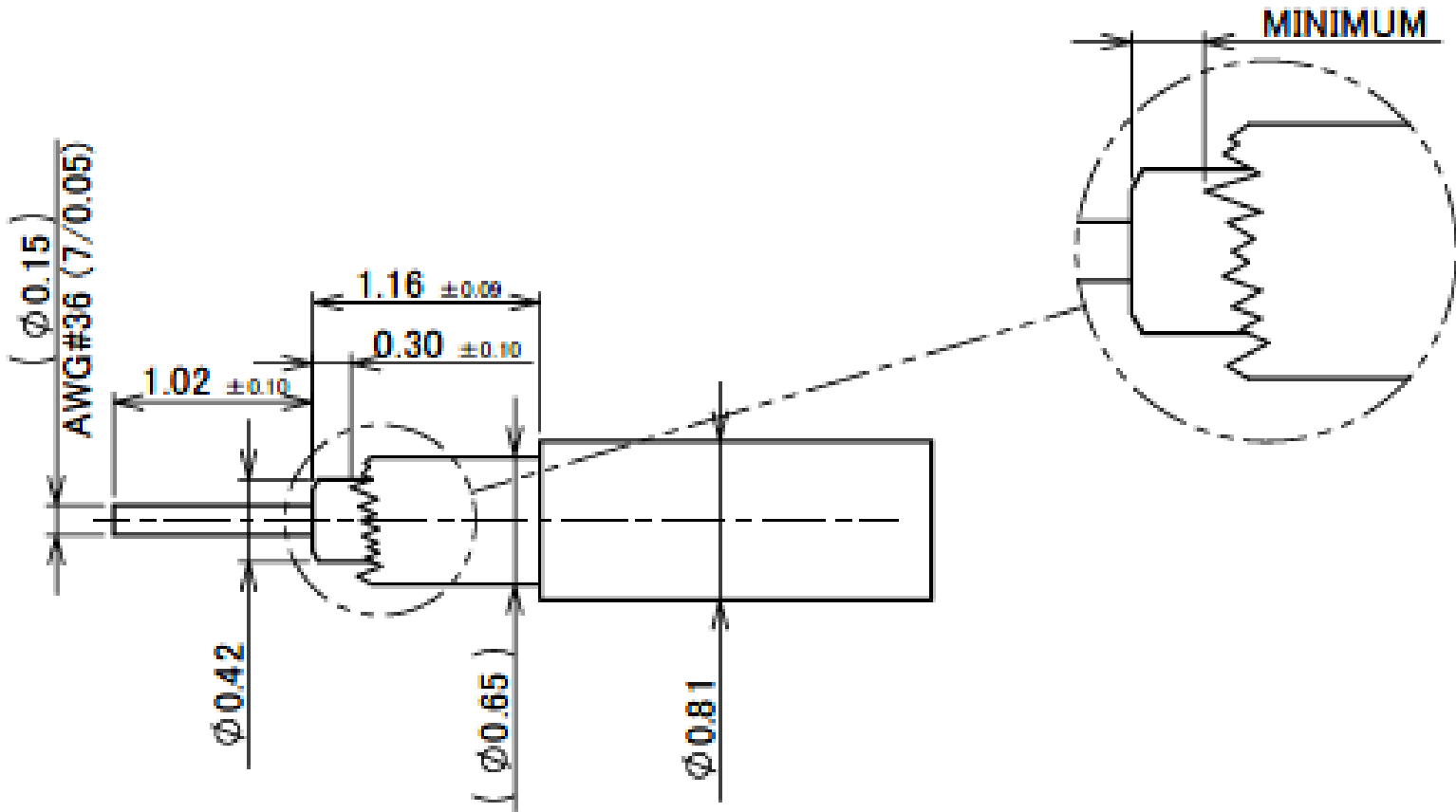
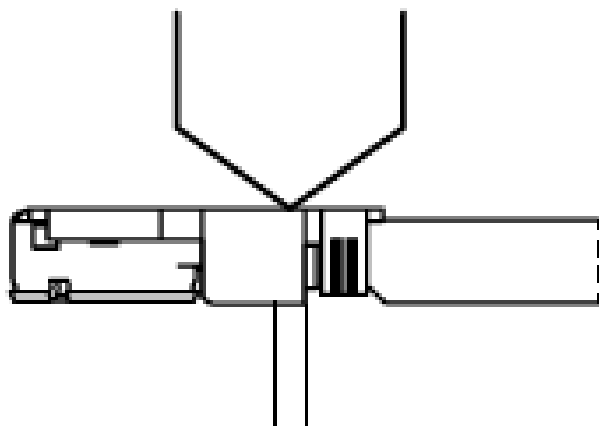
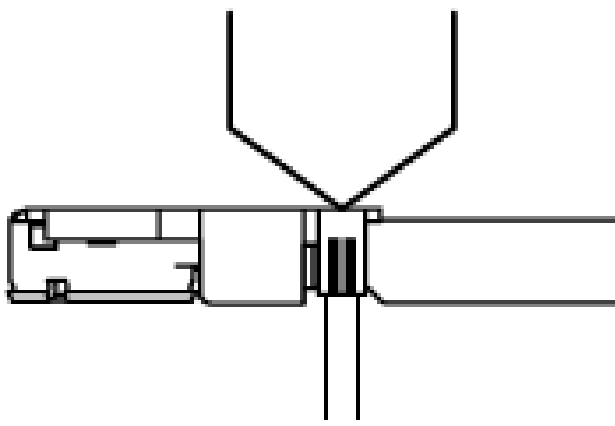
3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER: Ni 1.00 μ m MIN. CONTACT PART: Au 0.02 μ m MIN. [Ni PLATING AREA] Ni ONLY
2	CONTACT	PHOSPHOR BRONZE	ALL OVER: Ni 1.00 μ m MIN. CONTACT PART: Au 0.03 μ m MIN.
1	HOUSING	PBT	UL94V-0, BLACK
NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS



MHF® 4 plug Ni top

ITEMS	SPECIFICATION
APPLICABLE CONNECTOR PART NO.	20449-001E-**
RATING VOLTAGE	60 V AC (R.M.S) / DC
RATING FREQUENCY	DC~9GHz
OPERATING TEMPERATURE	233~363 K (-40°C~+90°C)
VSWR (MATED WITH SMA ADAPTER PART No. 90449-001)	1.30 MAX. AT 0.1~3GHz, 1.50 MAX. AT 3~6GHz, 2.00 MAX. AT 6~9GHz
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: Δ R 20 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: Δ R 100 mohm MAX.
INSULATION RESISTANCE	INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC 1 MINUTE
DURABILITY	30 CYCLES
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL: 4 N MIN. / AFTER TEST: 2 N MIN.
CRIMP STRENGTH	5 N MIN.
PRODUCT SPECIFICATION	PRS-2530
TEST REPORT	TR-18086
PACKING STANDARD	300-591
INSTRUCTION MANUAL	HIM-10003
APPEARANCE CRITERIA No.	QLS-A***

Rev.3

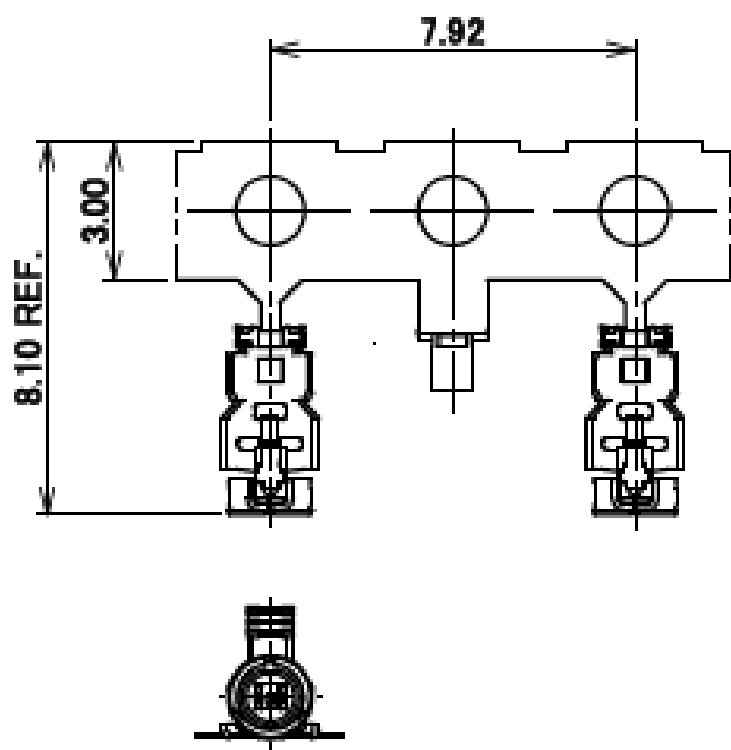
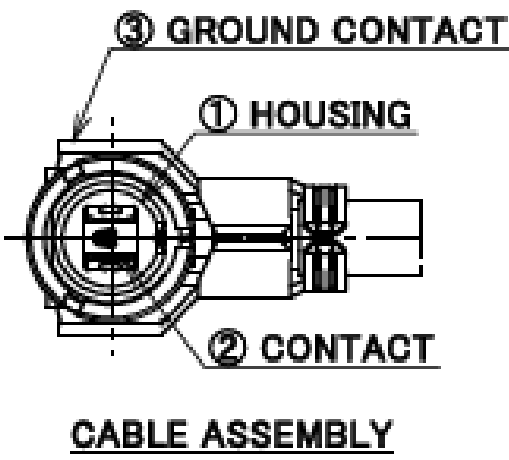
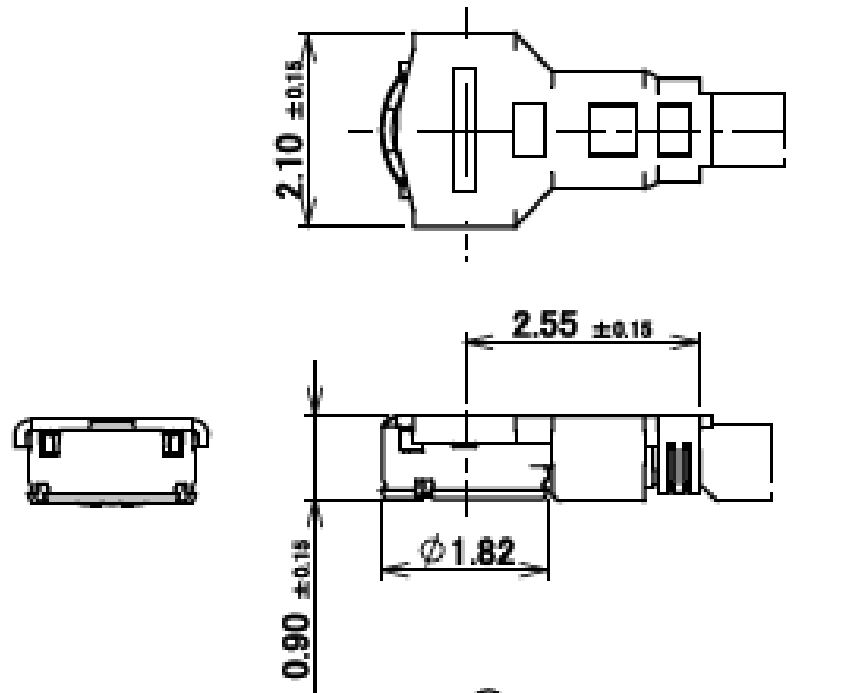
PART No.	20611-001R	
APPLICABLE CABLE STRIP DIMENSION 	 SEE NOTE 4.	
BRAIDED SHIELD OF OUTER CONDUCTOR	SINGLE BRAIDED SHIELD	
CRIMP HEIGHT	 SEE NOTE 5.	 SEE NOTE 5.
	i-Fit® PART 0.91~0.94	JACKET PART 0.82~0.85

NOTES.
4. MUST NOT USE SOLDER COATED INNER CONDUCTOR AND OUTER CONDUCTOR.
5. USE POINT MICROMETER.

