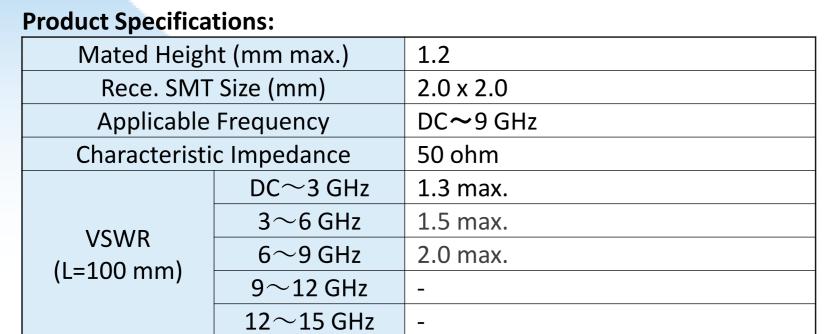
MHF® 4

저배 (결합 높이 1.2 mm max.),제한된 공간에서의 사용에 최적화



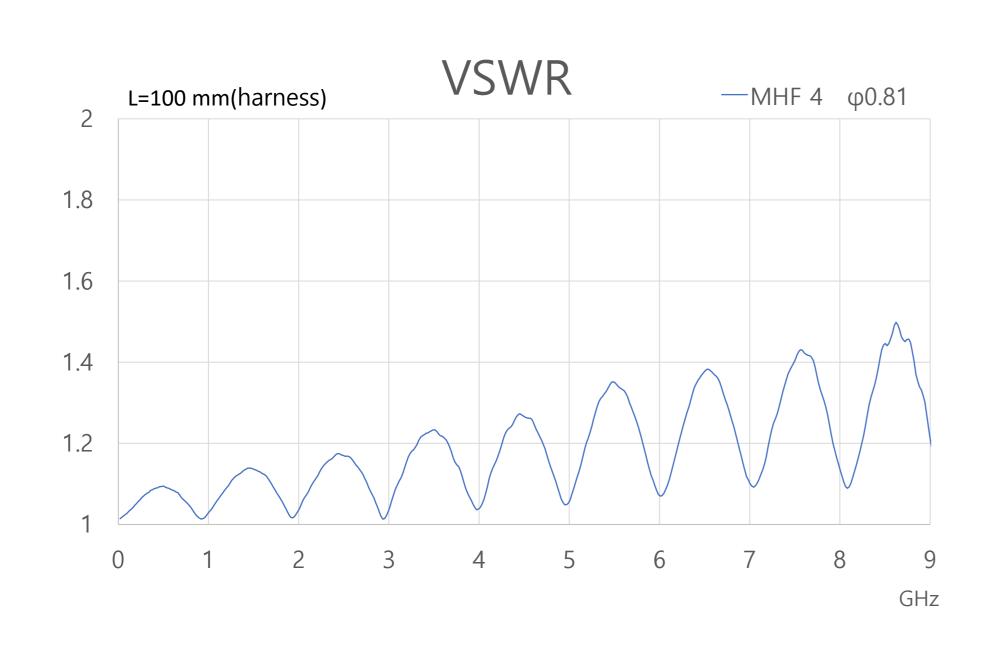
Ap	Applicable Cable Size:		
0	.D. 0.81 mm / AWG 36		
Ap	plicable Standards (Reference Only):		

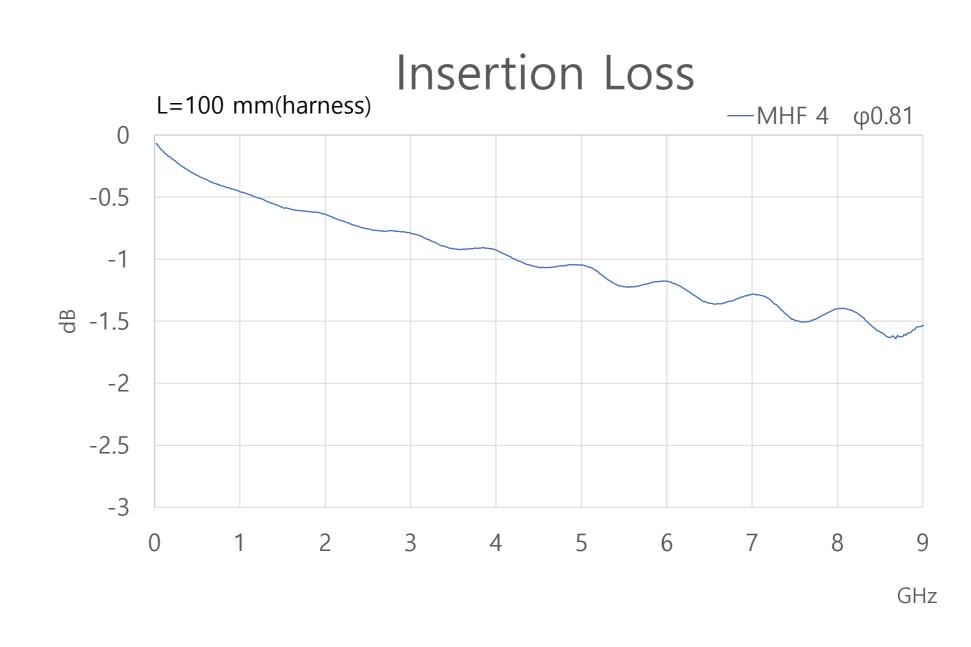
Applicable Standards (Reference Only):

