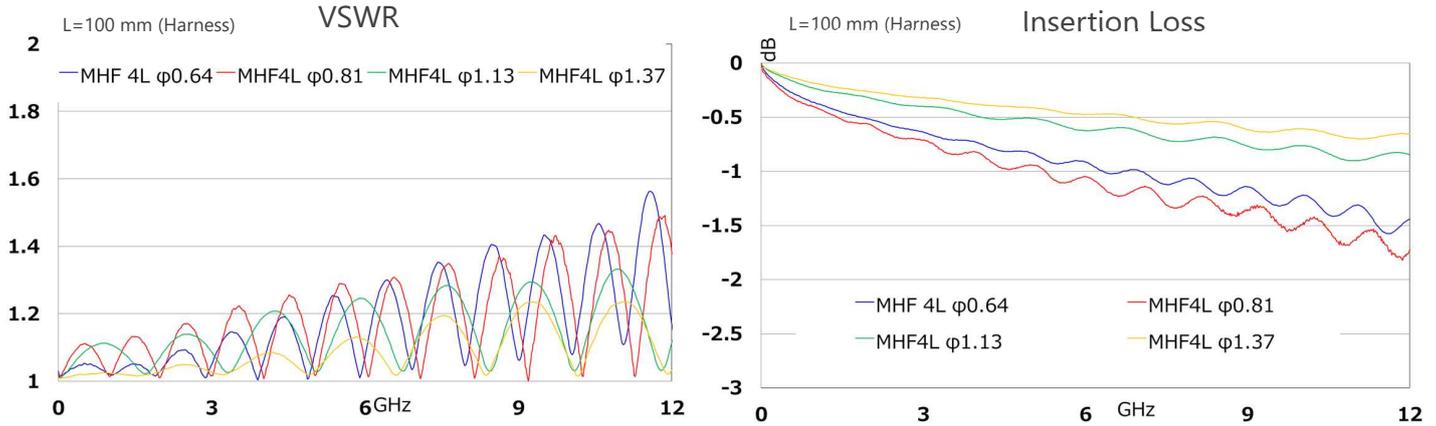




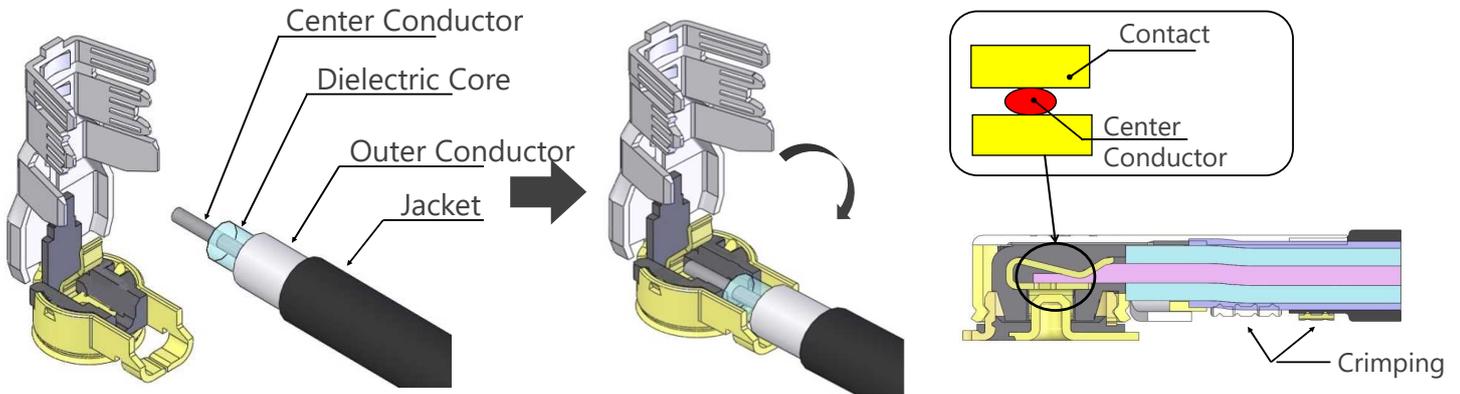
- ✓ 最小限の製品サイズで、~12GHzにおいて優れたパフォーマンスを実現
- ✓ 信頼性の高い無半田結線技術“i-Fit<sup>®</sup>”テクノロジーにより、安定した性能のハーネス提供
- ✓ 対応ケーブル：1.37 mm(30)