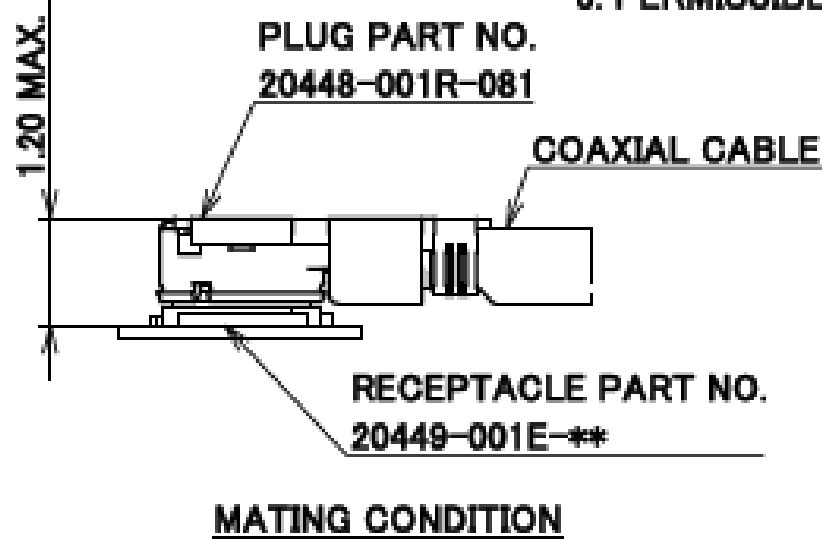
Rev.3

MHF® 4 plug Au

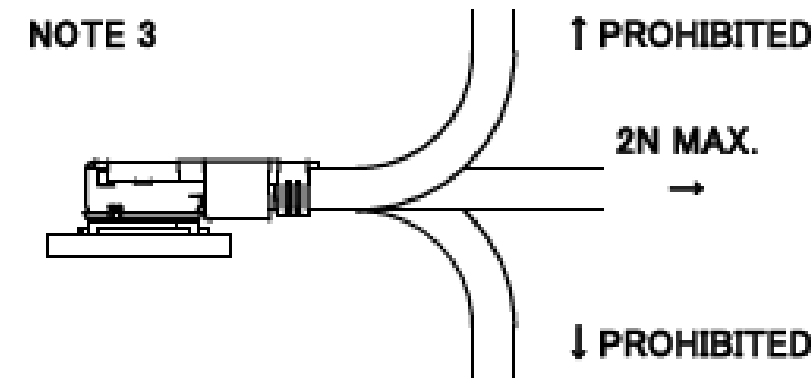
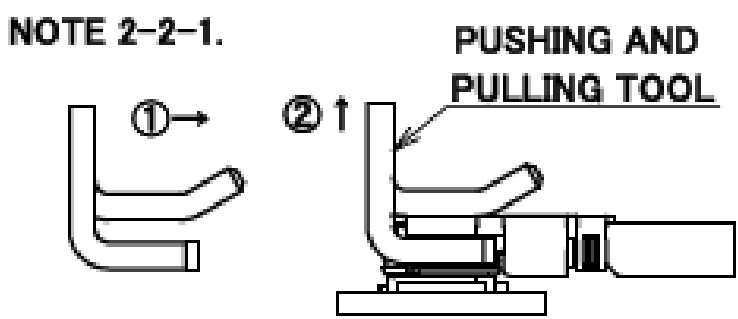
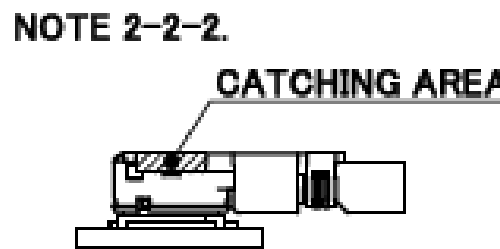
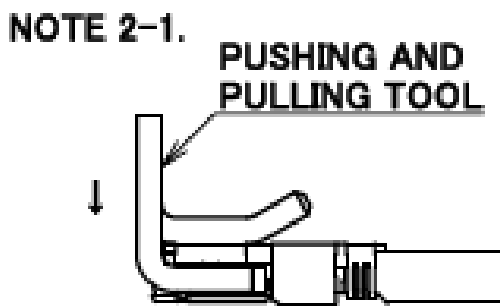
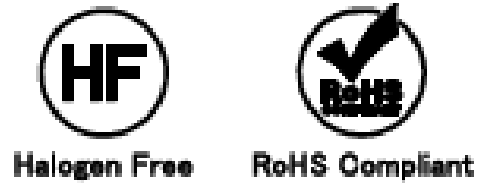
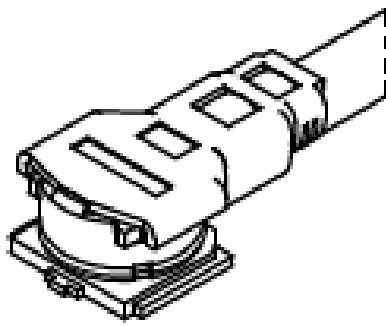
Recommended P/N	20448-001R-081
PART NO.	20448-001R-081



CARRIER CONDITION
S = 5:1



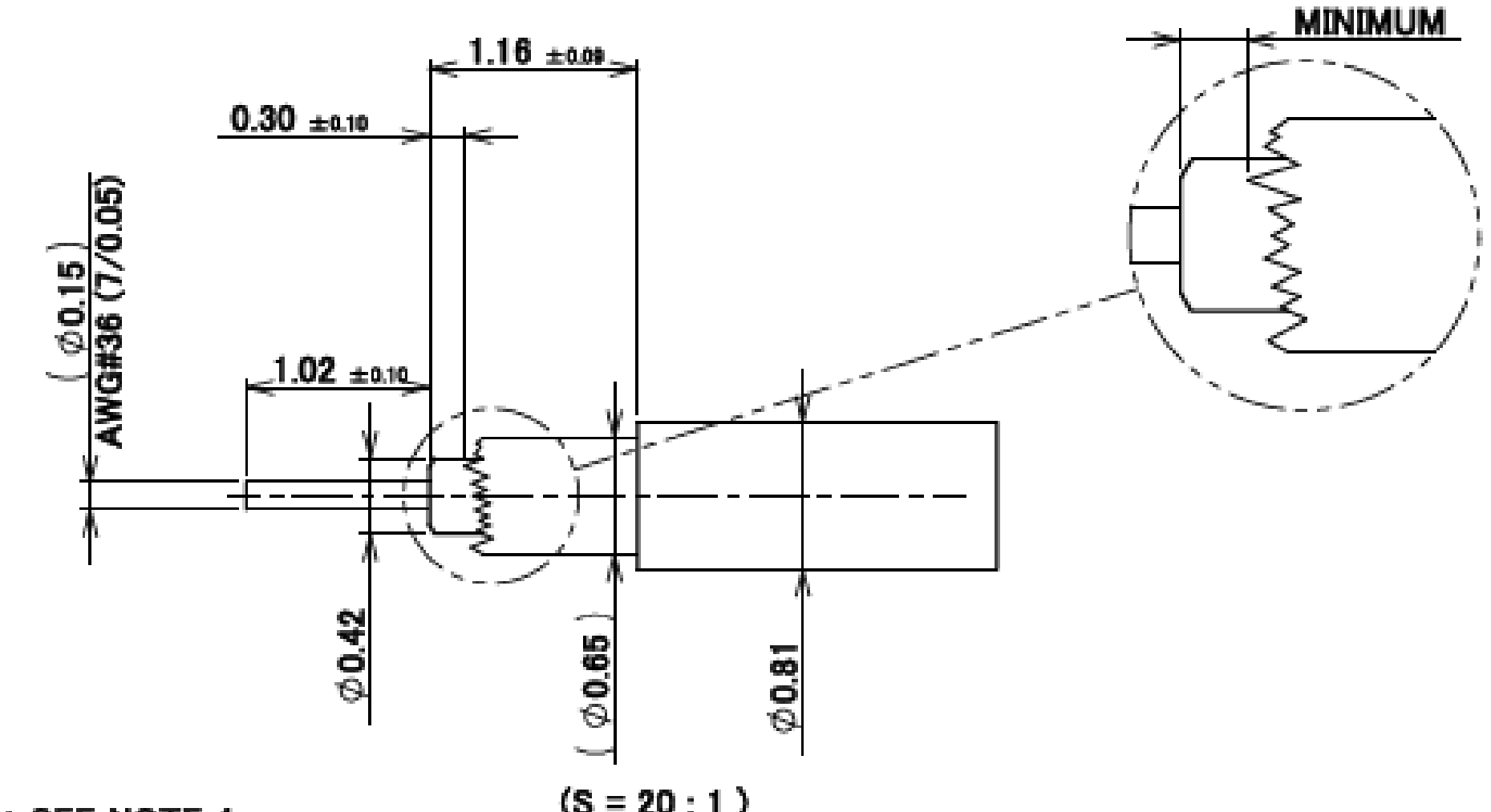
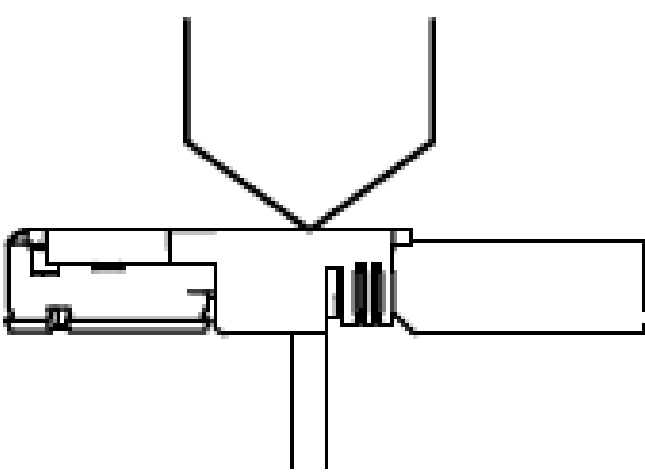
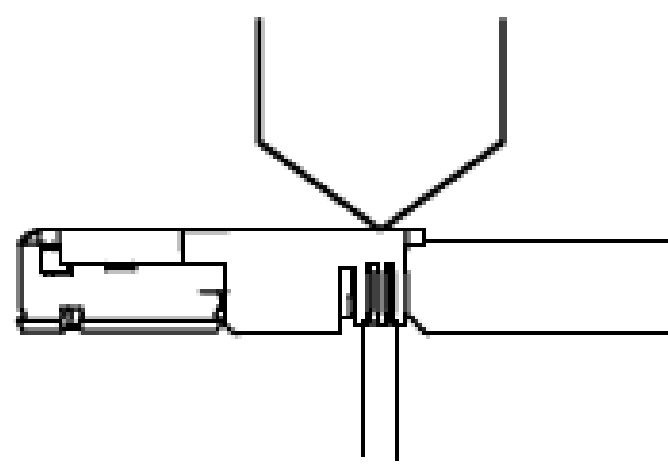
- NOTES
1. APPLICABLE CONNECTOR: 20449-001E-**
 2. MATING AND UNMATING INSTRUCTION
 - 2-1. MATING
MATE THE CONNECTOR VERTICALLY AS MUCH AS POSSIBLE. ADJUSTING THE MATING AXIS OF PLUG AND RECEPTACLE. DO NOT SLANT MATE.
 - 2-2. UNMATING
 - 2-2-1. IN CASE OF UNMATING BY PULLING TOOL (PART NO. 90435-001)
USE THE PULLING TOOL AS THE FOLLOWING DRAWING, AND PULL PLUG TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.
 - 2-2-2. IN CASE OF UNMATING DIRECTLY BY HAND.
CATCH THE CATCHING AREA OF PLUG, AND PULL TO VERTICAL DIRECTION AS DIRECTLY AS POSSIBLE.
 3. PERMISSIBLE LOAD OF CABLE AT MATING



3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER: Ni 1.00 μ m MIN. CONTACT PART: Au 0.05 μ m MIN.
2	CONTACT	PHOSPHOR BRONZE	ALL OVER: Ni 1.00 μ m MIN. CONTACT PART: Au 0.30 μ m MIN.
1	HOUSING	PBT	UL94V-0, BLACK
NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS

ITEMS	SPECIFICATION
APPLICABLE CONNECTOR PART NO.	20449-001E-**
RATING VOLTAGE	60 V AC (R.M.S) / DC
RATING FREQUENCY	DC~9GHz
OPERATING TEMPERATURE	233~363 K (-40℃~+90℃)
VSWR (MATED WITH SMA ADAPTER PART No. 90449-001)	1.30 MAX. AT 0.1~3GHz, 1.50 MAX. AT 3~6GHz, 2.00 MAX. AT 6~9GHz
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: $\leq$ R 20 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: $\leq$ R 20 mohm MAX.
INSULATION RESISTANCE	INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC 1 MINUTE
DURABILITY	30 CYCLES
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL: 4 N MIN. / AFTER TEST: 2 N MIN.
CRIMP STRENGTH	5 N MIN.
PRODUCT SPECIFICATION	PRS-1745
TEST REPORT	TR-12118
PACKING STANDARD	300-591
INSTRUCTION MANUAL	HIM-10003
APPEARANCE CRITERIA No.	QLS-A***

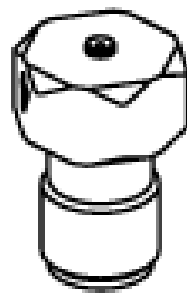
MHF® 4 plug Au

PART No.	20448-001R-081	
APPLICABLE CABLE STRIP DIMENSION	 * SEE NOTE 4. (S = 20 : 1)	
BRAIDED SHIELD OF OUTER CONDUCTOR	SINGLE BRAIDED SHIELD	
CRIMP HEIGHT	 * SEE NOTE 5. i-Fit® PART 0.91~0.94	 * SEE NOTE 5. JACKET PART 0.82~0.85

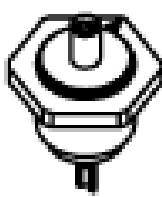
NOTES.
4. MUST NOT USE SOLDER COATED INNER CONDUCTOR /
5. USE POINT MICROMETER.