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

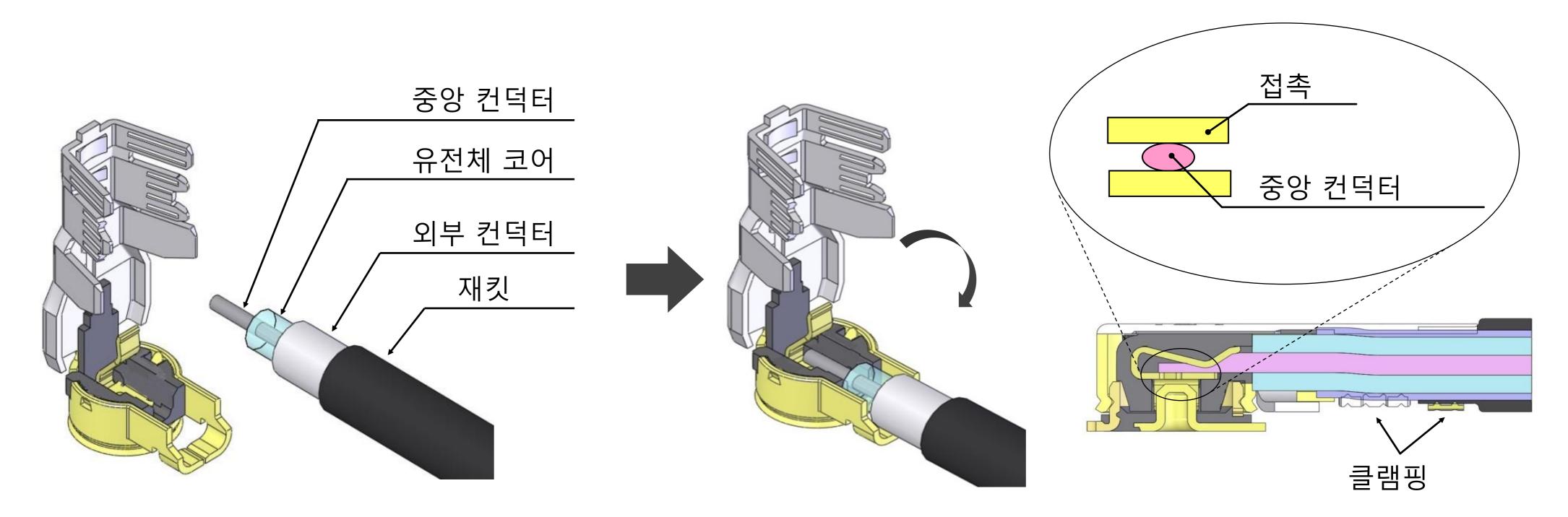


> 최소한의 제품 사이즈로, ~9GHz에서 우수한 퍼포먼스를 실현





▶ 신뢰성 높은 무납땜 결선 기술 "i-Fit®" 테크놀러지로, 안정된 성능의 하네스 제공

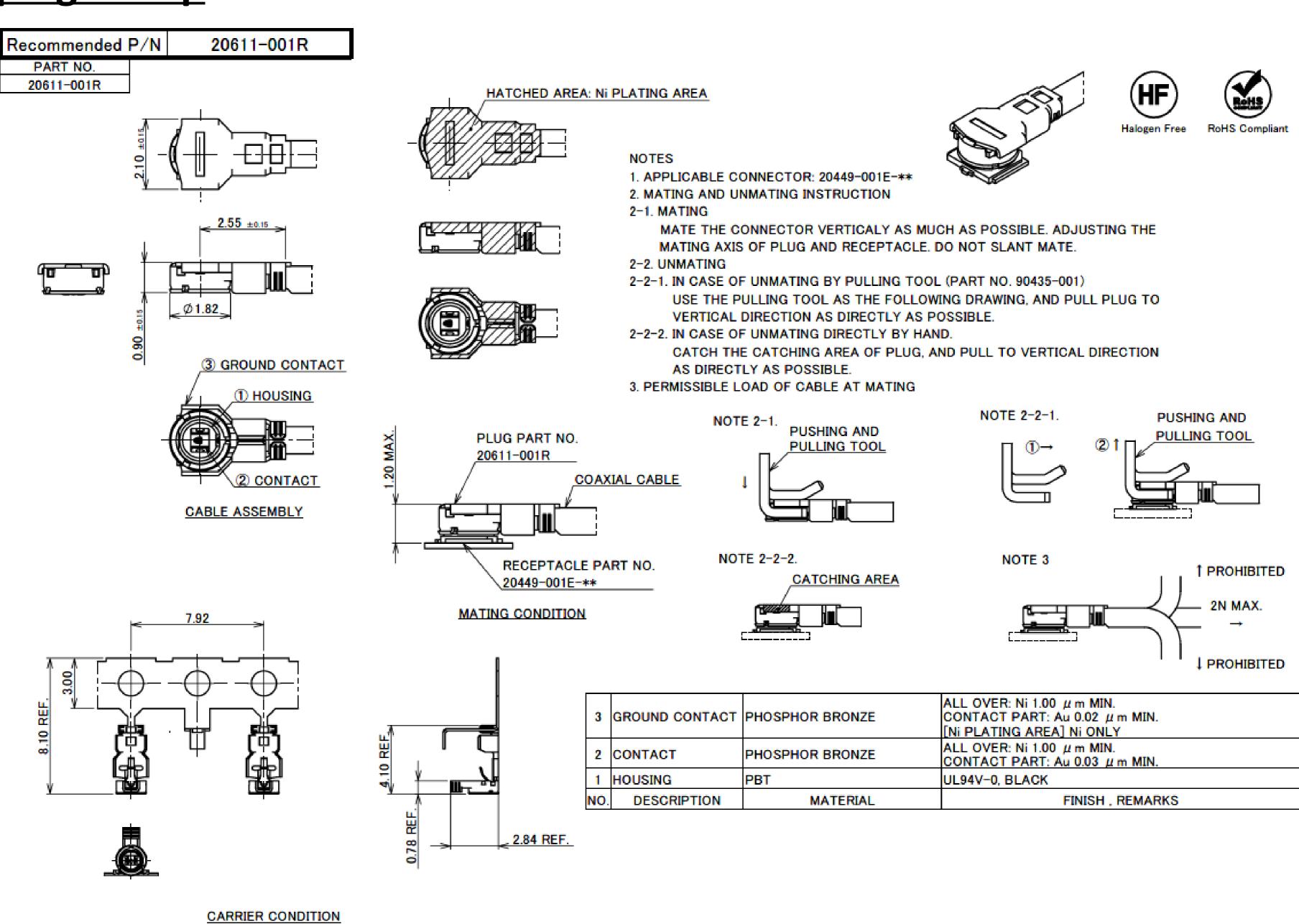


대응 케이블 :0.81 mm (36)

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 H	eight	1.7 mm max.	1.4 mm max.	1.2 mm max.	1.2 mm max.
	1.37 mm (AWG#30)				
	1.13 mm (AWG#32)				
Coax O.D. (Center Conductor AWG)	0.95 mm (AWG#33)		•		
(30.1101 30.114.4101.7111.3)	0.81 mm (AWG#36)				•
	0.64 mm (AWG#36)				
Receptacle		MH	F 4L / MHF 4 recept	acle	MHF 4L / MHF 4 receptacle