Maximum height (mm)	1.7	
Outside dimension of receptacle (mm)	2.0 x 2.0	
Applicable wire gauge	O.D. 1.37 mm / AWG 30	
Frequency	DC~12 GHz	
VSWR (L=100 mm)	DC~3 GHz	1.3 max.
	3 GHz~6 GHz	1.4 max.
	6 GHz~9 GHz	1.5 max.
	9 GHz~12 GHz	1.6 max.
	12 GHz~15 GHz	-
Service temp. (Celsius)	-40 degree ~ +90 degree	
Characteristic impedance	50 ohm	
Rated voltage	AC60V	
Contact resistance	20m ohm max.	
Withstand voltage	AC200V/min	
Insulation resistance	500M ohm min./DC100V	

## 最小限の製品サイズで、~12GHzにおいて優れたパフォーマンスを実現



## 信頼性の高い無半田結線技術“i-Fit<sup>®</sup>”テクノロジーにより、安定した性能のハーネス提供



## 対応ケーブル：1.37 mm(30)

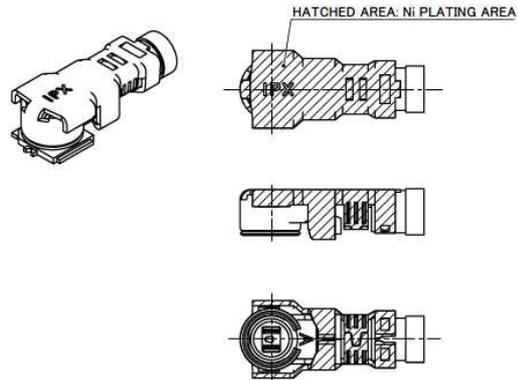
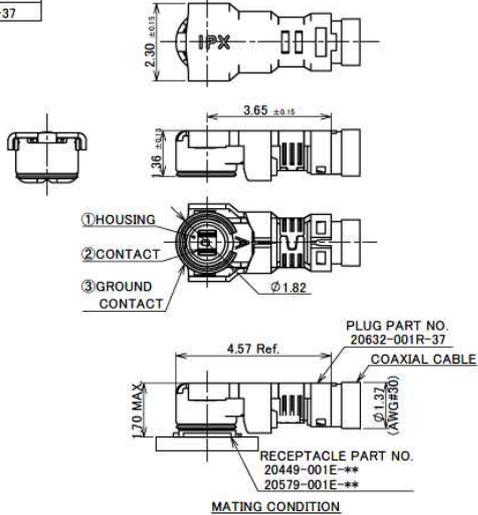
Coax O.D. (Center Conductor AWG)	Mating Height		
	1.7 mm max.	1.4 mm max.	1.2 mm max.
2.00 mm (26)			
1.80 mm (30)			
1.37 mm (30)	○		
1.32 mm (32)			
1.13 mm (32)		○	
0.95 mm (33)		○	
0.81 mm (33)			
0.81 mm (36)			○
0.64 mm (36)			○
0.48 mm (38)			
Receptacle	MHF 4 receptacle, MHF 4L receptacle		

# MHF<sup>®</sup> 4L

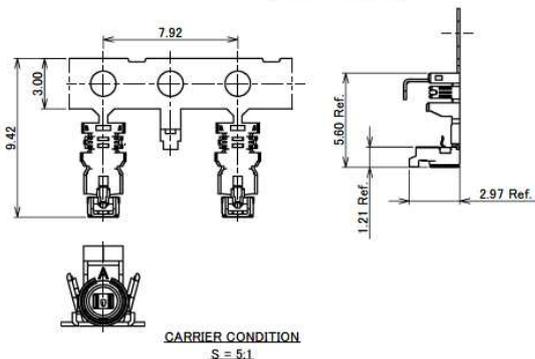
## Component Parts Detail

### MHF<sup>®</sup> 4L plug Ni top (1.37)

Recommended P/N	20632-001R-37
PART No.	
	20632-001R-37



NOTES.  
1. APPLICABLE CONNECTOR  
20449-001E-\*\*\*  
20579-001E-\*\*\*



NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS
3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT PART Au 0.05 μm MIN. [Ni PLATING AREA] Ni ONLY
2	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μm MIN. CONTACT PART Au 0.10 μm MIN.
1	HOUSING	PBT	UL94V-0, BLACK (GF 10%)