Rev.7

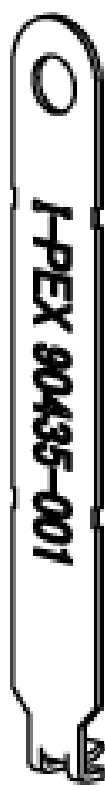
Accessories for MHF® 4 plug



MHF 4 (4L) SMA ADAPTOR
PART NO. 90449-001



MHF 4 (4L) INSPECTION CONNECTOR
PART NO. 90449-003-01



FRONT SIDE



BACK SIDE

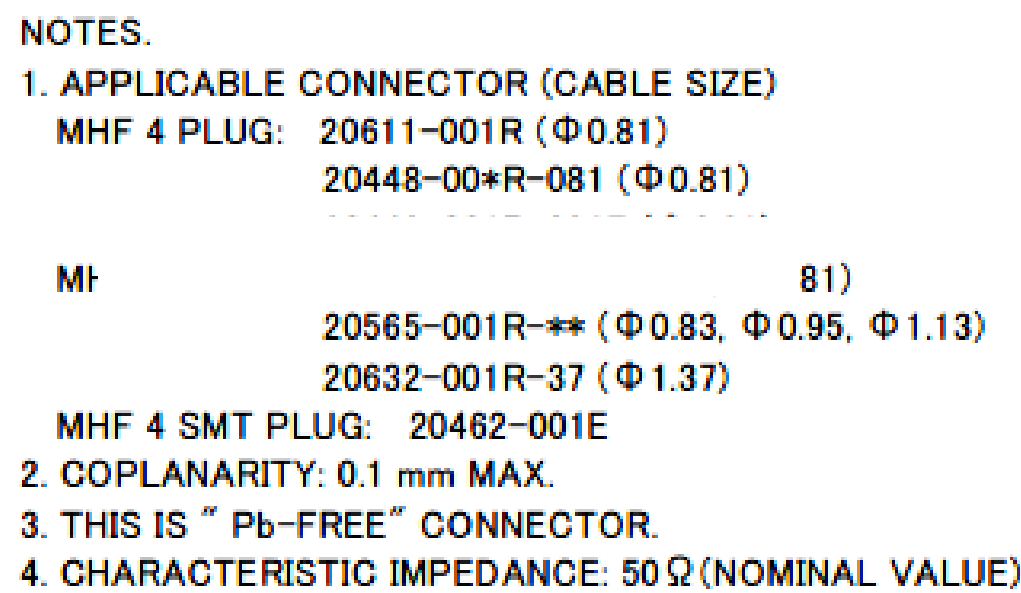
MHF 4 PUSHING AND PULLING TOOL
PART NO. 90435-001

Rev.3

MHF® 4 Receptacle




Halogen Free RoHS Compliant



* MATING HEIGHT
1.2 MAX. WITH 20611-001R, 20572-001R-08,
20448-00*R-081, 20448-001R-081E
1.4 MAX. WITH 20565-001R-**
1.7 MAX. WITH 20632-001R-37
(2.0 MAX. WITH MHF 4L LK LOCKED CONDITION)
MATING CONDITION
WITH MHF 4/MHF 4L PLUG
(S = 10 : 1)

Rev.21

MHF® 4 Receptacle

FOR MHF 4L PLUG

ITEMS	SPECIFICATION			
APPLICABLE CONNECTOR PART No.	20572-001R-08 (CABLE Φ0.64 TYPE) (CABLE Φ0.81 TYPE)	20565-001E-13 (CABLE Φ0.95 TYPE) (CABLE Φ1.13 TYPE)	20565-001R-83 (CABLE Φ0.83 TYPE)	20632-001R-37 (CABLE Φ1.37 TYPE)
RATING VOLTAGE	60 V AC (R.M.S)/DC			
RATING FREQUENCY	DC ~ 9GHz			
OPERATING TEMPERATURE	233~363 K(-40℃~+90℃)			
CHARACTERISTIC IMPEDANCE	50 ohm (NOMINAL VALUE)			
VSWR (MATED WITH SMA ADAPTER PART No. 90449-002)	1.30 MAX. AT 0.1~3GHz, 1.40 MAX. AT 3~6GHz, 1.55 MAX. AT 6~9GHz			
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ⚡R 20 mohm MAX.			
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ⚡R 20 mohm MAX.			
INSULATION RESISTANCE	INITIAL : 500 Mohm MIN. / AFTER TEST : 100 Mohm MIN.			
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC 1 MINUTE			
DURABILITY	30 CYCLES			
MATING FORCE (INITIAL / AFTER TEST)	INITIAL : 30 N MAX. / AFTER TEST : 30 N MAX.			
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL : 20 N MAX. 5 N MIN. / AFTER TEST : 20 N MAX. 3 N MIN.			
PRODUCT SPECIFICATION	PRS-1944 (CABLE Φ0.64 TYPE) PRS-1772 (CABLE Φ0.81 TYPE)	PRS-2051 (CABLE Φ0.95 TYPE) PRS-1772 (CABLE Φ1.13 TYPE)	PRS-2062 (CABLE Φ0.83 TYPE)	PRS-2008 (CABLE Φ1.37 TYPE)
TEST REPORT	TR-14078 (CABLE Φ0.64 TYPE) TR-13011 (CABLE Φ0.81 TYPE)	TR-14142 (CABLE Φ0.95 TYPE) TR-13011 (CABLE Φ1.13 TYPE)	TR-15011 (CABLE Φ0.83 TYPE)	TR-14100 (CABLE Φ1.37 TYPE)
PACKING STANDARD	20449-001E-03: 300-604			
INSTRUCTION MANUAL	HIM-12011	HIM-12012		HIM-16011
APPEARANCE CRITERIA No.	QLS-A***			

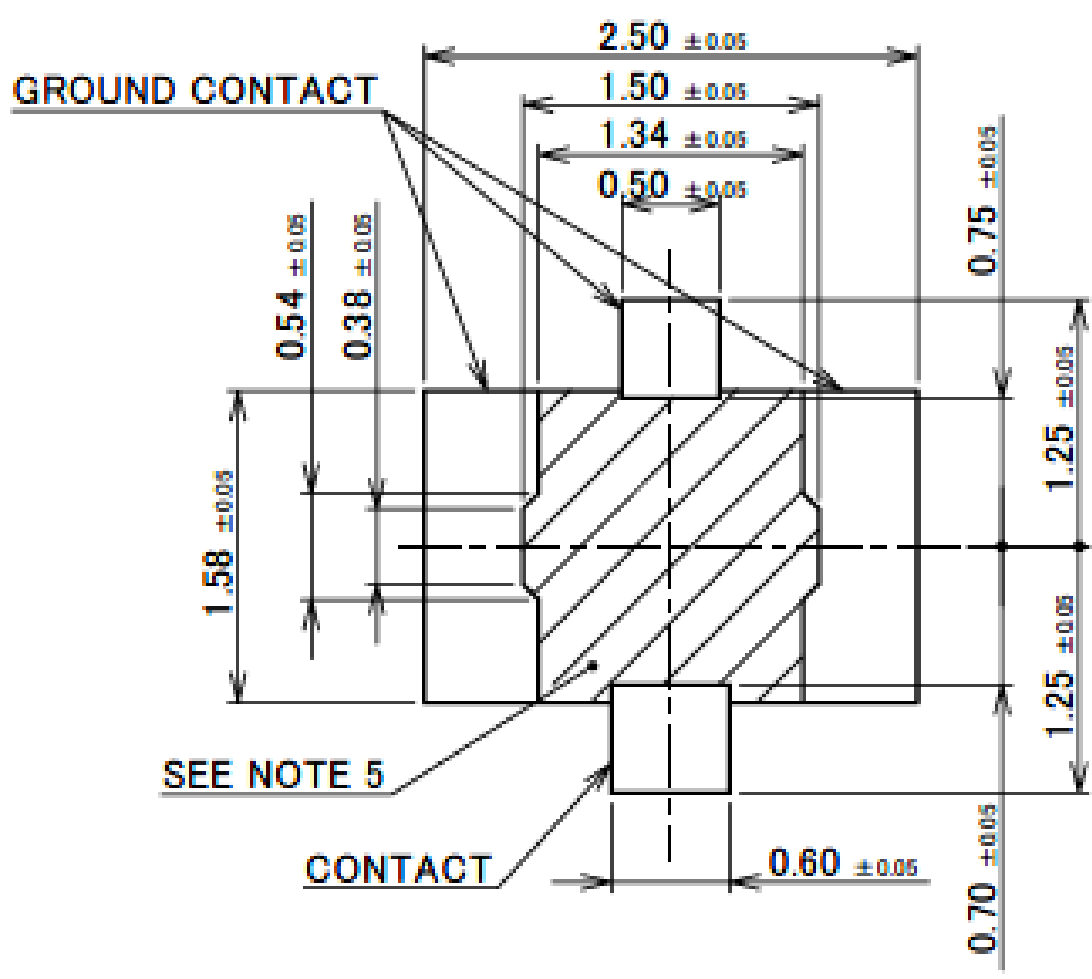
Rev.21

FOR MHF 4 SMT PLUG

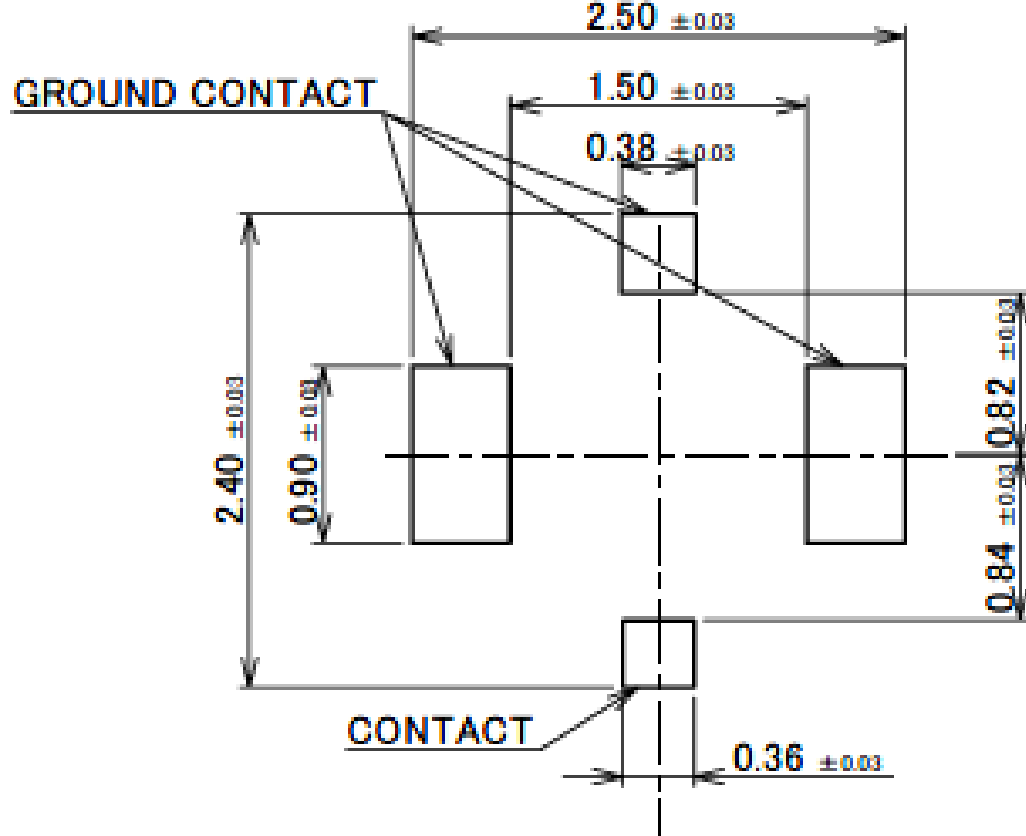
ITEMS	SPECIFICATION
APPLICABLE CONNECTOR PART No.	20462-001E (MHF 4 SMT PLUG)
RATING VOLTAGE	60 V AC (R.M.S)/DC
RATING FREQUENCY	DC~9GHz
OPERATING TEMPERATURE	233~363 K(-40℃~+90℃)
CHARACTERISTIC IMPEDANCE	50 ohm (NOMINAL VALUE)
VSWR (MATED WITH SMA ADAPTER PART No. 90449-002)	1.30 MAX. AT 0.1~3GHz, 1.40 MAX. AT 3~6GHz, 1.55 MAX. AT 6~9GHz
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ⚡R 20 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ⚡R 20 mohm MAX.
INSULATION RESISTANCE	INITIAL : 500 Mohm MIN. / AFTER TEST : 100 Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC 1 MINUTE
DURABILITY	30 CYCLES
MATING FORCE (INITIAL / AFTER TEST)	INITIAL : 30 N MAX. / AFTER TEST : 15 N MAX.
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL : 4 N MIN. / AFTER TEST : 2 N MIN.
PRODUCT SPECIFICATION	PRS-1404
TEST REPORT	TR-08022
PACKING STANDARD	20449-001E-03: 300-604
INSTRUCTION MANUAL	HIM-15005
APPEARANCE CRITERIA No.	QLS-A***