Component Parts Details

MHF® 4 plug Ni top



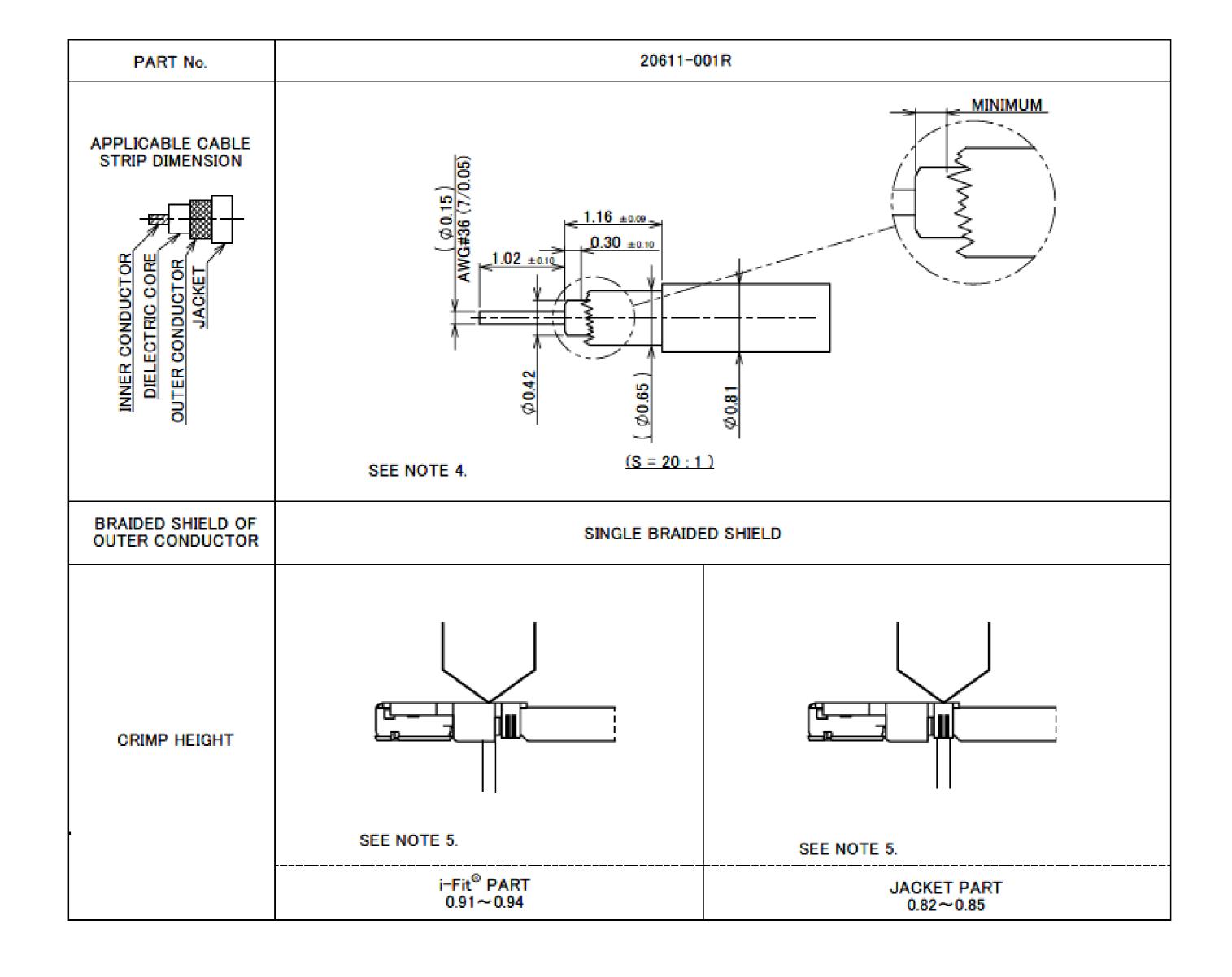


S = 5:1

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: ∠R 20 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: ∠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

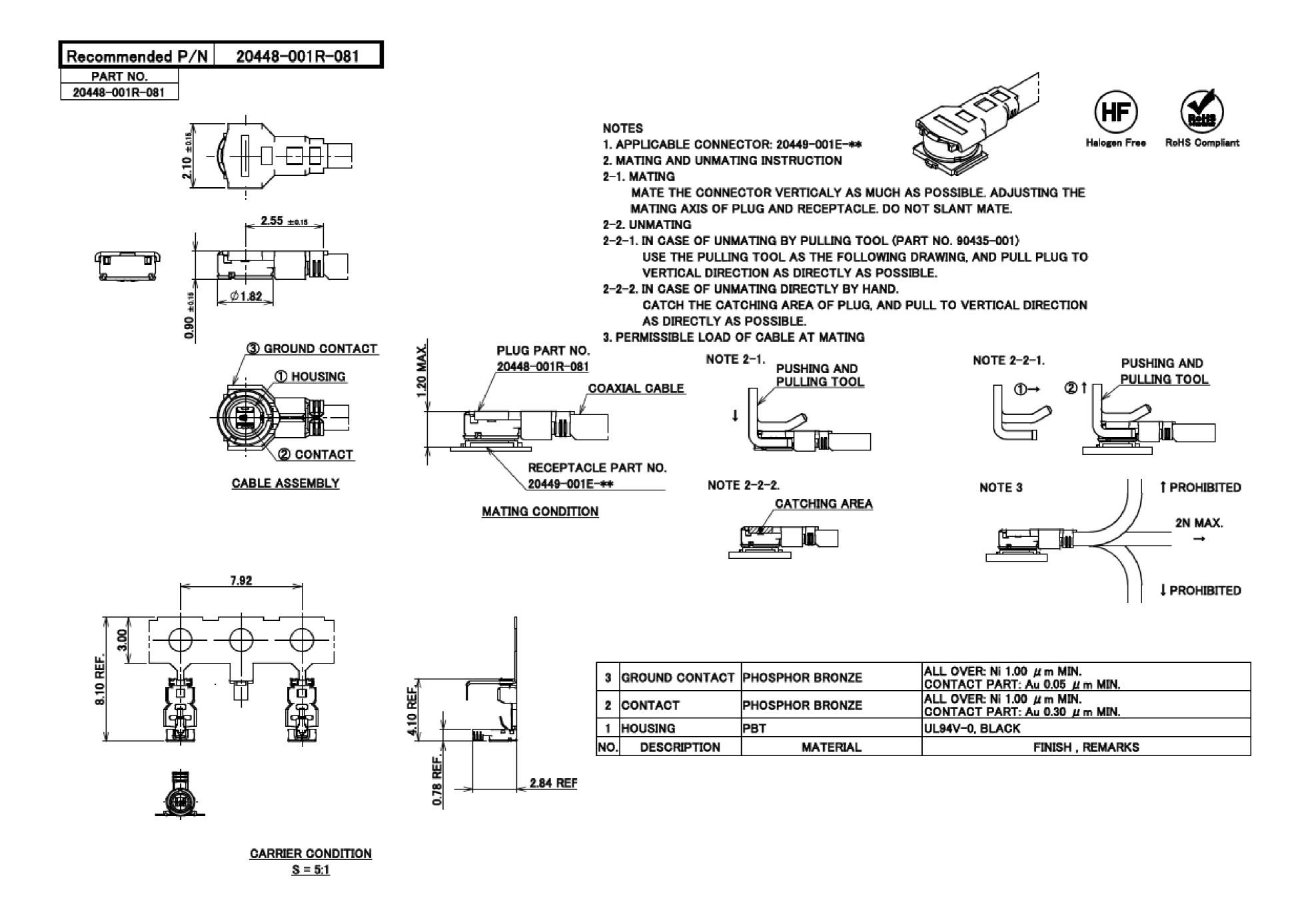


NOTES.

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



MHF® 4 plug Au



Rev.7

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: ∠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
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***

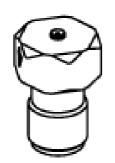


MHF® 4 plug Au

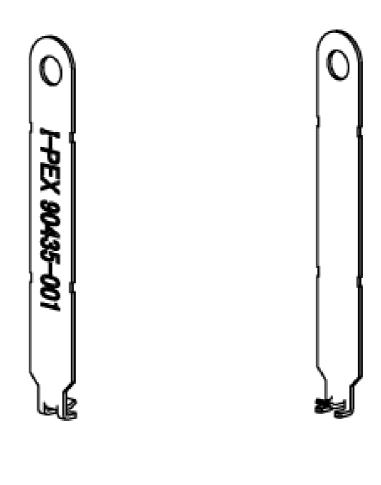
ITEMS	SPECIFICATION
APPLICABLE CONNECTOR PART NO.	20449-001E-**
RATING VOLTAGE	60 V AC (R.M.S) / DC
RATING FREQUENCY	DC~9GHz
OPERATING TEMPERATURE	233~363 K (−40°C~+90°C)
VSWR (MATED WITH SMA ADAPTER PART No. 90449-001)	1.30 MAX. AT 0.1~3GHz, 1.50 MAX. AT 3~6GHz, 2.00 MAX. AT 6~9GHz
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: ∠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
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***