# MHF® 4L plug Ni top (1.37)

ITEMS	SPECIFICATION	
RECOMMENDED APPLICABLE CONNECTOR PART No.	20449-001E-**-**	20579-001E-**-**
RATING VOLTAGE	60 V AC (R.M.S)	
RATING FREQUENCY	DC~12 GHz	
OPERATING TEMPERATURE	233~363K (-40°C~+90°C)	
VSWR	1.3 MAX. AT DC~3 GHz, 1.4 MAX. AT 3~6 GHz, 1.5 MAX. AT 6~9 GHz, 1.6 MAX. AT 9~12 GHz	
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: $\angle$ R 20 mohm MAX.	
GROUND CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: $\angle$ 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-2008	PRS-1907
TEST REPORT	TR-14100	TR-14097
PACKING STANDARD	PST-12066	
INSTRUCTION MANUAL	HIM-16011	
APPEARANCE CRITERIA No.	QLS-A***	

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# MHF® 4L plug Ni top (1.37)

PART NO.	20632-001R-37		
APPLICABLE CABLE STRIP DIMENSION	<p>*DO NOT USE SOLDER COATED EITHER INNER OR OUTER CONDUCTOR CABLES.</p>		
REQUIREMENTS	CHARACTERISTIC IMPEDANCE: 50(±2) ohm BY TDR METHOD NOMINAL CAPACITANCE: 88pF/m CONDUCTOR RESISTANCE OF INNER CONDUCTOR: 320 ohm/km INSULATION RESISTANCE: 1500 Mega-ohm.km MIN. DIELECTRIC WITH STANCE VOLTAGE: NO BREAKDOWN AT 1500 V AC FOR 1 MINUTE.		
BRAIDED SHIELD OF OUTER CONDUCTOR	SINGLE BRAIDED SHIELD		
PART NO. OF SEMI AUTO TERMINATION MACHINE	90703-037		
CRIMP HEIGHT	<p>CH-1 (I-FR® PART) 1.46~1.50</p>	<p>CH-2 (SHIELD PART) 1.16~1.20</p>	<p>CH-3 (JACKET PART) 1.27~1.31</p>
	※USE FOR POINT MICROMETER.		

NOTES 2.

DESCRIPTION

INNER CONDUCTOR AWG#30 (7/0.102) SILVER PLATING ANNEALED COPPER WIRE  
 DIELECTRIC CORE FLUORO-PLASTICS, DIAMETER 0.88(+0.04/-0.02)mm NOMINAL THICKNESS 0.29mm  
 OUTER CONDUCTOR 16/5/0.05, NOMINAL DIAMETER 1.13mm TIN-COATED ANNEALED COPPER WIRE.  
 JACKET FLUORO-PLASTICS, DIAMETER 1.37±0.08mm NOMINAL THICKNESS 0.12mm

# Accessories for MHF<sup>®</sup> 4L plug Ni top (1.37)



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



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

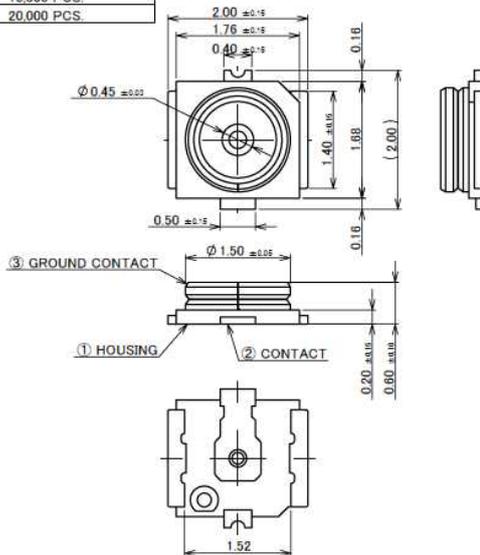


FRONT SIDE  
BACK SIDE  
MHF 4L (1.37) PUSHING AND PULLING TOOL  
PART NO. 90873-0001

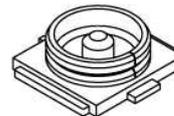
Rev.5

## MHF<sup>®</sup> 4L Receptacle

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



SMT Au PLATING AREA  
(GROUND CONTACT)



