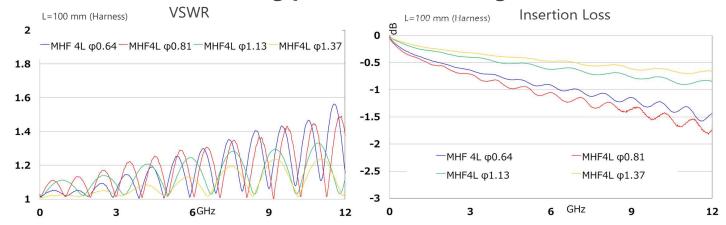
MHF[®] 4L

The M.2 industry standard, mated height of 1.4 mm max., excellent electrical performance up to 12 GHz

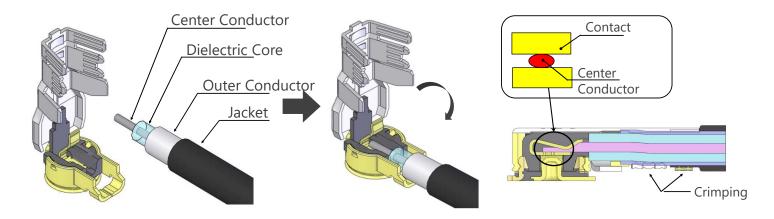
1.4

Maximum height (mm) Outside dimension 2.0 x 2.0 I STATE IN of receptacle (mm) ✓ Small form factor with big performance Applicable O.D. 1.13 mm / AWG 32 wire gauge O.D. 0.95 mm / AWG 33 through 12 GHz $DC\sim 12 \text{ GHz}$ requency DC~3 GHz ✓ Solderless micro-coax termination 1.3 max 1.45 max 3 GHz~6 GHz VSWR technology "i-Fit®" provides consistent 6 GHz~9 GHz 1.6 max (L=100 mm) 9 GHz~12 GHz 1.9 max. performance 12 GHz~15 GHz 40 degree \sim +90 degree Service temp. (Celsius) MHF® 4L Plug available cable O.D. Characteristic impedance 50 ohm AC60V Rated voltage (AWG): 1.13 mm (32), 0.95 mm (33) 20m ohm max Contact resistance Withstand voltage AC200V/min Insulation resistance 500M ohm min./DC100V

Small form factor with big performance through 12 GHz



Solderless micro-coax termination technology "i-Fit®" provides consistent performance



MHF[®] 4L Plug available cable O.D. (AWG) : 1.13 mm (32), 0.95 mm (33)

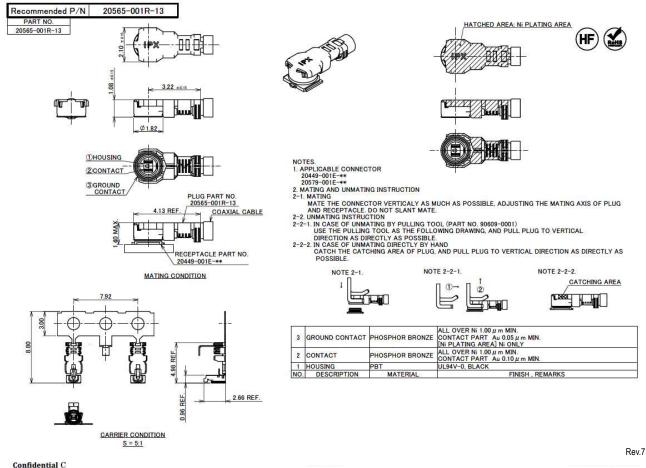
Coax O.D.	Mating Height		
(Center Conductor AWG)	1.7 mm max.	1.4 mm max.	1.2 mm max.
2.00 mm (26)			
1.80 mm (30)			
1.37 mm (30)	0		
1.32 mm (32)			
1.13 mm (32)		0	
0.95 mm (33)		0	
0.81 mm (33)			
0.81 mm (36)			0
0.64 mm (36)			0
0.48 mm (38)			
Receptacle	MHF 4 receptacle, MHF 4L receptacle		



I-PEX Contact your sales representative for more detailed information. [i-pex.com]

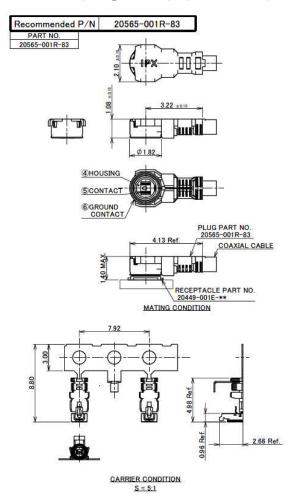
MHF[®] 4L Component Parts Detail

MHF[®] 4L plug Ni top (1.13,0.95)