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

FRONT SIDE

BACK SIDE

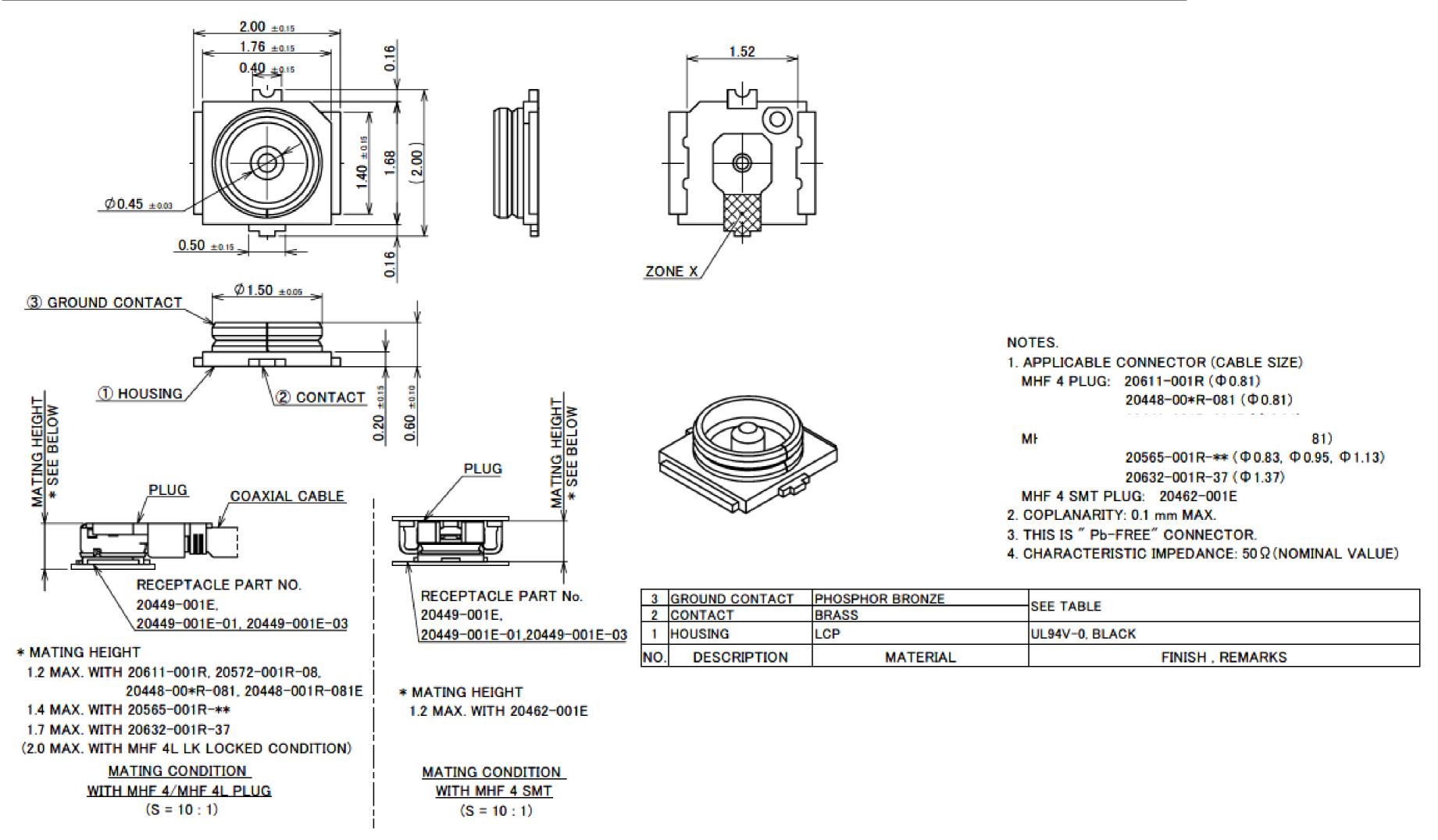
I-PEX

MHF® 4 Receptacle

Recommende	d P/N 20449-001	IE-03					
PART NO.	PACKING QUANTITY / REEL		CONTACT PLATING		GRO	UND CONTACT PLATING	
PART NO.	PACKING QUANTITY REEL	CONTACT PART	SOLDERING PART	ALL OVER	CONTACT PART	SOLDERING PART	ALL OVER
20449-001E		TOD: An ODE or as MIN	TOP		TOD: 4:: 0.02 :: MIN	TOD: A.: 0.01 // MIN	
20449-001E-01	10,000 PCS.	TOP: Au 0.05 μ m MIN.	OTHER: Au 0.01 μ m MIN. ZONE X: Au 0.03 μ m MIN.	Ni 1.00 μ m MIN.	TOP: Au 0.03 μ m MIN.	TOP: Au 0.01 μ m MIN.	Ni 1.00 μ m MIN.
20449-001E-03		TOP: Au 0.01 μ m MIN. MIDDLE: Pd-Ni 0.02 μ m MII	TOP: Au 0.01 μ m MIN. MIDDLE: Pd-Ni 0.02 μ m MIN.			TOP: Au 0.01 μ m MIN. MIDDLE: Pd-Ni 0.02 μ m MIN.	







Rev.21

FOR MHF 4 PLUG

ITEMS	SPECIFIC	CATION	
APPLICABLE CONNECTOR PART No.	20611-001R (CABLE Φ0.81 TYPE)	20448-001R (CABLE Φ 0.81 TYPE)	
RATING VOLTAGE	60 V AC (F	R.M.S)/DC	
RATING FREQUENCY	DC~9	9GHz	
OPERATING TEMPERATURE	233∼363 K (−4	40°C∼+90°C)	
CHARACTERISTIC IMPEDANCE	50 ohm (NOMI	NAL 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 100 mohm MAX.	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)	-		
UNMATING FORCE (INITIAL / AFTER TEST)	INITIAL : 4 N MIN. / AFTER TEST : 2 N MIN.		
PRODUCT SPECIFICATION	PRS-2530 PRS-1745		
TEST REPORT	TR-18086 TR-12118		
PACKING STANDARD	20449-001E-03: 300-604		
INSTRUCTION MANUAL	HIM-10003		
APPEARANCE CRITERIA No.	QLS-A***		



MHF® 4 Receptacle

FOR MHF 4L PLUG

ITEMS		SPECIFI	CATION	_
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°C ~+90°C)	
CHARACTERISTIC IMPEDANCE		50 ohm (NOM	INAL VALUE)	
VSWR (MATED WITH SMA ADAPTER PART No. 90449-002)	1.3	0 MAX. AT 0.1∼3GHz, 1.40 MAX.	AT 3∼6GHz, 1.55 MAX. AT 6∼9	GHz
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. / A	FTER TEST : 20 N MAX. 3 N MIN.	
PRODUCT SPECIFICATION	PRS-1944 (CABLE Φ0.64 TYPE) PRS-1772 (CABLE Φ0.81 TYPE)	PRS-2051 (CABLE Φ 0.95 TYPE) PRS-1772 (CABLE Φ 1.13 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			HIM-16011
APPEARANCE CRITERIA No.	QLS-A***			