Rev.21

MHF® 4 Receptacle

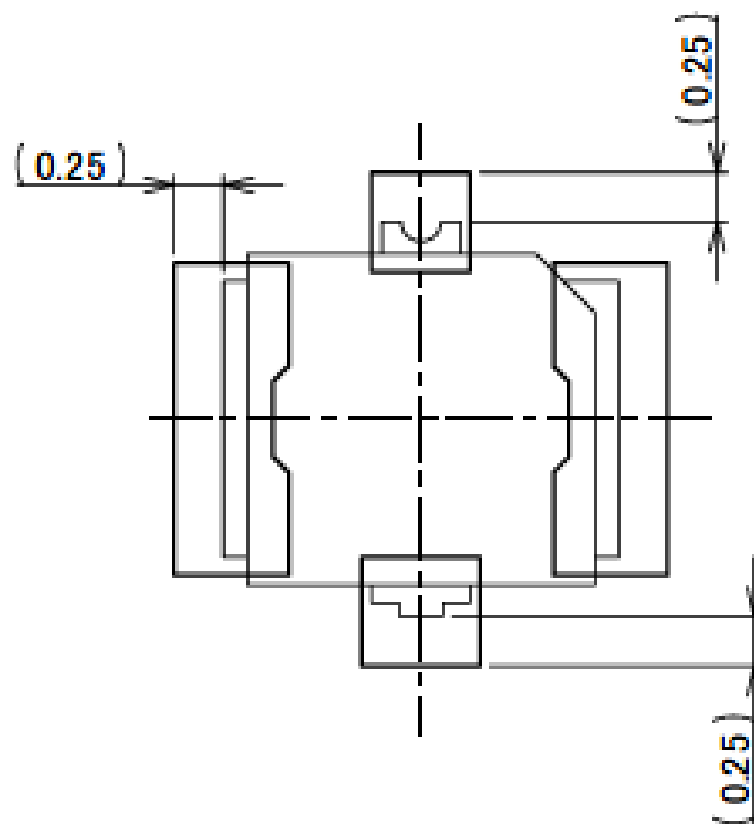


RECOMMENDED FOOTPRINT PATTERN

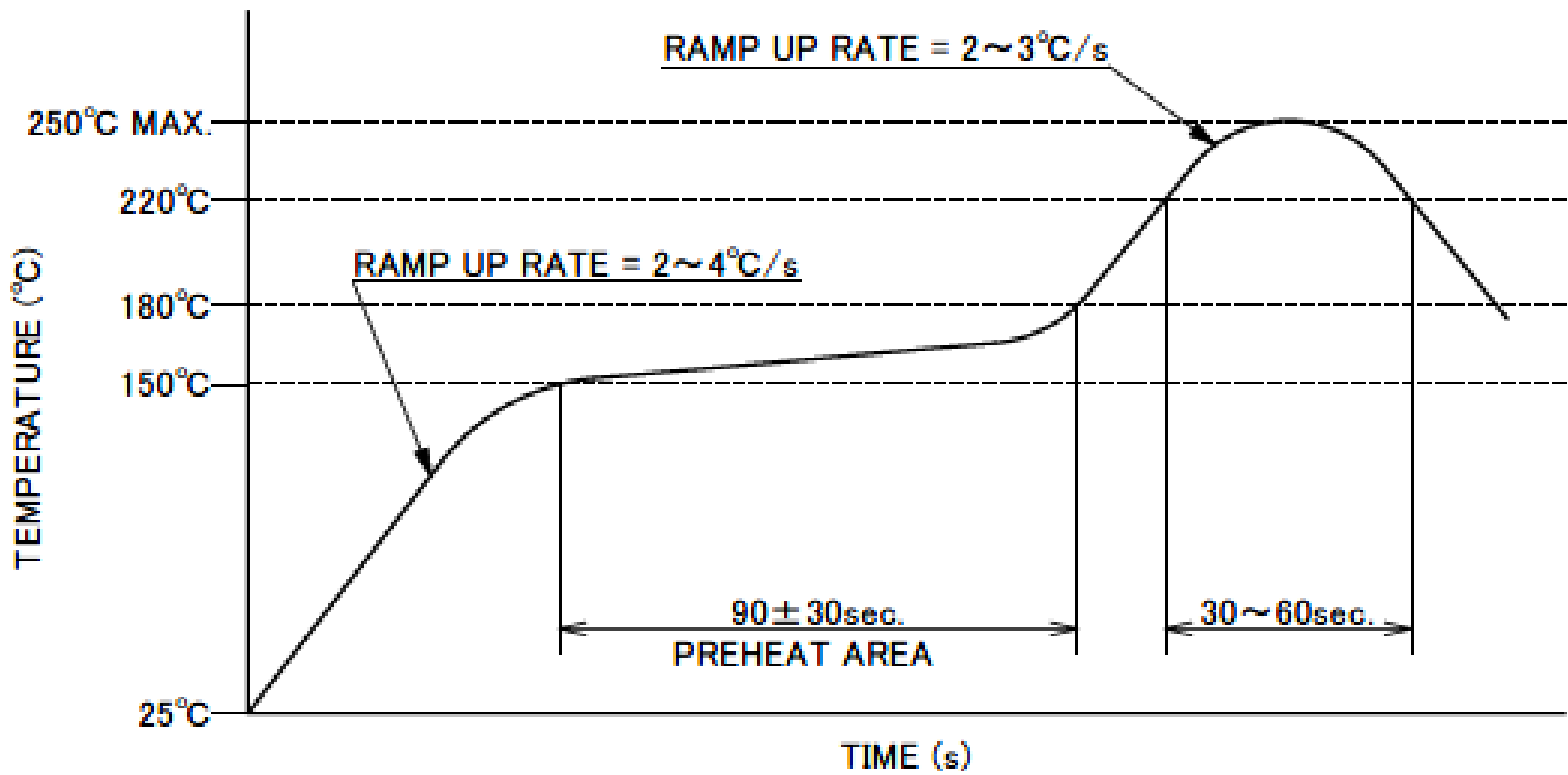


MASK THICKNESS: 0.12 mm

RECOMMENDED METAL MASK LAYOUT



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN



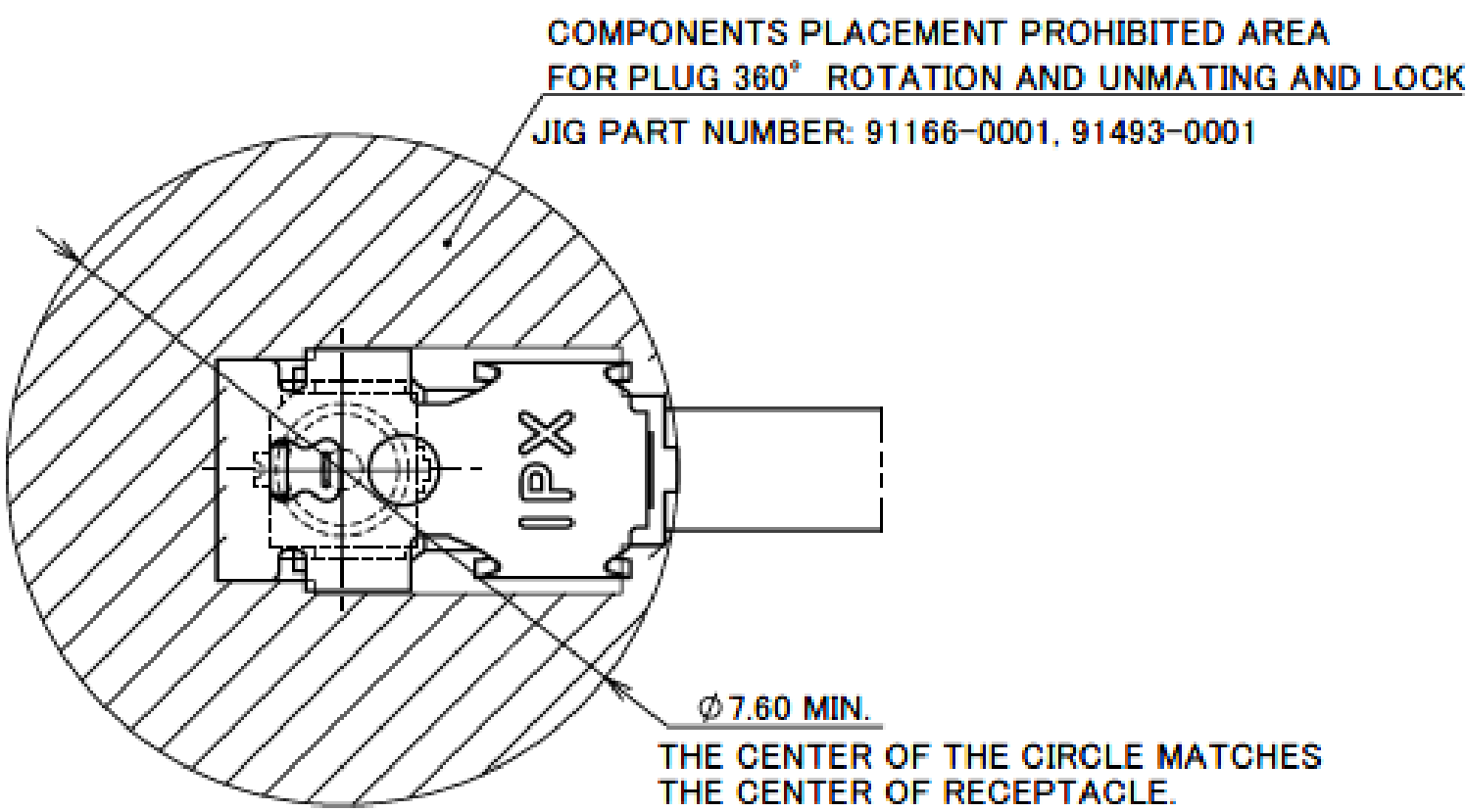
REFLOW TEMPERATURE PROFILE
SENJU METAL INDUSTRY CO., LTD. : M705-SHF(Sn96.5 Ag3.0 Cu0.5)

NOTE 5. NO GROUND, SIGNAL, AND RESIST IN THIS AREA.