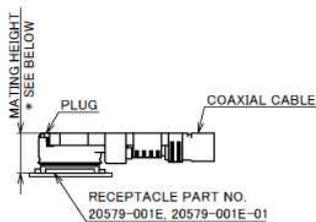
SMT Au PLATING AREA  
(CONTACT)

### NOTES

1. APPLICABLE CONNECTOR (CABLE SIZE)

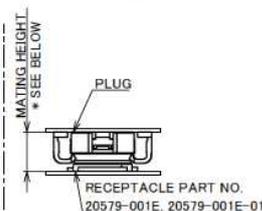
MHF 4 PLUG: 20611-001R (Φ0.81), 20448-00\*R-081 (Φ0.81), 20448-001R-081E (Φ0.81)  
MHF 4L PLUG: 20572-001R-08 (Φ0.64, Φ0.81), 20565-001R-\*\* (Φ0.83, Φ0.95, Φ1.13),  
20632-001R-37 (Φ1.37)

MHF 4 SMT PUG: 20462-001E  
2. COPLANARITY: 0.1 mm MAX.



\* 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

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



\* MATING HEIGHT  
1.2 MAX. WITH 20462-001E

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

NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS
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

Rev.8

# MHF® 4L Receptacle

FOR MHF 4L PLUG

ITEMS	SPECIFICATION	
	20572-001R-08 (CABLE Φ0.81 TYPE)	20565-001E-13 (CABLE Φ 1.13 TYPE)
APPLICABLE CONNECTOR PART No.		
RATING VOLTAGE	60 V AC (R.M.S)/DC	
RATING FREQUENCY	DC ~ 6GHz	
OPERATING TEMPERATURE	233~363 K(-40°C~+90°C)	
VSWR	1.3 MAX. AT DC~3GHz, 1.4 MAX. AT 3~6GHz, 1.85 MAX. AT 3~12GHz	
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	
TEST REPORT	TR-14097	
PACKING STANDARD	20579-001E: PST-14004 20579-001E-01: PST-14067	
INSTRUCTION MANUAL	HIM-12011	HIM-12012

Rev.8

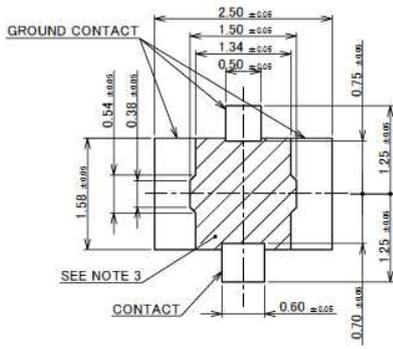
# MHF® 4L Receptacle

FOR MHF 4 SMT PLUG

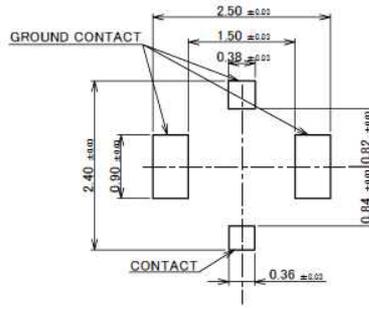
ITEMS	SPECIFICATION	
	20462-001E (MHF 4 SMT PLUG)	
APPLICABLE CONNECTOR PART No.		
RATING VOLTAGE	60 V AC (R.M.S)/DC	
RATING FREQUENCY	DC~6GHz	
OPERATING TEMPERATURE	233~363 K(-40°C~+90°C)	
VSWR	1.3 MAX. AT DC~3GHz, 1.4 MAX. AT 3~6GHz, 1.85 MAX. AT 3~12GHz	
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / 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 : 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	

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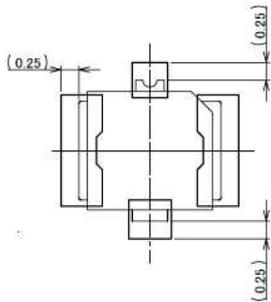
# MHF® 4L Receptacle