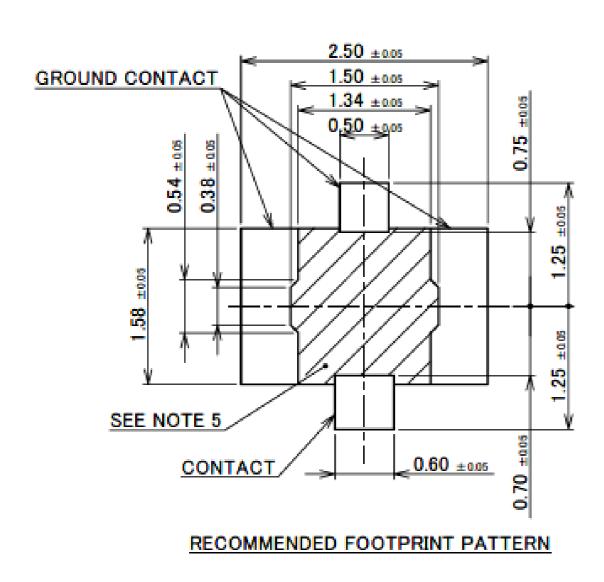
Rev.21

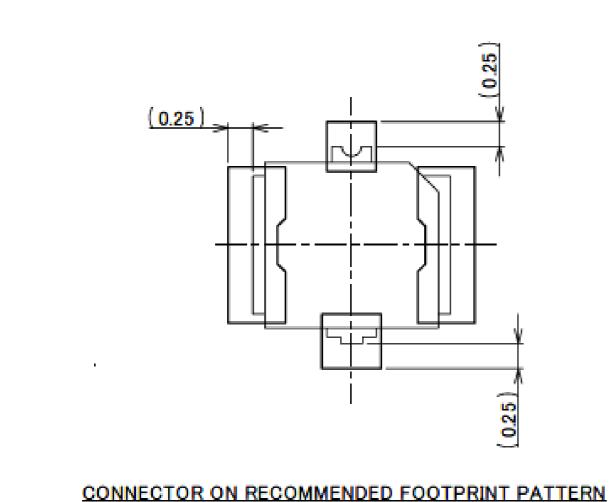
FOR MHF 4 SMT PLUG

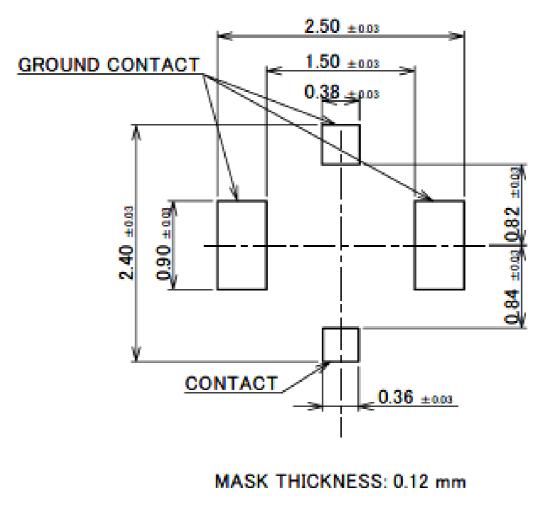
ITEMS	SPECIFICATION
APPLICABLE CONNECTOR PART No.	20462-001E (MHF 4 SMT PLUG)
RATING VOLTAGE	60 V AC (R.M.S)/DC
RATING FREQUENCY	DC~9GHz
OPERATING TEMPERATURE	233~363 K(−40°C~+90°C)
CHARACTERISTIC IMPEDANCE	50 ohm (NOMINAL VALUE)
VSWR MATED WITH SMA ADAPTER PART No. 90449-002)	1.30 MAX. AT 0.1∼3GHz, 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***



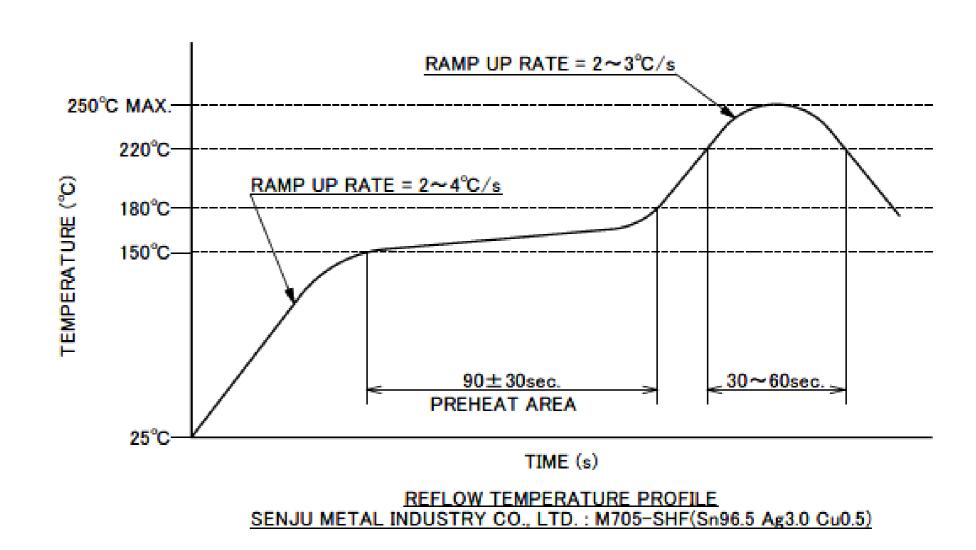
MHF® 4 Receptacle







RECOMMENDED METAL MASK LAYOUT

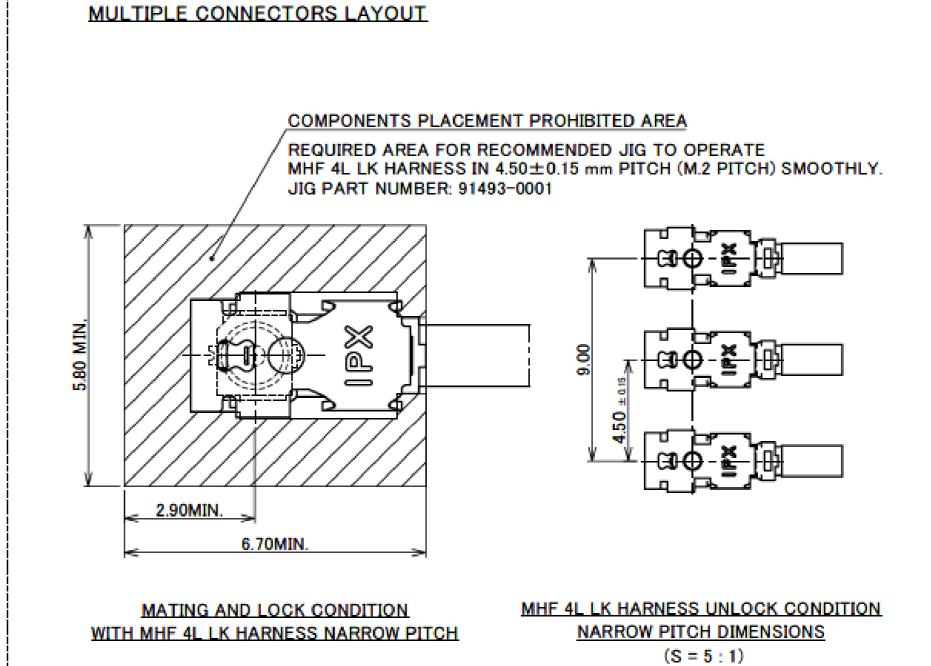


NOTE 5. NO GROUND, SIGNAL, AND RESIST IN THIS AREA.