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MHF[®] 4L plug Ni top (1.13,0.95)



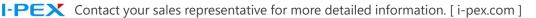
a set a set		
NOTES. 3. APPLICABLE CONNECTOR 20449-001E-** 20579-001E-**		<u>-</u> -
4. MATING AND UNMATING INSTRU 4-1. MATING	ICALY AS MUCH AS POSSIBLE, AD.	JUSTING TH <mark>E MATING AXIS OF PLUG</mark>
USE THE PULLING TOOL AS DIRECTLY AS POSSIBLE. 4-2-2. IN CASE OF UNMATING DIRE	CTLY BY HAND	01) ULL PLUG TO VERTICAL DIRECTION AS ERTICAL DIRECTION AS DIRECTLY AS
NOTE 4-1.	NOTE 4-2-1.	NOTE 4-2-2. CATCHING AREA
	ALL OVER Ni 1.00 µ m l	

NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS
4	HOUSING	PBT	UL94V-0. BLACK
5	CONTACT	PHOSPHOR BRONZE	CONTACT PART FINISH: Au 0.10 µ m MIN. UNDER PLATE: Ni 1.00 µ m MIN.
6	GROUND CONTACT		ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.05 μ m MIN. [Ni PLATING AREA] Ni ONLY

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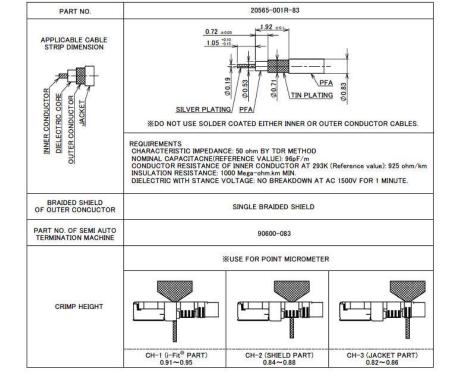
MHF® 4L plug Ni top (1.13,0.95)

ITEMS	SPECIFICATION		
APPLICABLE CABLE	AWG#32 (1.13 O.D.)	AWG#33 (0.95 O.D.)	AWG#34 (0.83 O.D.)
RECOMMENDED APPLICABLE CONNECTOR PART No.		20449-001E-**	
RATING VOLTAGE		60 V AC (R.M.S)	
RATING FREQUENCY		DC~ 12GHz	
OPERATING TEMPERATURE		233~363 K (-40°C~+90°C)	
VSWR	1.3 MAX. AT DC~3GHz, 1.4	5 MAX. AT 3~6GHz, 1.6 MAX. AT 6~9	GHz, 1.9 MAX. AT 9~12GHz
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: AR 20 mohm MAX.		
GROUND CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: ZR 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-1772	PRS-2051	PRS-2062
TEST REPORT	TR-13011	TR-14142	TR-15011
PACKING STANDARD	PST-12066		
INSTRUCTION MANUAL	HIM-12012		
APPEARANCE CRITERIA No.	QLS-A***		



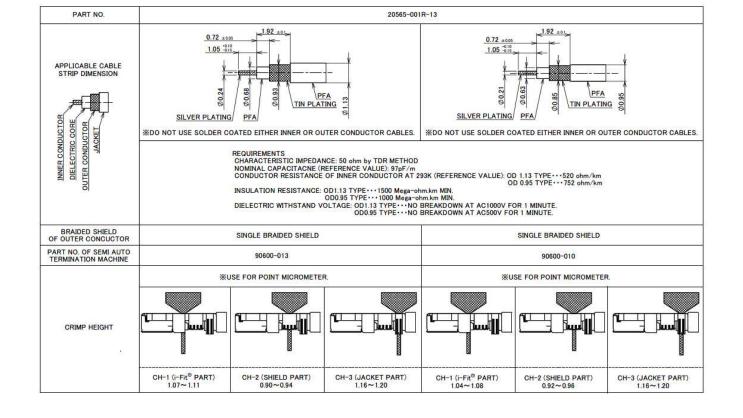


Rev.7



MHF® 4L plug Ni top (1.13,0.95)