Rev.21

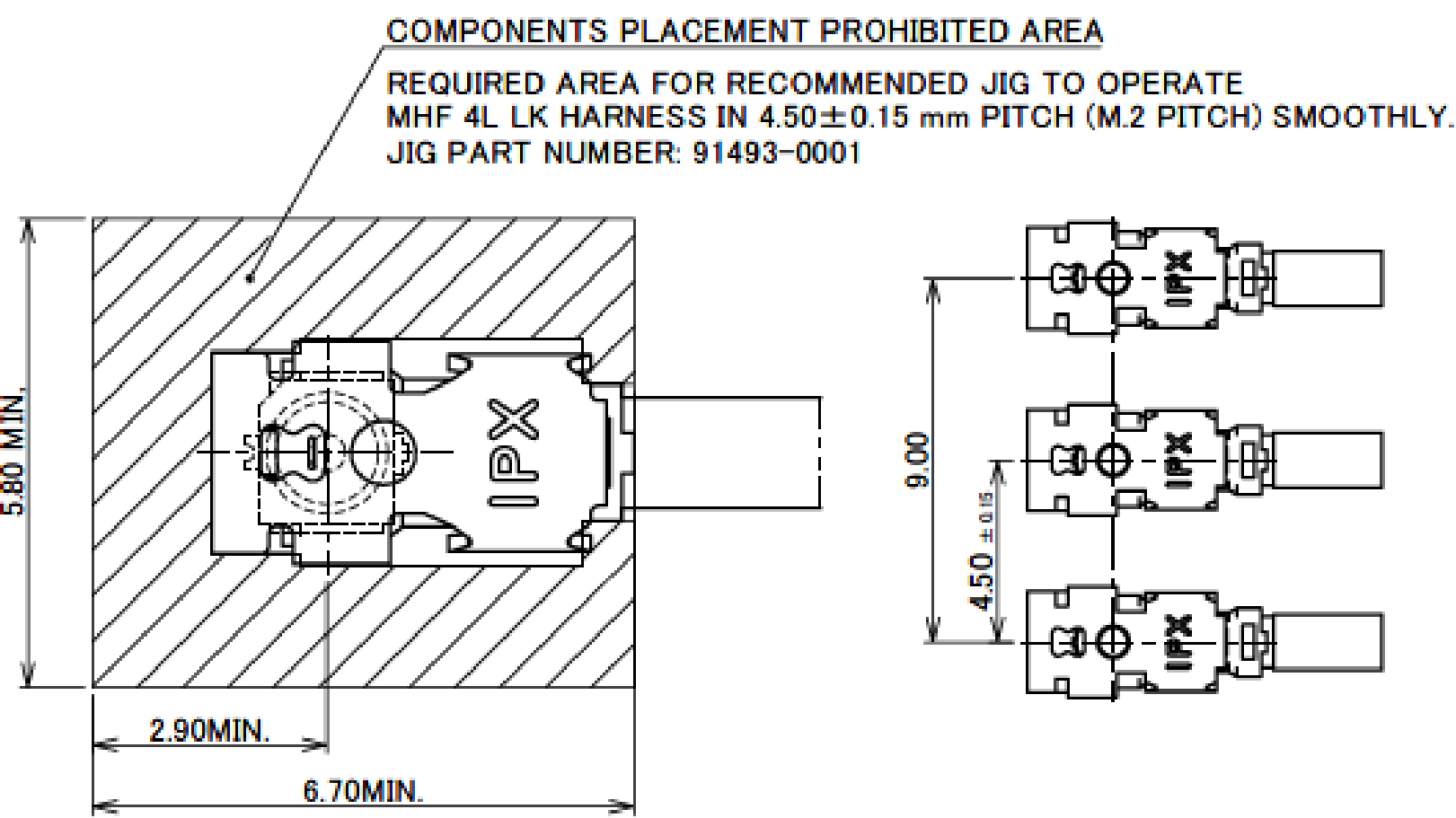
COMPONENT PLACEMENT PROHIBITED AREA
FOR MHF 4 RECEPTACLE MATED WITH MHF 4L LK HARNESS
REQUIRED AREA FOR RECOMMENDED JIG TO OPERATE

SINGLE CONNECTOR LAYOUT



MATING AND LOCK CONDITION
WITH MHF 4L LK HARNESS

MULTIPLE CONNECTORS LAYOUT



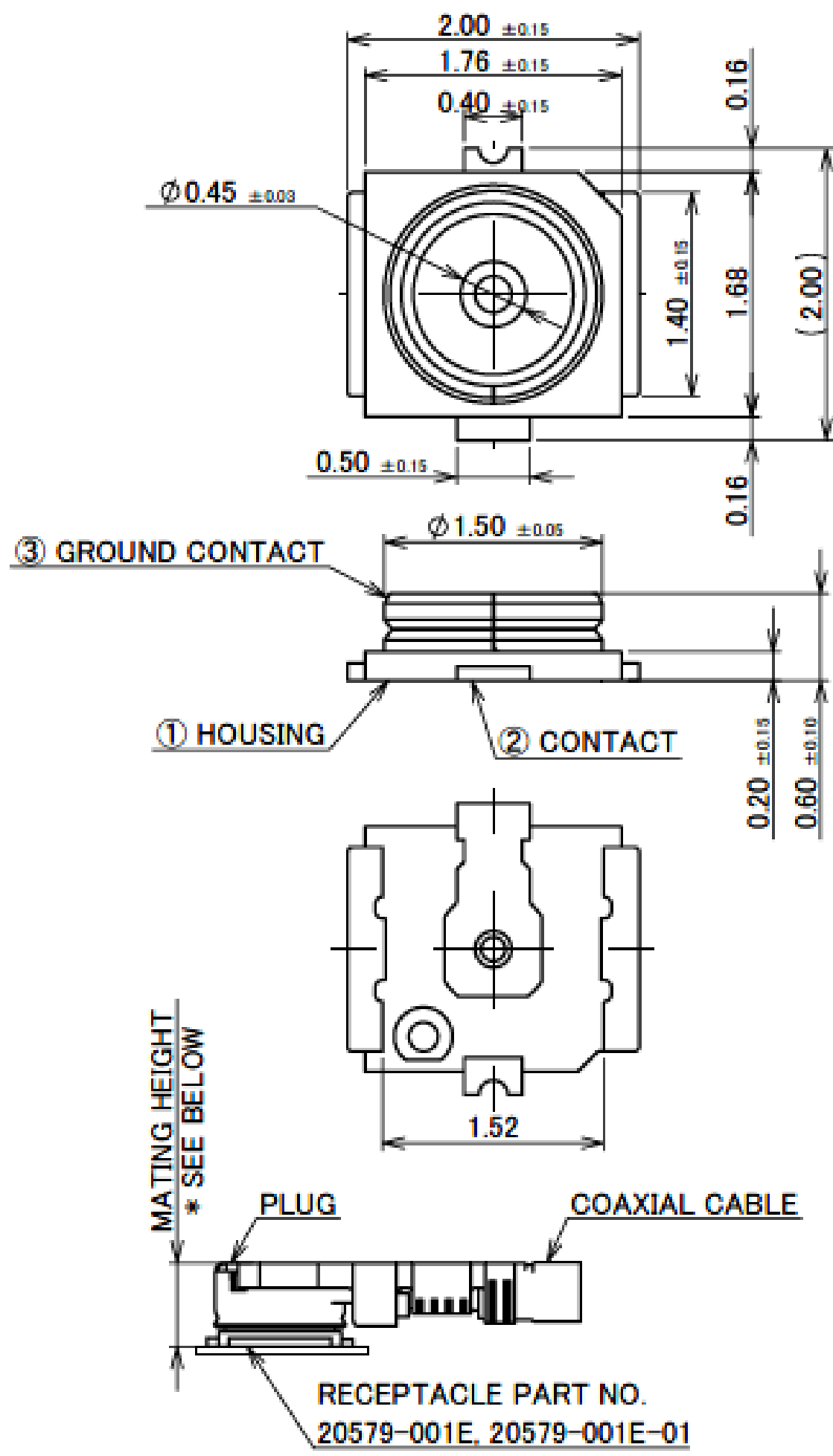
MATING AND LOCK CONDITION
WITH MHF 4L LK HARNESS NARROW PITCH

MHF 4L LK HARNESS UNLOCK CONDITION
NARROW PITCH DIMENSIONS
(S = 5 : 1)

Rev.21

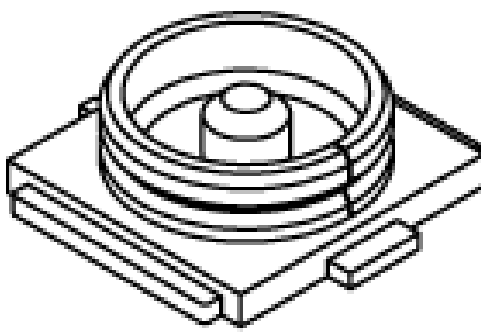
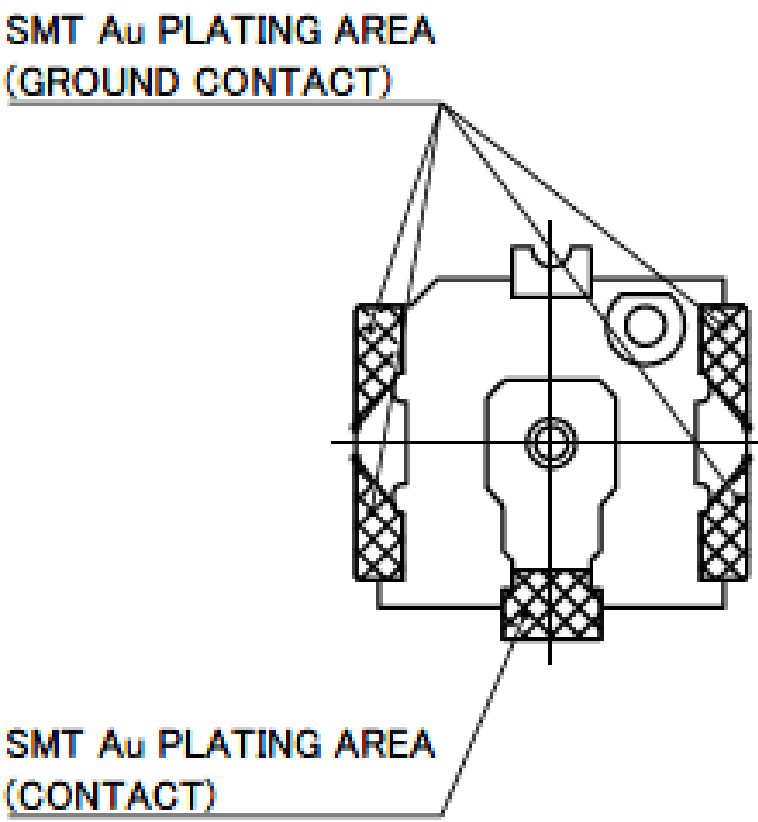
MHF® 4L Receptacle

Recommended P/N		20579-001E
PART NO.	PACKING QUANTITY / REEL	
20579-001E	10,000 PCS.	
20579-001E-01	20,000 PCS.	



* MATING HEIGHT
1.2 MAX. WITH 20611-001R, 20572-001R-08,
20448-00*R-081, 20448-001R-081E
1.4 MAX. WITH 20565-001R-**
1.7 MAX. WITH 20632-001R-37
(2.0 MAX. WITH MHF 4L LK LOCKED CONDITION)

MATING CONDITION
WITH MHF 4/MHF 4L PLUG
(S = 10/1)



NOTES.
1. APPLICABLE CONNECTOR (CABLE SIZE)
MHF 4 PLUG: 20611-001R (Φ0.81)
20448-00*R-081 (Φ0.81)
20448-001R-081E (Φ0.81)
MHF 4L PLUG: 20572-001R-08 (Φ0.64, Φ0.81)
20565-001R-** (Φ0.83, Φ0.95, Φ1.13)
20632-001R-37 (Φ1.37)
2. COPLANARITY: 0.1 mm MAX.

3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT PART: Au 0.05 μm MIN. , SOLDERING PART Au AREA: 0.03 μm MIN.
2	CONTACT	BRASS	ALL OVER Ni 1.00 μm MIN. CONTACT PART: Au 0.05 μm MIN. SOLDERING PART Au AREA: 0.03 μm MIN.
1	HOUSING	LCP	UL94V-0, BLACK
NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS

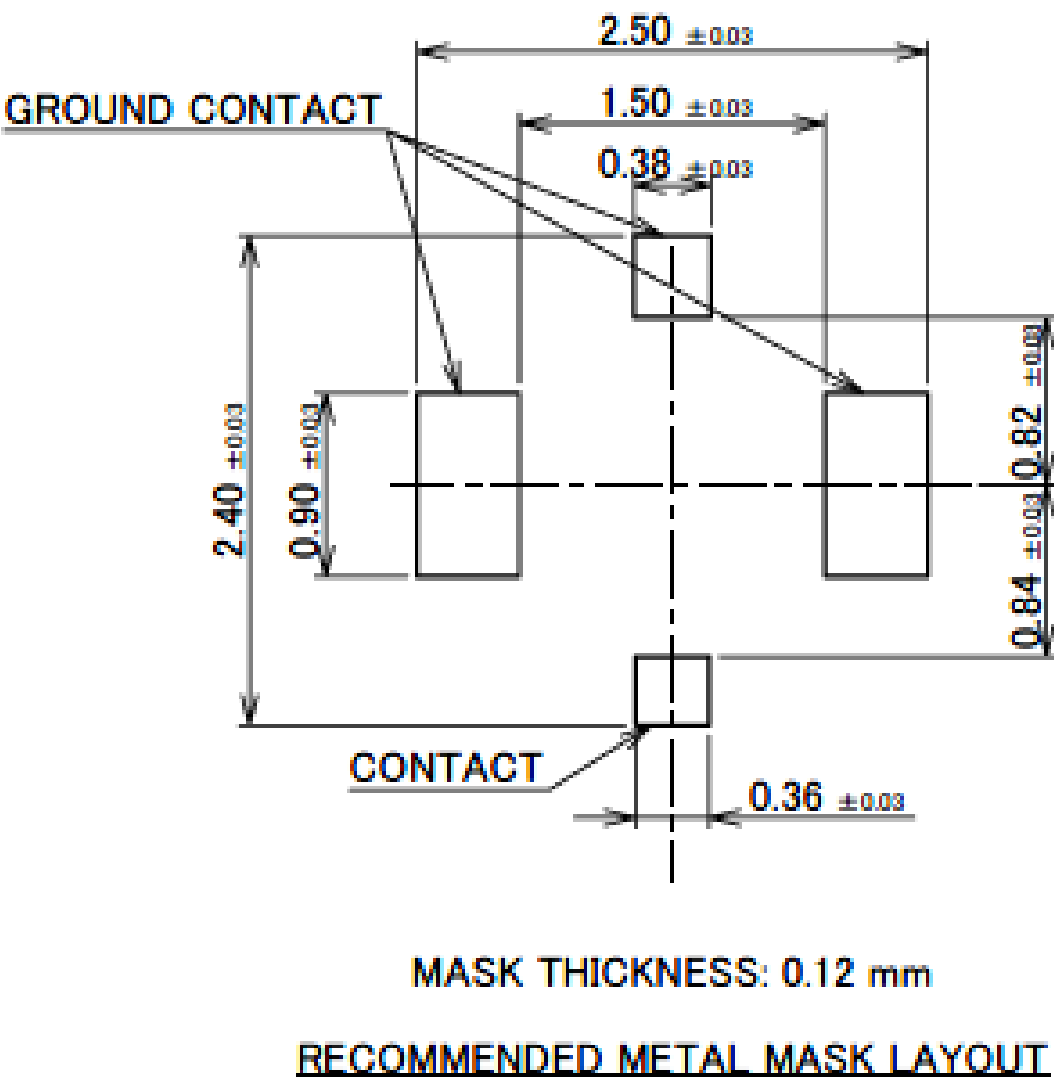
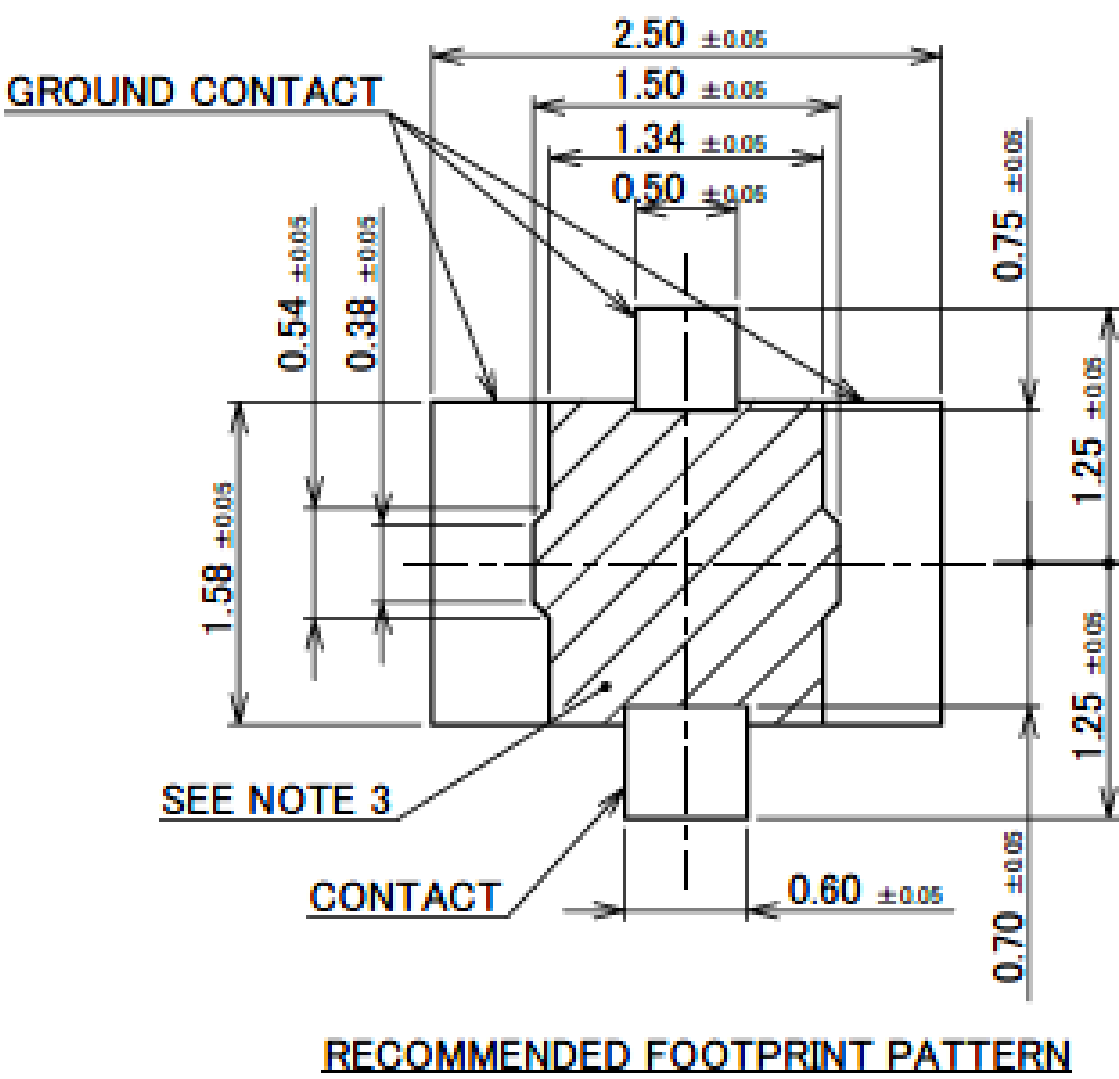
Rev.16

FOR MHF 4L PLUG

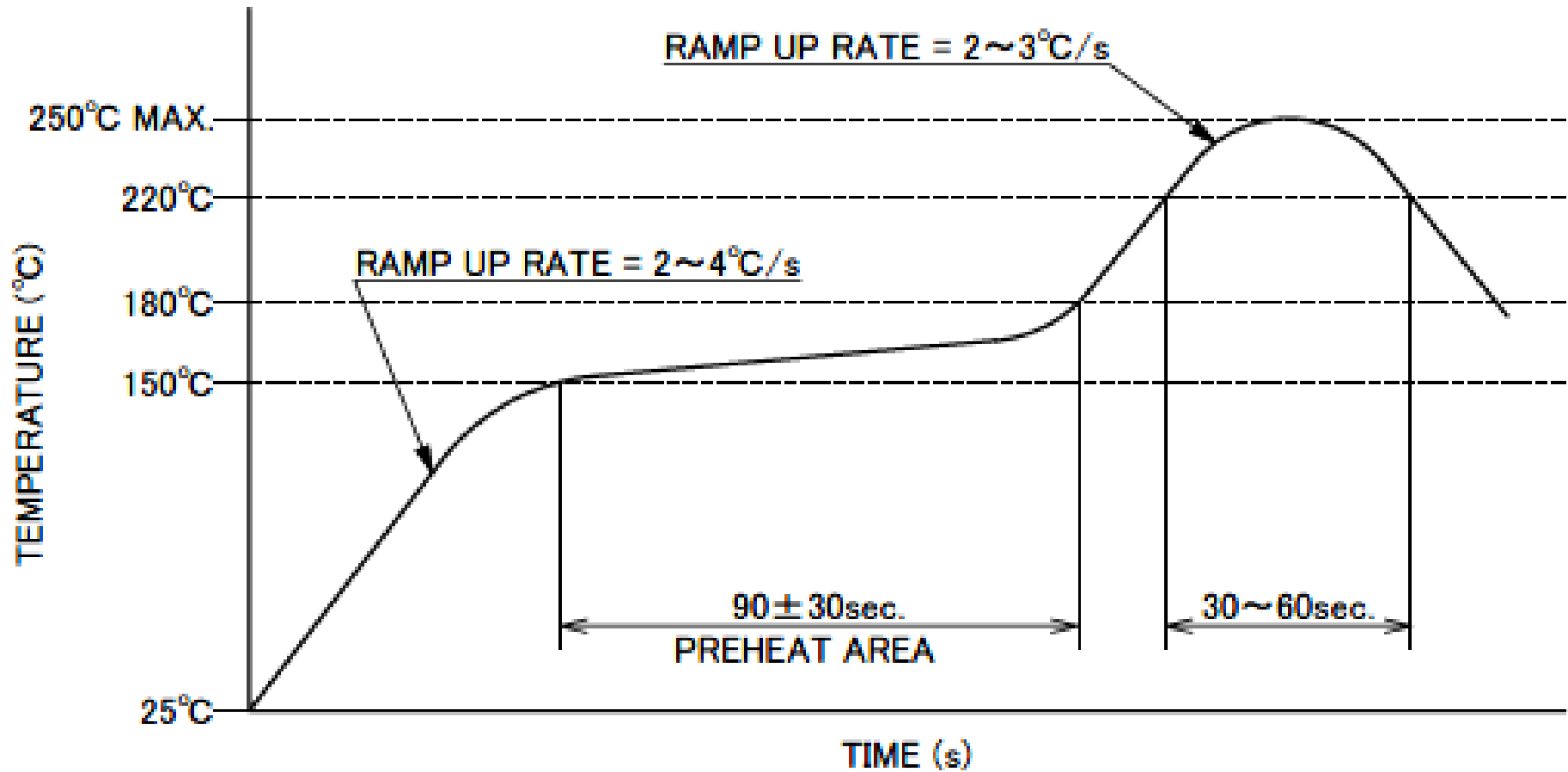
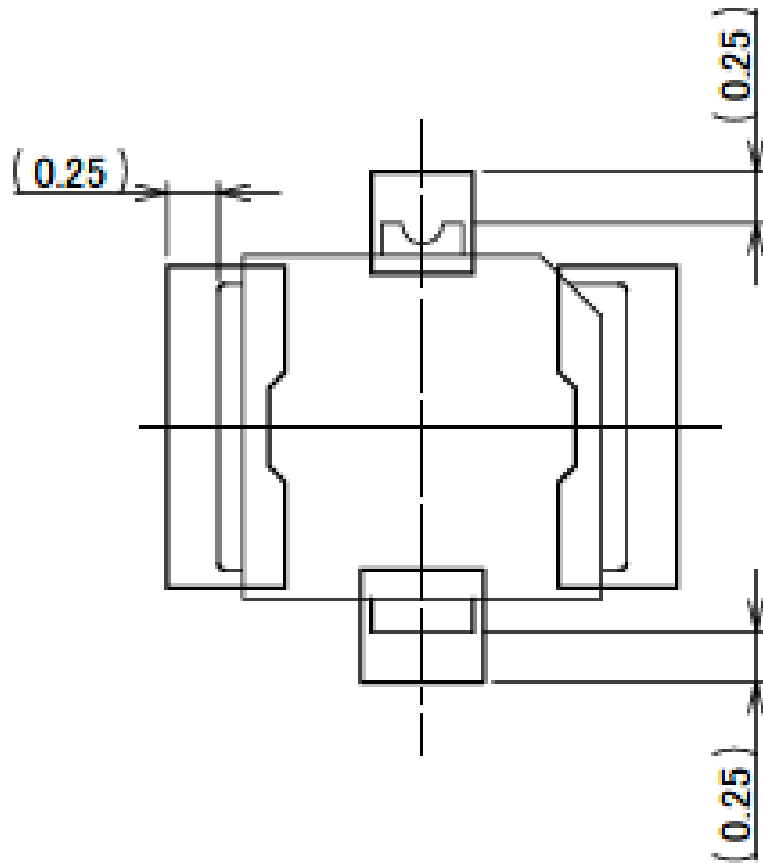
ITEMS	SPECIFICATION		
APPLICABLE CONNECTOR PART No.	20572-001R-08 (CABLE Φ0.81 TYPE)	20565-001R-13 (CABLE Φ1.13 TYPE)	20632-001R-37 (CABLE Φ1.37 TYPE)
RATING VOLTAGE	60 V AC (R.M.S)/DC		
RATING FREQUENCY	DC ~ 12GHz		
OPERATING TEMPERATURE	233 ~ 363 K(-40°C ~ +90°C)		
VSWR (MATED WITH SMA ADAPTER PART No. 90449-002)	1.30 MAX. AT 0.1 ~ 3GHz, 1.40 MAX. AT 3 ~ 6GHz, 1.50 MAX. 6 ~ 9GHz, 1.65 MAX. AT 9 ~ 12GHz		
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ΔR 20 mohm MAX.		
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ΔR 20 mohm MAX.		
INSULATION RESISTANCE	INITIAL : 500 Mohm MIN. / AFTER TEST : 100 Mohm MIN.		
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC 1 MINUTE		
DURABILITY	30 CYCLES		
MATING FORCE (INITIAL / AFTER TEST)	INITIAL : 30 N MAX. / AFTER TEST : 30 N MAX.		
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL : 20 N MAX. 5 N MIN. / AFTER TEST : 20 N MAX. 3 N MIN.		
PRODUCT SPECIFICATION	PRS-1907		PRS-2925
TEST REPORT	TR-14097		TR-24070
PACKING STANDARD	20579-001E: PST-14004 20579-001E-01: PST-14067		
INSTRUCTION MANUAL	HIM-12011	HIM-12012	HIM-16011
APPEARANCE CRITERIA No.	QLS-A***		