Rev.21

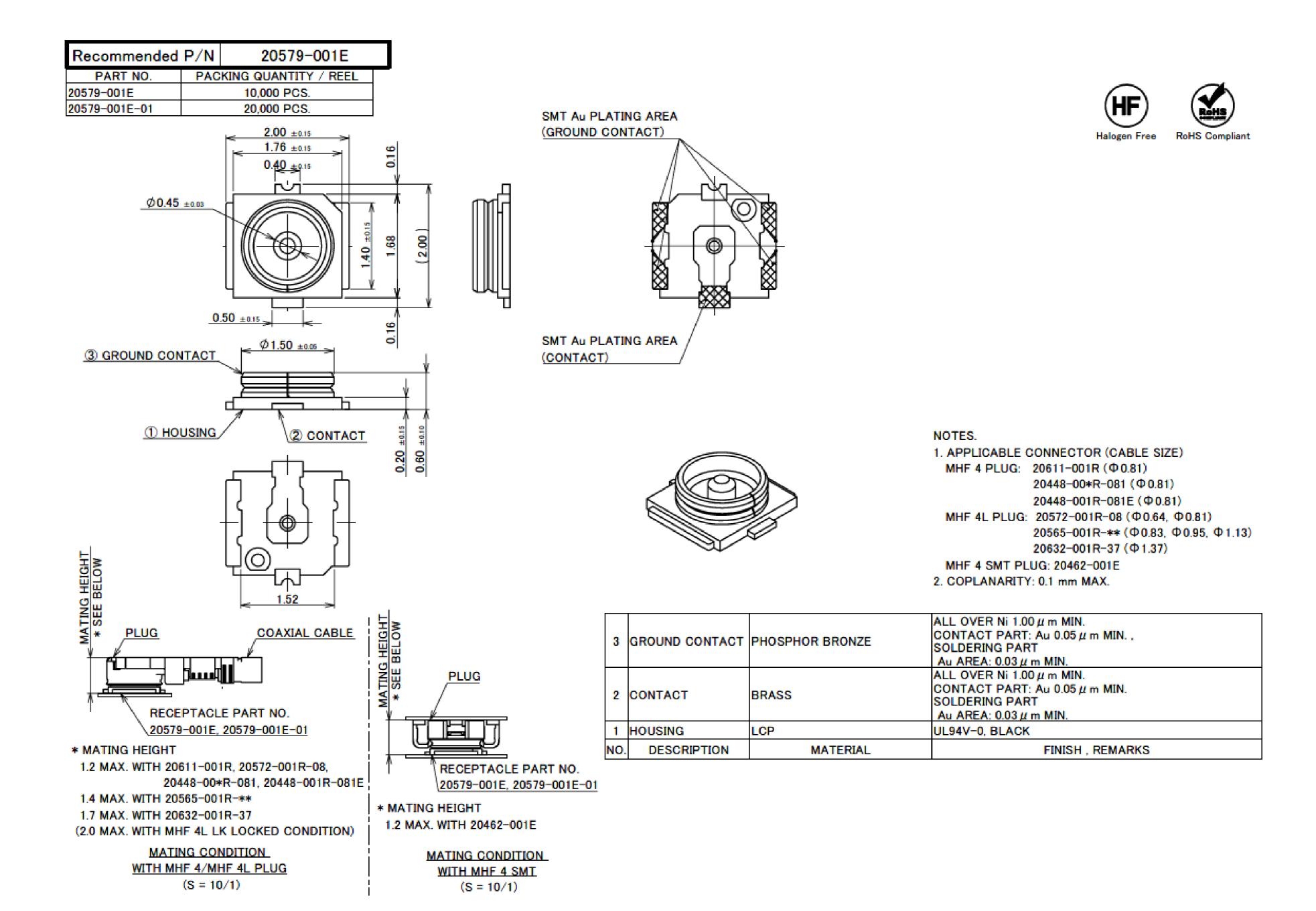
COMPONENT PLACEMENT PROHIBITED AREA FOR MHF 4 RECEPTACLE MATED WITH MHF 4L LK HARNESS REQUIRED AREA FOR RECOMMENDED JIG TO OPERATE

COMPONENTS PLACEMENT PROHIBITED AREA FOR PLUG 380° ROTATION AND UNMATING AND LOCK JIG PART NUMBER: 91166–0001, 91493–0001 THE CENTER OF THE CIRCLE MATCHES THE CENTER OF RECEPTACLE. MATING AND LOCK CONDITION WITH MHF 4L LK HARNESS



I-PEX

MHF® 4L Receptacle



Rev.14

FOR MHF 4L PLUG

ITEMS	SPECIFICATION		
APPLICABLE CONNECTOR PART No.	20572-001R-08 (CABLE Φ0.81 TYPE)	20565-001E-13 (CABLE Φ1.13 TYPE)	
RATING VOLTAGE	60 V AC (R.M	.S)/DC	
RATING FREQUENCY	DC ~ 120	GHz	
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	1.50 MAX. 6~9GHz. 1.65 MAX. AT 9~12GHz	
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-1907		
TEST REPORT	TR-14097		
PACKING STANDARD	20579-001E: PST-14004 20579-001E-01: PST-14067		
INSTRUCTION MANUAL	HIM-12011 HIM-12012		
APPEARANCE CRITERIA No.	QLS-A***		

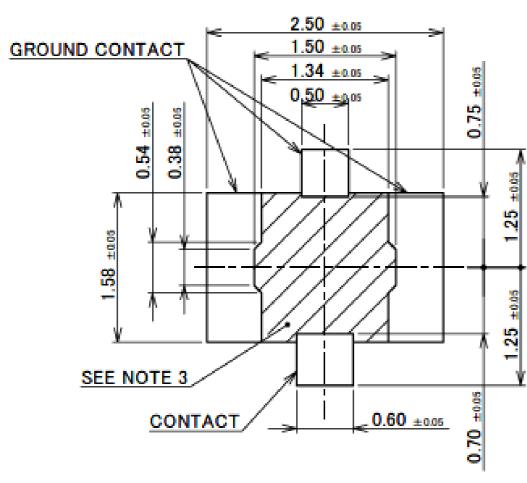


MHF® 4L Receptacle

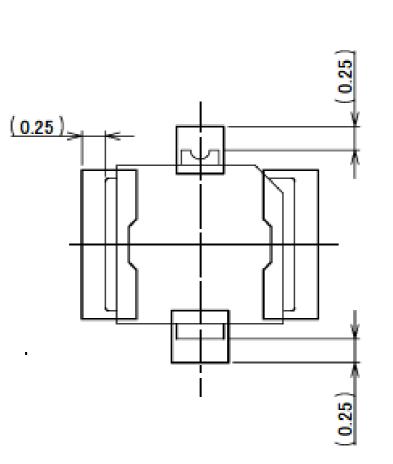
FOR MHF 4 SMT PLUG

ITEMS	SPECIFICATION	
APPLICABLE CONNECTOR PART No.	20462-001E (MHF 4 SMT PLUG)	
RATING VOLTAGE	60 V AC (R.M.S)/DC	
RATING FREQUENCY	DC~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: ⊿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	20579-001E: PST-14004 20579-001E-01: PST-14067	
APPEARANCE CRITERIA No.	QLS-A***	