Rev.7



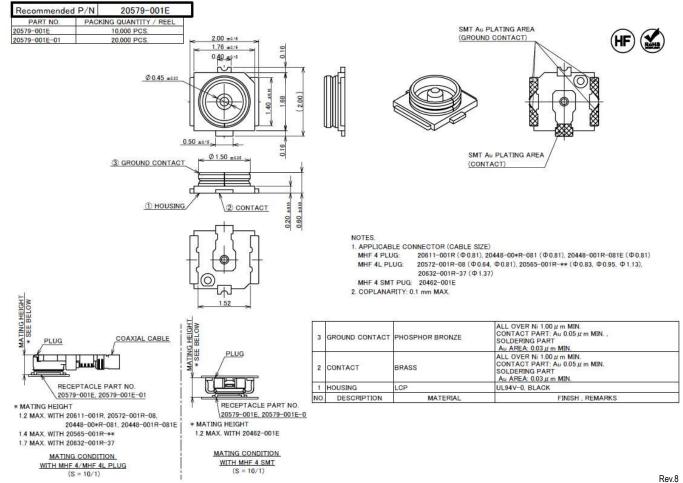
MHF® 4L plug Ni top (1.13,0.95)

Accessories for MHF[®] 4L (1.13,0.95)



Rev.7

MHF[®] 4L Receptacle



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MHF[®] 4L Receptacle

FOR MHF 4L PLUG

ITEMS	SPECIFICATION		
APPLICABLE CONNECTOR PART No.	20572-001R-08 20565-001E-13 (CABLE Ф0.81 TYPE) (CABLE Ф1.13 TYPE)		
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. / AF	TER TEST : ⊿R 20 mohm MAX.	
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ZR 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 MI		
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	

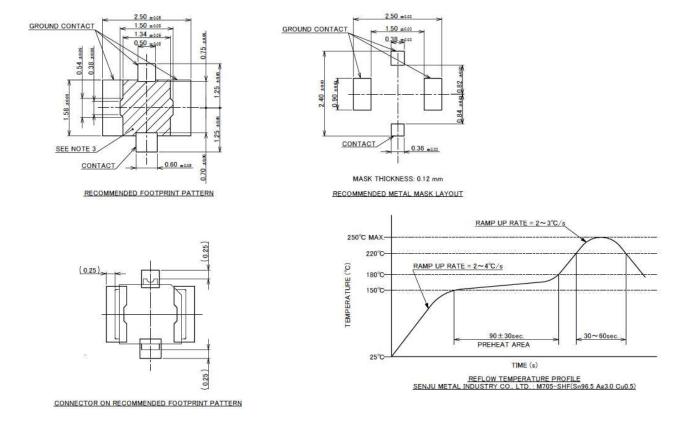
Rev.8

MHF[®] 4L Receptacle

FOR MHF 4 SMT PLUG

ITEMS	SPECIFICATION	
APPLICABLE CONNECTOR PART No.	20462-001E (MHF 4 SMT PLUG)	
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 : ⊿R 20 mohm MAX.	
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ZR 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	

MHF[®] 4L Receptacle

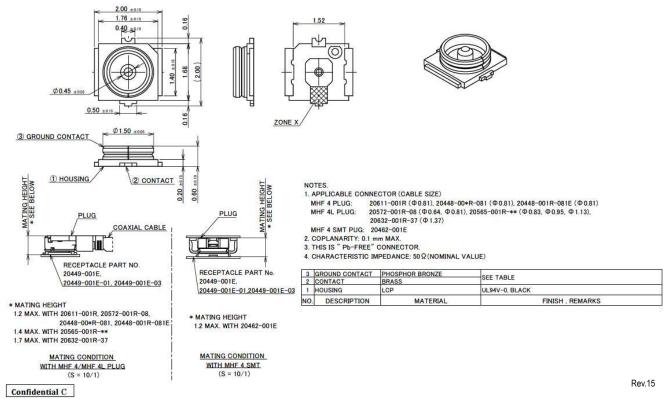


NOTE 3. CUT OUT PROHIBITION AREA.

MHF® 4 Receptacle

Recommended P/N 20449-001E-03

PART NO.	PACKING QUANTITY / REEL	CONTACT PLATING		GROUND CONTACT PLATING					
PART NO.	PACKING QUANTITT / REEL	CONTACT PART	SOLDERING PART	ALL OVER	CONTACT PART	SOLDERING PART	ALL OVER		
20449-001E		TOP: Au 0.05 μ m MIN. ZONE X: Au 0.03 μ m MIN.	TOP: Au 0.01 µ m MIN.		TOP: Au 0.03 µ m MIN.	TOP: Au 0.01 µ m MIN.			
20449-001E-01	10,000 PCS.	10,000 PCS. TOP: Au 0.05 µ m MIN.	80	66	MIN.	Ni 1.00 µ m MIN.	2.	18	Ni 1.00 µ m MIN.
20449-001E-03			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.	TOP: Au 0.01 μ m MIN. MIDDLE: Pd-Ni 0.02 μ m MIN.			