Rev.16

MHF® 4L Receptacle



MASK THICKNESS: 0.12 mm



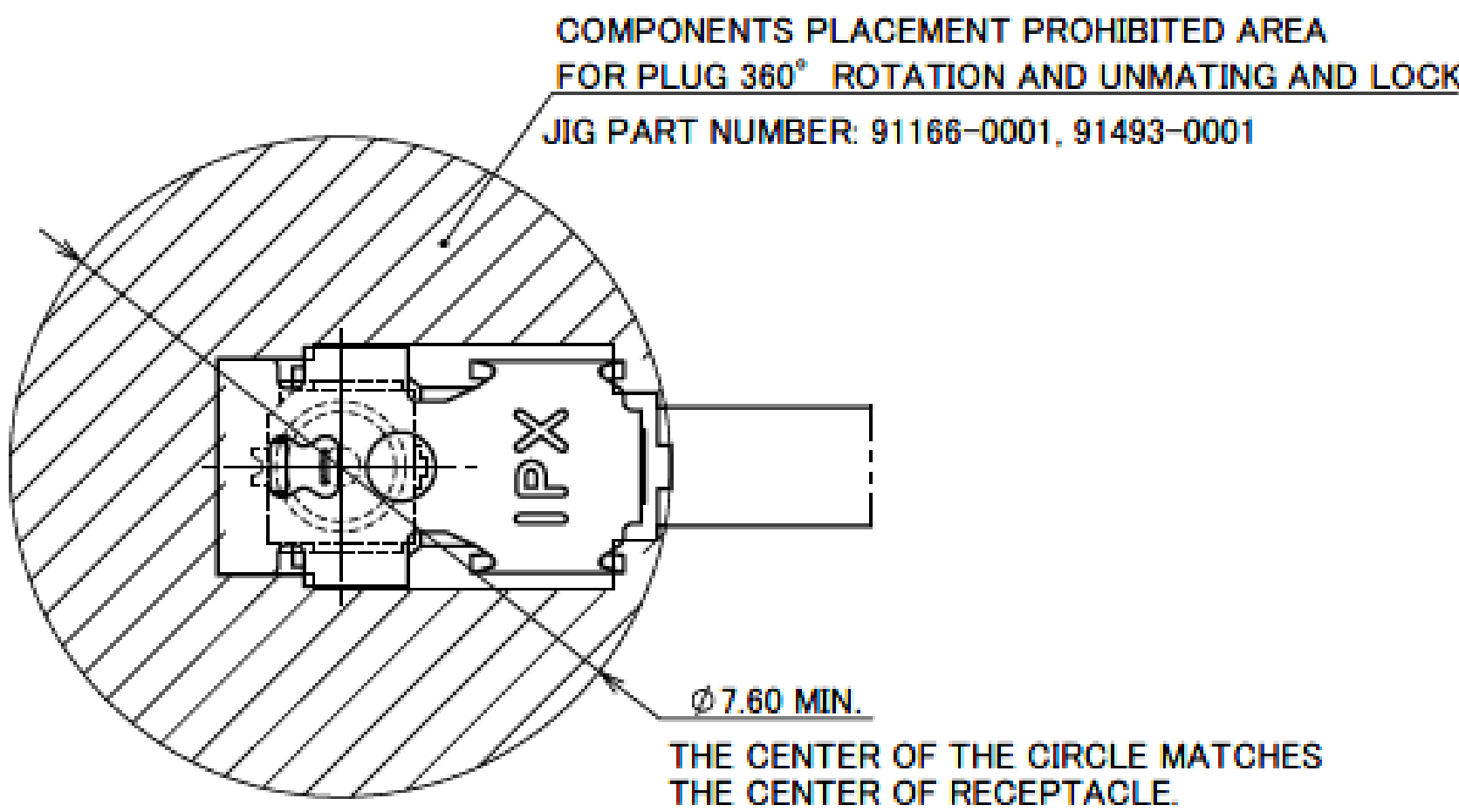
SENJU METAL INDUSTRY CO., LTD.: M705-SHF(Sn96.5 Ag3.0 Cu0.5)

NOTE 3. NO GROUND, SIGNAL, AND RESIST IN THIS AREA.

Rev.16

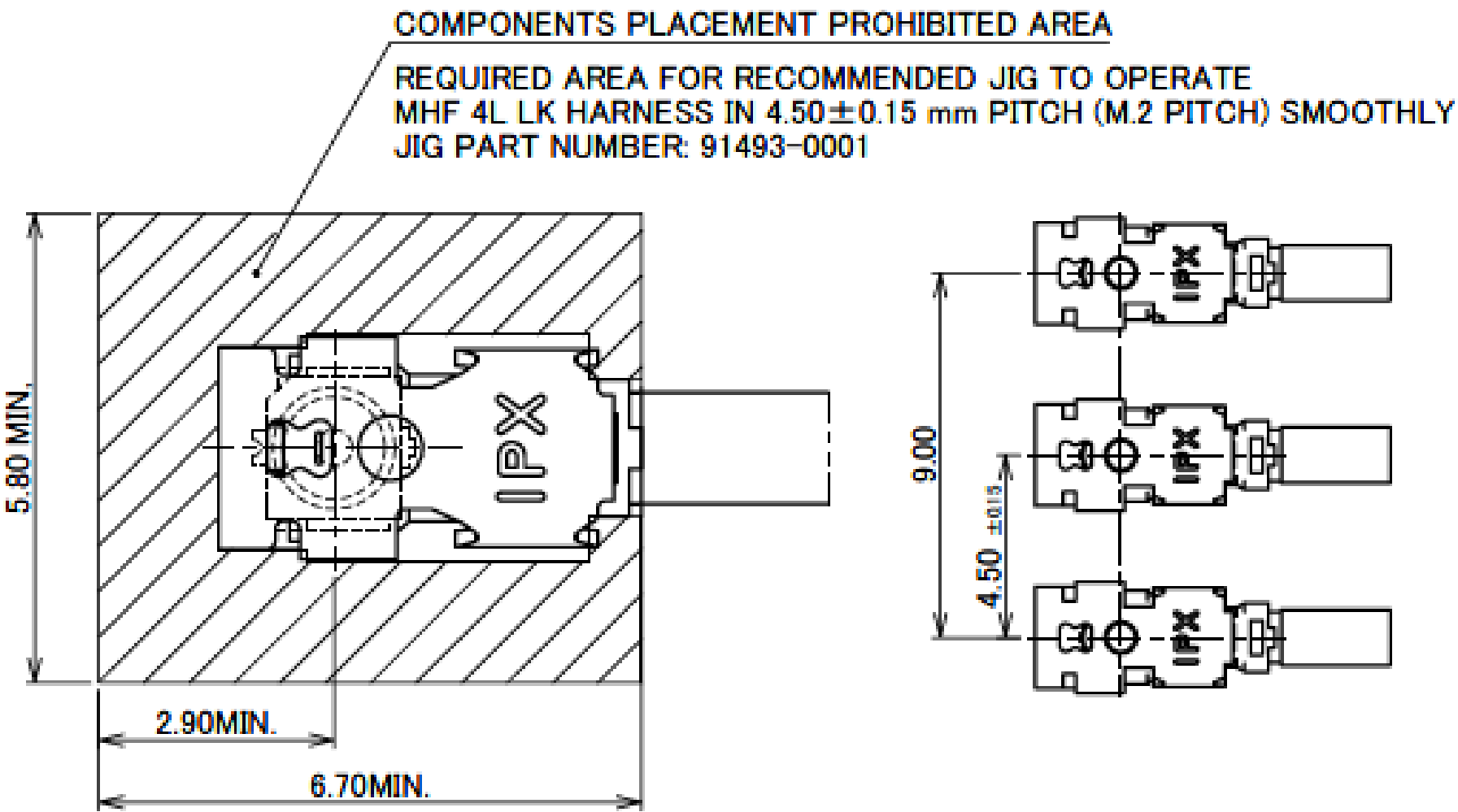
COMPONENT PLACEMENT PROHIBITED AREA
FOR MHF 4L RECEPTACLE MATED WITH MHF 4L LK HARNESS
REQUIRED AREA FOR RECOMMENDED JIG TO OPERATE

SINGLE CONNECTOR LAYOUT



MATING AND LOCK CONDITION
WITH MHF 4L LK HARNESS

MULTIPLE CONNECTORS LAYOUT

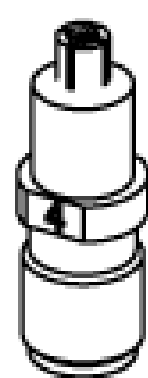


MATING AND LOCK CONDITION
WITH MHF 4L LK HARNESS NARROW PITCH

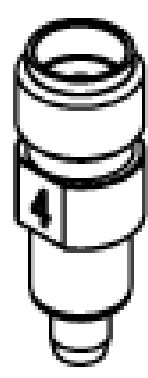
MHF 4L LK HARNESS UNLOCK CONDITION
NARROW PITCH DIMENSIONS
(S = 5 : 1)

Rev.16

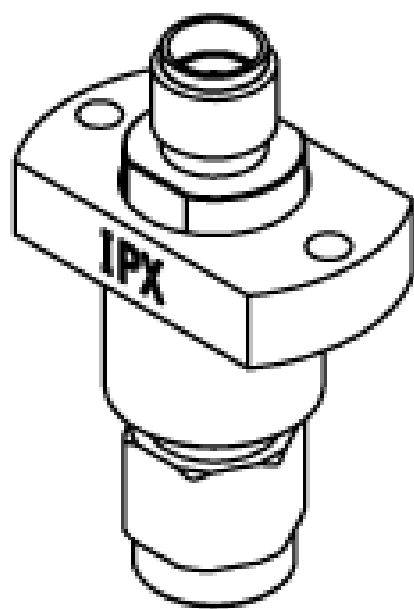
Accessories for MHF® 4 plug



MHF 4 (4L) SMA ADAPTER
PART NO. 90449-002

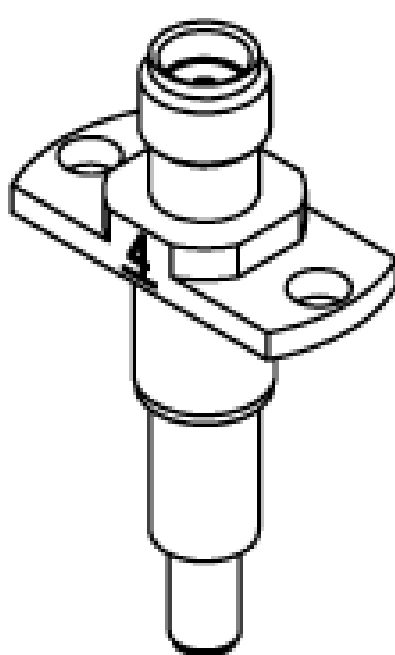


MHF 4 RECEPTACLE HIGH CYCLE ATTACHMENT
PART NO. 90683-0001

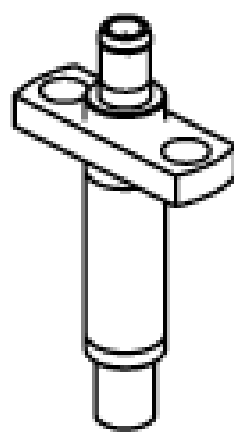


MHF SERIES HIGH CYCLE SMA ADAPTER BASE UNIT
PART NO. 90684-0001

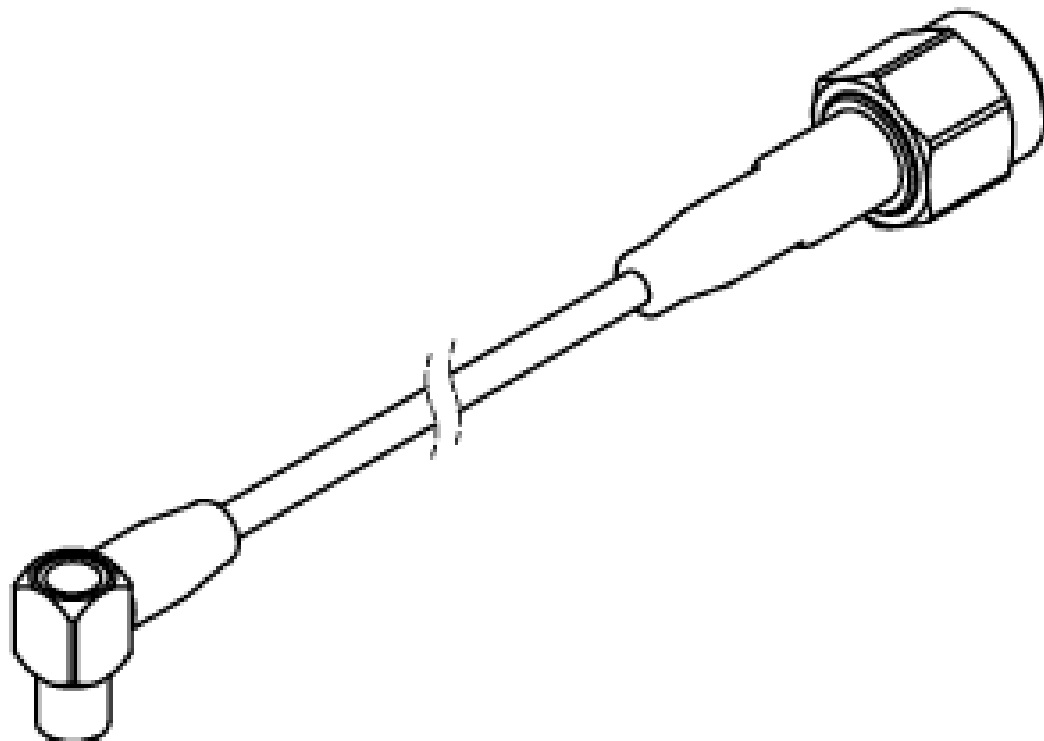
* 90683-0001 AND 90684-0001 SHOULD BE USED TOGETHER.