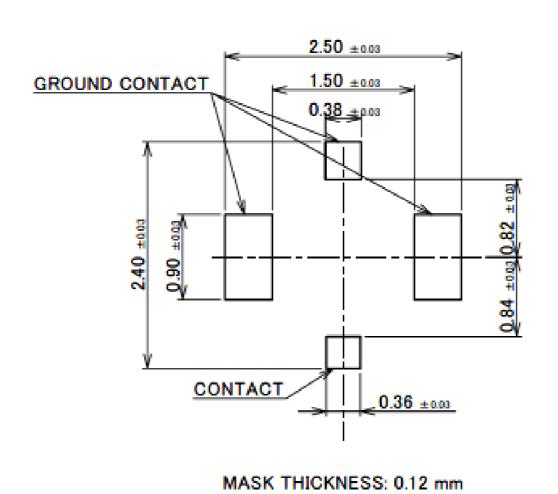
Rev.14



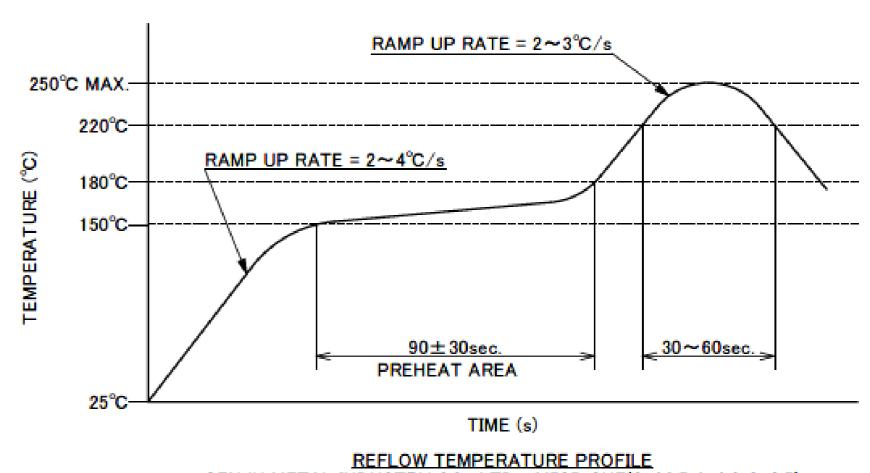
RECOMMENDED FOOTPRINT PATTERN



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN



RECOMMENDED METAL MASK LAYOUT



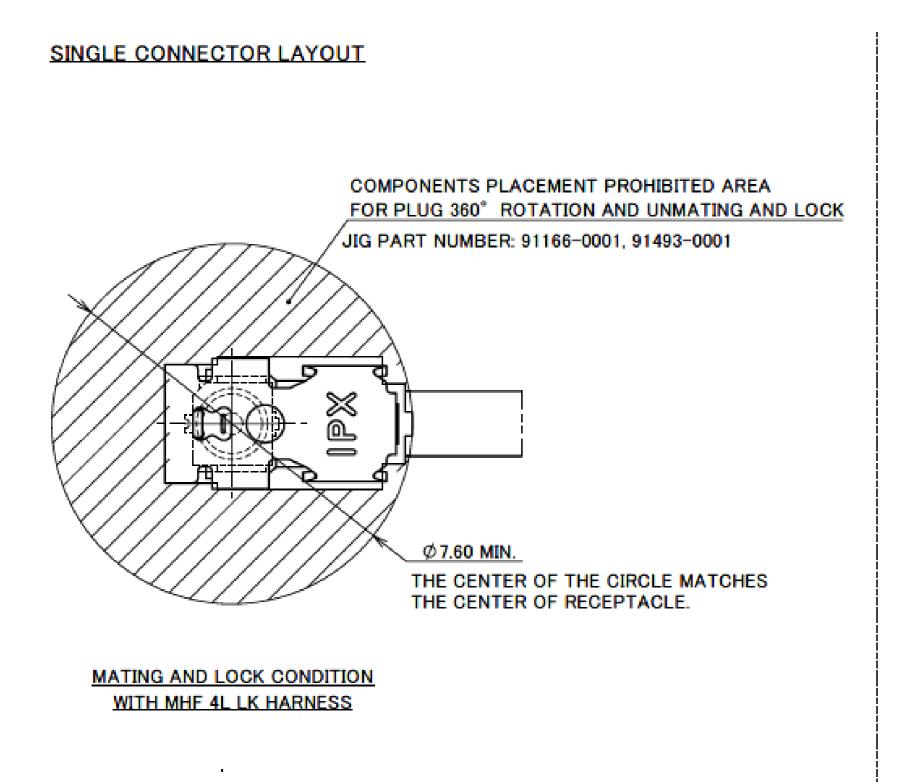
REFLOW TEMPERATURE PROFILE
SENJU METAL INDUSTRY CO., LTD.: M705-SHF(Sn96.5 Ag3.0 Cu0.5)

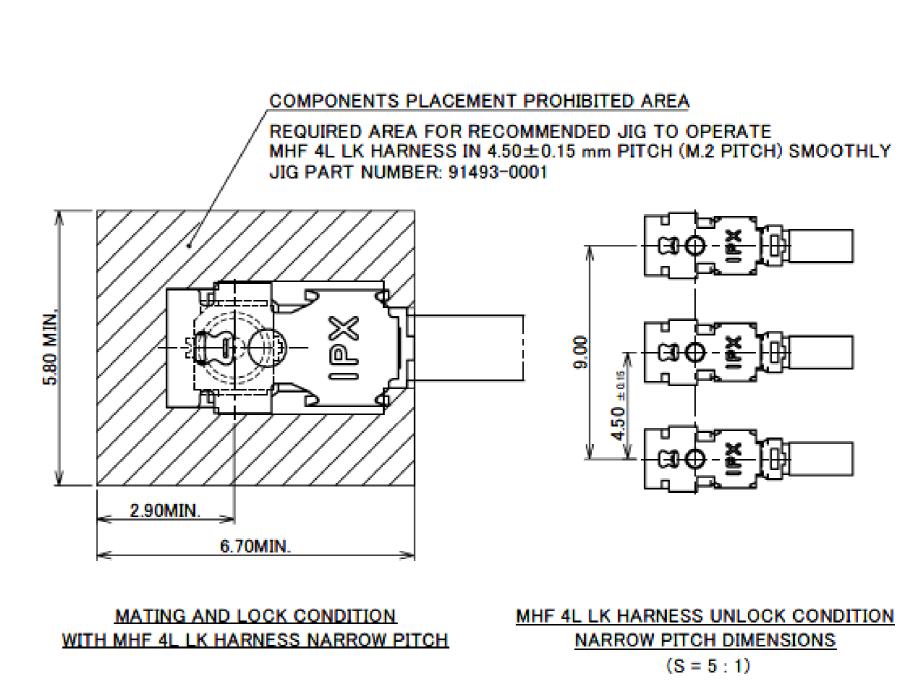
NOTE 3. NO GROUND, SIGNAL, AND RESIST IN THIS AREA.