202101R0

MHF[®] 4 Receptacle

FOR MHF 4 PLUG

ITEMS	SPECIFICATION		
APPLICABLE CONNECTOR PART No.	20611-001R 20448-001R (CABLE Ф0.81 ТҮРЕ) (CABLE Ф0.81 ТҮРЕ)		
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	1.3 MAX. AT DC~3GHz, 1.4 MAX. A	AT 3~6GHz, 1.5 MAX. AT 6~9GHz	
MAIN CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ZR 20 mohm MAX.		
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : ZR 100 mohm MAX.	INITIAL : 20 mohm MAX. / AFTER TEST : AR 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.	OLS-A***		

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MHF[®] 4 Receptacle

FOR MHF 4L PLUG

13

ITEMS		SPECIFI	CATION	No.
APPLICABLE CONNECTOR PART No.	20572-001R-08 (CABLE Φ0.64 TYPE) (CABLE Φ0.81 TYPE)	20565-001E-13 (CABLE Ф0.95 ТҮРЕ) (CABLE Ф1.13 ТҮРЕ)	20565-001R-83 (CABLE Ф0.83 ТҮРЕ)	20632-001R-37 (CABLE Φ1.37 TYPE)
RATING VOLTAGE		60 V AC (F	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	1	.3 MAX. AT DC~3GHz, 1.4 MAX. A	T 3~6GHz, 1.5 MAX. AT 6~9G	Hz
MAIN CONTACT RESISTANCE		INITIAL : 20 mohm MAX. / AFT	ER TEST : AR 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 00.64 TYPE) PRS-1772 (CABLE 00.81 TYPE)	PRS-2051 (CABLE Φ0.95 TYPE) PRS-1772 (CABLE Φ1.13 TYPE)	PRS-2062 (CABLE Ø0.83 TYPE)	PRS-2008 (CABLE Ф 1.37 ТУРЕ)
TEST REPORT	TR-14078 (CABLE Φ0.64 TYPE) TR-13011 (CABLE Φ0.81 TYPE)	TR-14142 (CABLE 00.95 TYPE) TR-13011 (CABLE 01.13 TYPE)	TR-15011 (CABLE \$0.83 TYPE)	TR-14100 (CABLE @ 1.37 TYPE)
PACKING STANDARD		20449-001E-03: 300-604		
INSTRUCTION MANUAL	HIM-12011	HIM-1	2012	HIM-16011
APPEARANCE CRITERIA No.		QLS-	A***	

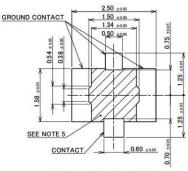
MHF[®] 4 Receptacle

FOR MHF 4 SMT PLUG

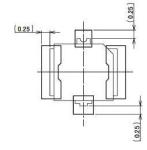
ITEMS	SPECIFICATION	
APPLICABLE CONNECTOR PART No.	20462-001E (MHF 4 SMT PLUG)	
RATING VOLTAGE	60 V AC (R.M.S)/DC	
RATING FREQUENCY	DC~9GHz	
OPERATING TEMPERATURE	233~363 K(-40°C~+90°C)	
CHARACTERISTIC IMPEDANCE	50 ohm (NOMINAL VALUE)	
VSWR	1.3 MAX. AT DC~3GHz, 1.4 MAX. AT 3~6GHz, 1.5 MAX. AT 6~9GHz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



RECOMMENDED FOOTPRINT PATTERN



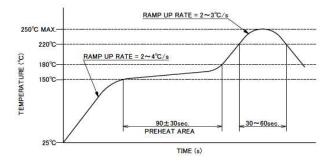
CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN

NOTE 5. CUT OUT PROHIBITION AREA.

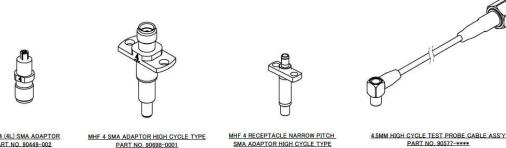
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GROUND CONTACT

MASK THICKNESS: 0.12 mm RECOMMENDED METAL MASK LAYOUT









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

PART NO. 90698-0001

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

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

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