MHF 4 (4L) RECEPTACLE HIGH CYCLE SMA ADAPTER
PART NO. 90698-0001



MHF 4 (4L) RECEPTACLE HIGH CYCLE N45 C ADAPTER
PART NO. 90576-0001



MHF SERIES N45 C TO SMA ADAPTER CABLE
PART NO. 90577-****

* 90576-0001 AND 90577-**** SHOULD BE USED TOGETHER.

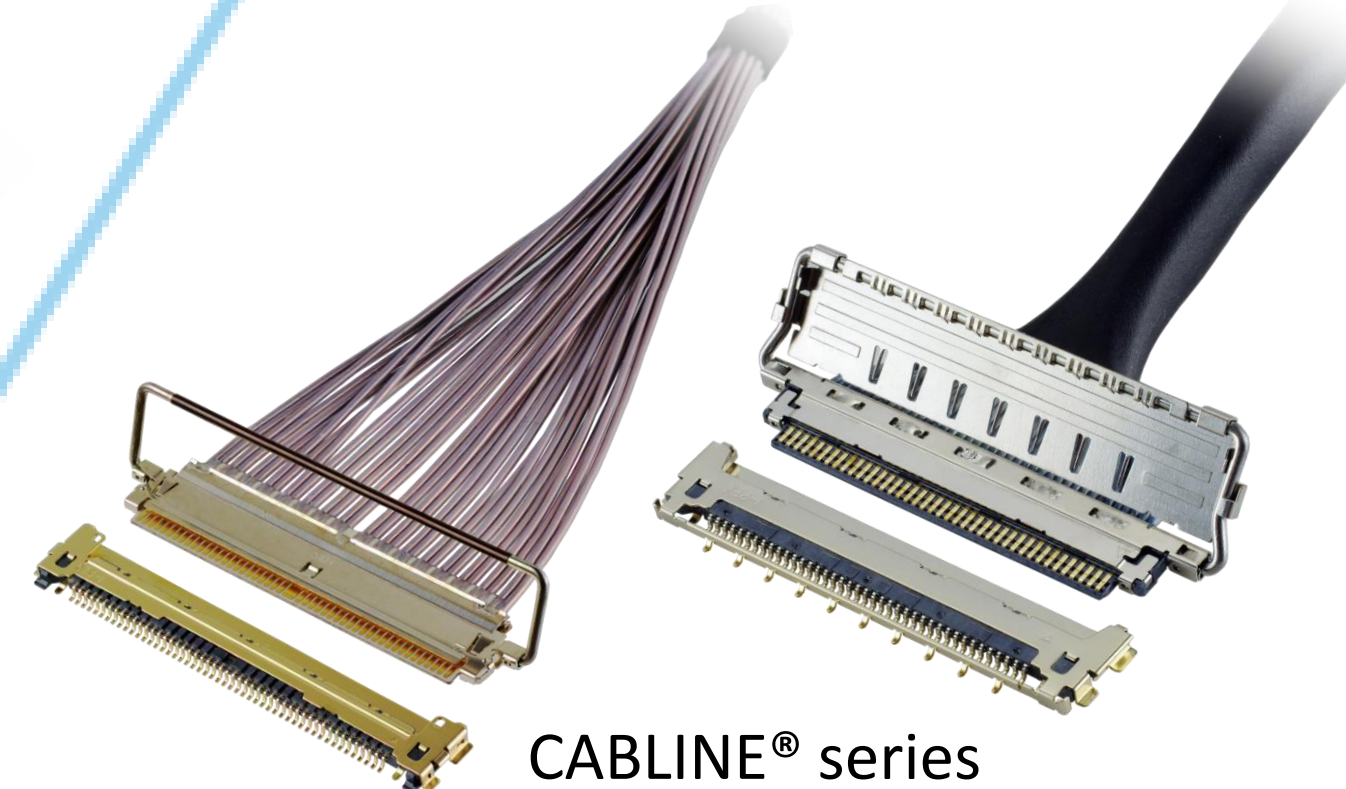
Custom Connectors Available

 RF
Connectors

MHF® series



Micro-coaxial/Twinax
Connectors

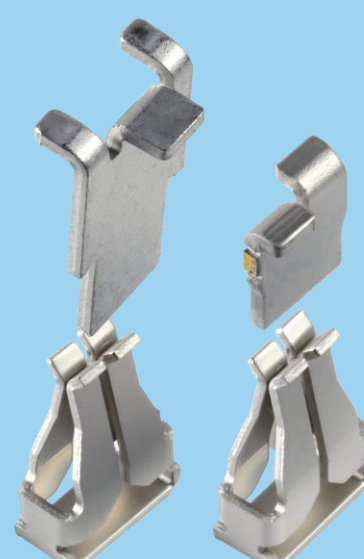


CABLIN® series

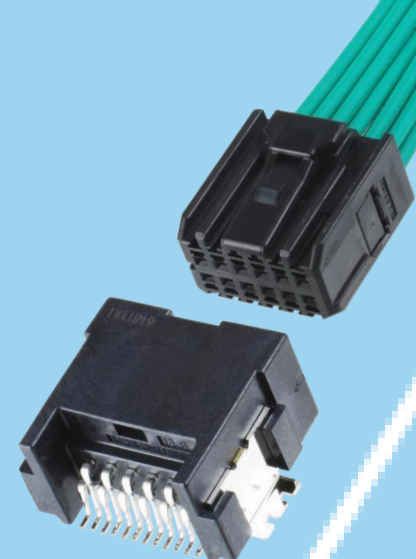


Wire-to-Board
Connectors/
Terminals

AP series



ISH® series



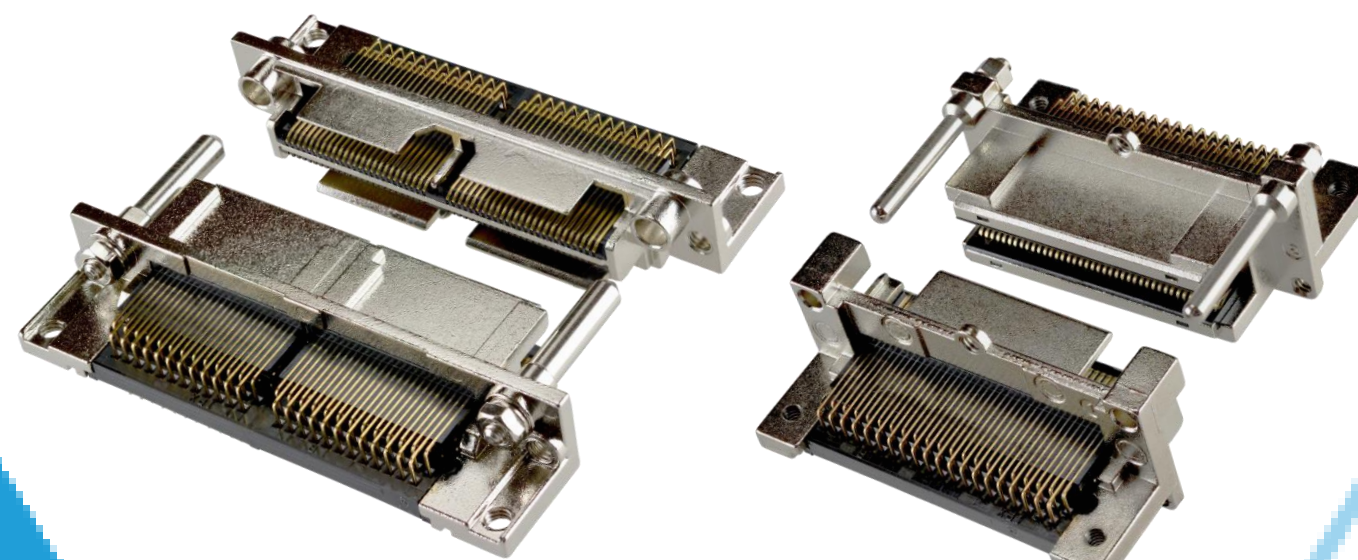
NOVASTACK® series



Board-to-Board
Connectors



I/O
Connectors



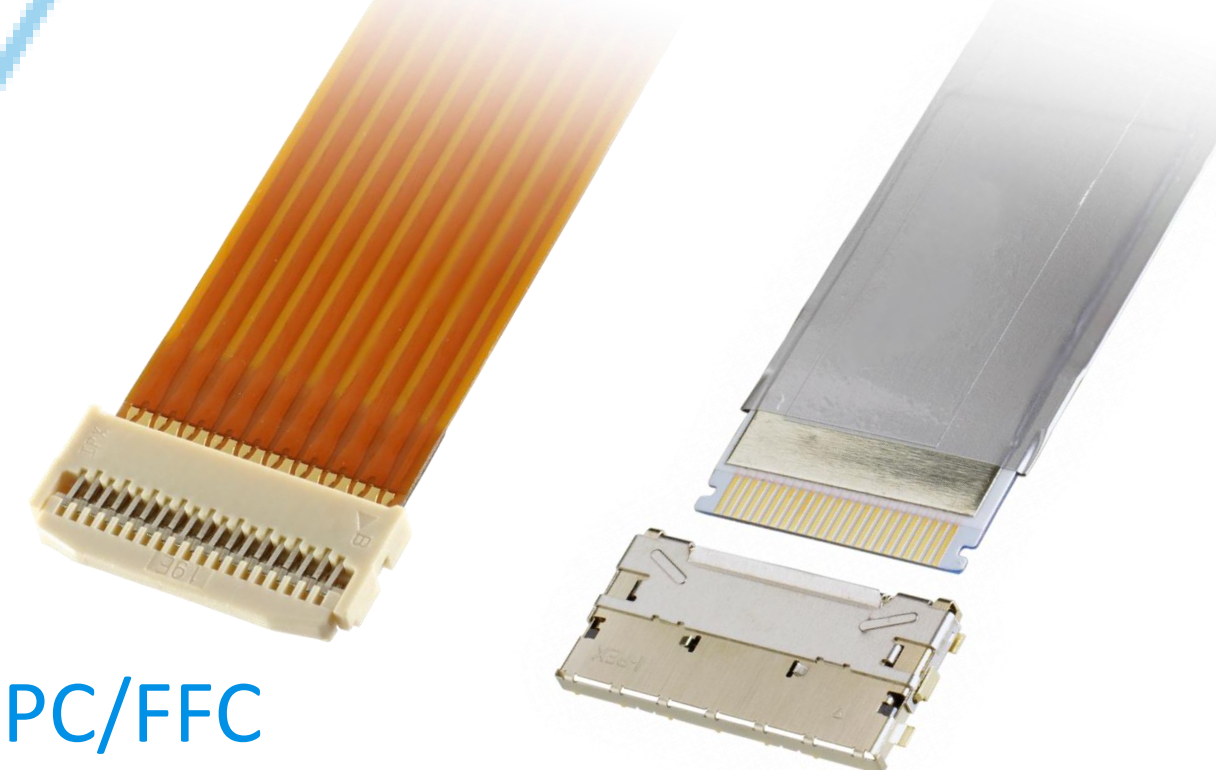
MINIDOCK™ series



FPC/FFC
Connectors

MINIFLEX® series

EVAFLEX® series



Inquiry



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