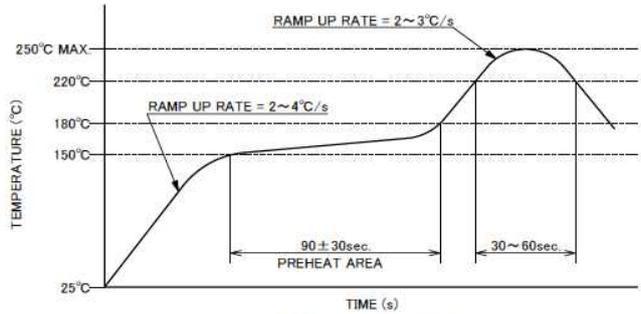
RECOMMENDED FOOTPRINT PATTERN



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)

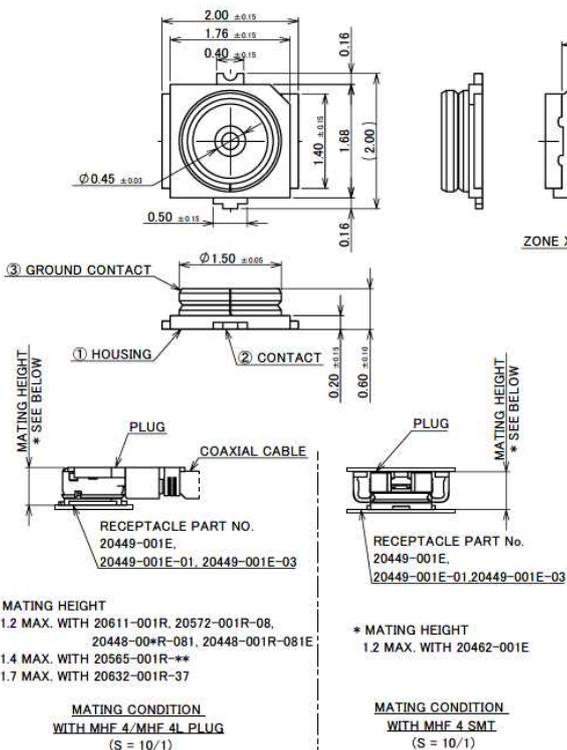
NOTE 3. CUT OUT PROHIBITION AREA.

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# MHF® 4 Receptacle

Recommended P/N 20449-001E-03

PART NO.	PACKING QUANTITY / REEL	CONTACT PLATING			GROUND CONTACT PLATING		
		CONTACT PART	SOLDERING PART	ALL OVER	CONTACT PART	SOLDERING PART	ALL OVER
20449-001E	10,000 PCS.	TOP: Au 0.05 μm MIN. ZONE X: Au 0.03 μm MIN.	TOP: Au 0.01 μm MIN.	Ni 1.00 μm MIN.	TOP: Au 0.03 μm MIN.	TOP: Au 0.01 μm MIN.	Ni 1.00 μm MIN.
20449-001E-01		TOP: Au 0.05 μm MIN.					
20449-001E-03		TOP: Au 0.01 μm MIN. MIDDLE: Pd-Ni 0.02 μm MIN.	TOP: Au 0.01 μm MIN. MIDDLE: Pd-Ni 0.02 μm MIN.		TOP: Au 0.01 μm MIN. MIDDLE: Pd-Ni 0.02 μm MIN.	TOP: Au 0.01 μm MIN. MIDDLE: Pd-Ni 0.02 μm MIN.	



## 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 (Φ0.84, Φ0.81), 20565-001R-\*\* (Φ0.83, Φ0.95, Φ1.13), 20632-001R-37 (Φ1.37)
2. COPLANARITY: 0.1 mm MAX.
3. THIS IS "Pb-FREE" CONNECTOR.
4. CHARACTERISTIC IMPEDANCE: 50 Ω (NOMINAL VALUE)

NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS
3	GROUND CONTACT	PHOSPHOR BRONZE	SEE TABLE
2	CONTACT	BRASS	SEE TABLE
1	HOUSING	LCP	UL94V-0, BLACK