MHF® 4L Receptacle

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

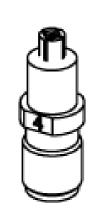




MULTIPLE CONNECTORS LAYOUT

Rev.14

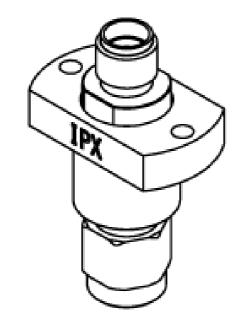
Accessories for MHF® 4 plug



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

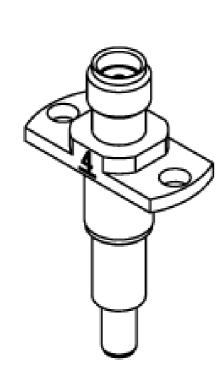


MHF 4 RECEPTACLE HIGH CYCLE ATTACHMENT
PART NO. 90683-0001

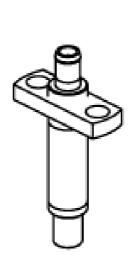


MHF SERIES HIGH CYCLE SMA ADAPTER BASE UNIT PART NO. 90684-0001

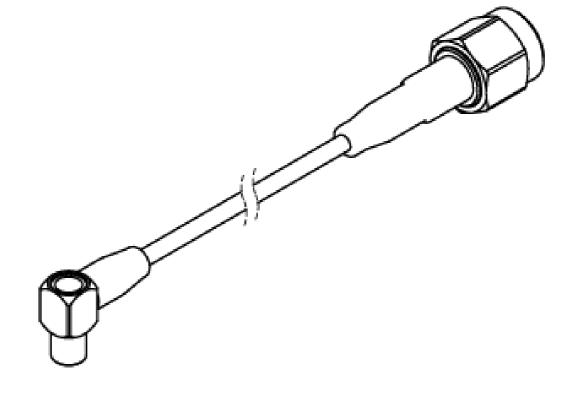
* 90683-0001 AND 90684-0001 SHOULD BE USED TOGETHER.



MHF4(4L) RECEPTACLE HIGH CYCLE SMA ADAPTER
PART NO. 90698-0001



MHF4(4L) RECEPTACLE HIGH CYCLE N45 C ADAPTER
PART NO. 90576-0001



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

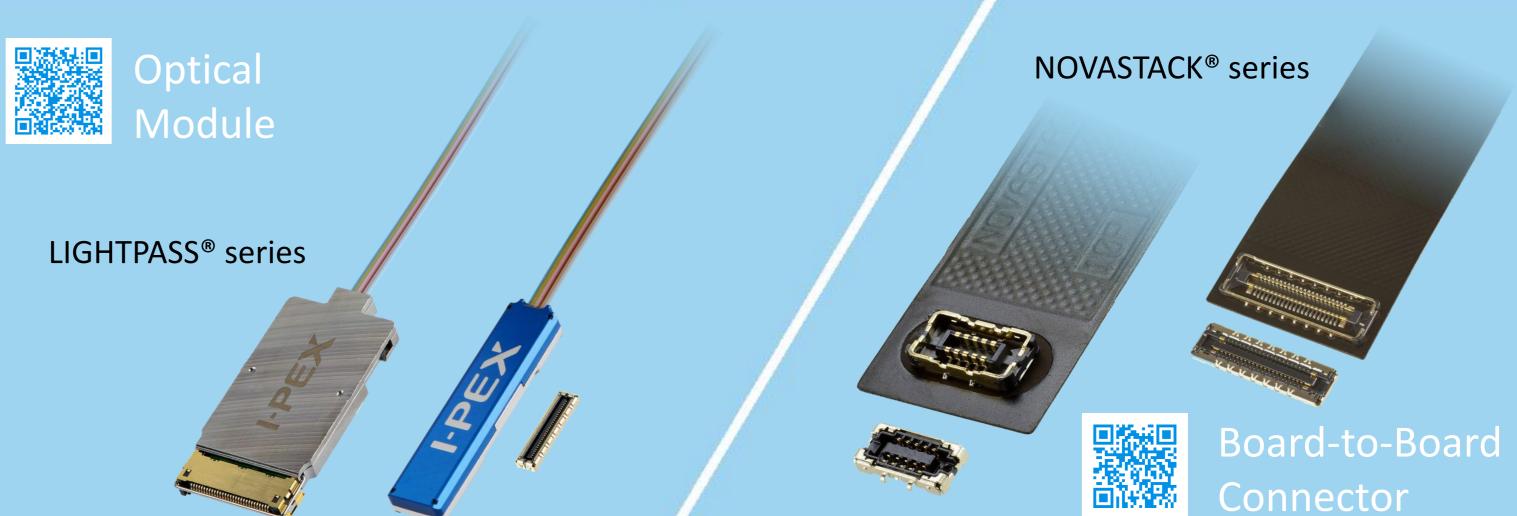
* 90576-0001 AND 90577-**** SHOULD BE USED TOGETHER.



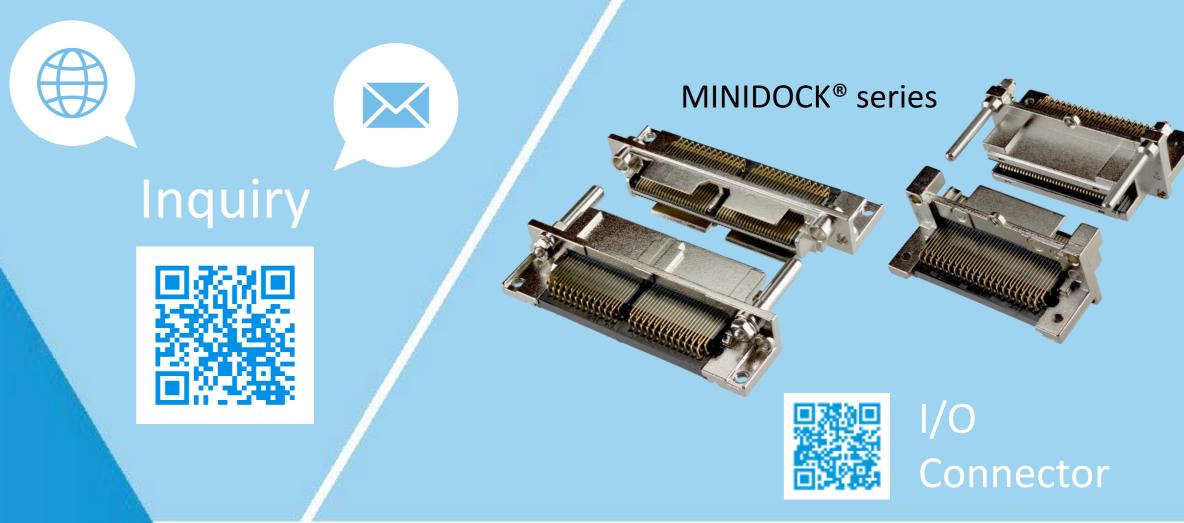
Custom Products Available











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