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# MHF® 4 Receptacle

FOR MHF 4 PLUG

ITEMS	SPECIFICATION	
	20611-001R (CABLE Φ0.81 TYPE)	20448-001R (CABLE Φ0.81 TYPE)
APPLICABLE CONNECTOR PART No.		
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	1.3 MAX. AT DC~3GHz, 1.4 MAX. AT 3~6GHz, 1.5 MAX. AT 6~9GHz	
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ΔR 20 mohm MAX.	
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ΔR 100 mohm MAX.	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)	-	
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***	

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# MHF® 4 Receptacle

FOR MHF 4L PLUG

ITEMS	SPECIFICATION			
	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)
APPLICABLE CONNECTOR PART No.				
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	1.3 MAX. AT DC~3GHz, 1.4 MAX. AT 3~6GHz, 1.5 MAX. AT 6~9GHz			
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-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***			

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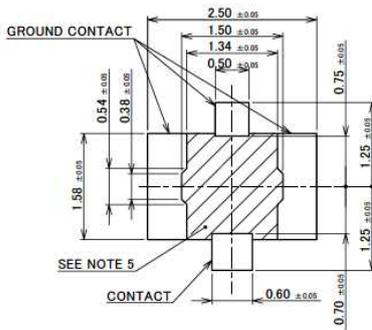
# MHF<sup>®</sup> 4 Receptacle

FOR MHF 4 SMT PLUG

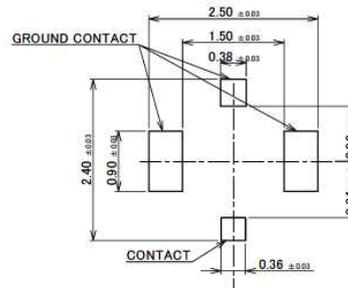
ITEMS	SPECIFICATION
APPLICABLE CONNECTOR PART No.	20462-001E (MHF 4 SMT PLUG)
RATING VOLTAGE	60 V AC (R.M.S)/DC
RATING FREQUENCY	DC~9GHz
OPERATING TEMPERATURE	233~363 K (-40°C~+90°C)
CHARACTERISTIC IMPEDANCE	50 ohm (NOMINAL VALUE)
VSWR	1.3 MAX. AT DC~3GHz, 1.4 MAX. AT 3~6GHz, 1.5 MAX. AT 6~9GHz
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : $\Delta$ R 20 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : $\Delta$ 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***

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# MHF<sup>®</sup> 4 Receptacle

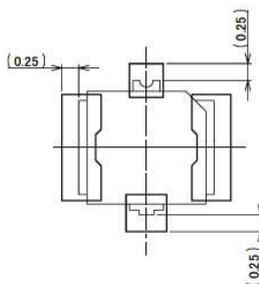


RECOMMENDED FOOTPRINT PATTERN

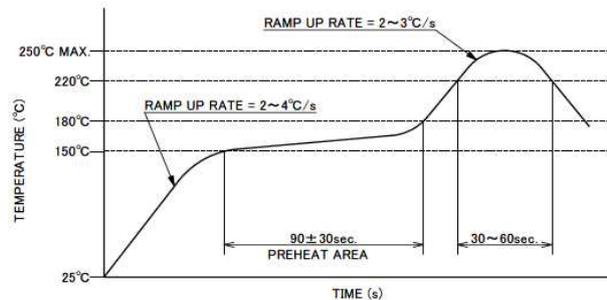


MASK THICKNESS: 0.12 mm

RECOMMENDED METAL MASK LAYOUT



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN



NOTE 5. CUT OUT PROHIBITION AREA.

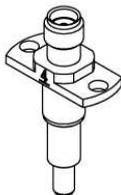
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# Accessories for MHF® 4L Receptacle



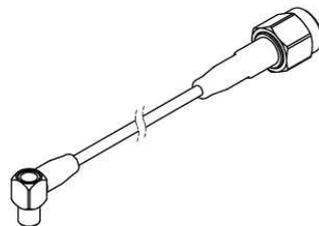
MHF 4 (4L) SMA ADAPTOR  
PART NO. 90449-002



MHF 4 SMA ADAPTOR HIGH CYCLE TYPE  
PART NO. 90688-0001



MHF 4 RECEPTACLE NARROW PITCH  
SMA ADAPTOR HIGH CYCLE TYPE  
PART NO. 90576-0001



4.5MM HIGH CYCLE TEST PROBE CABLE ASS'Y  
PART NO. 90577-\*\*\*\*

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

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202101R0