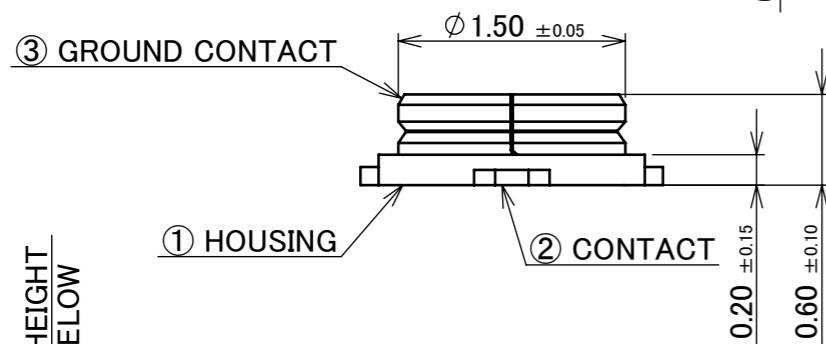
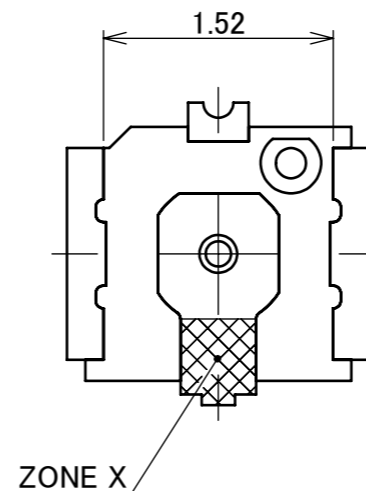
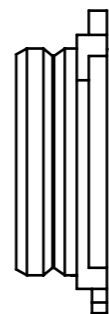
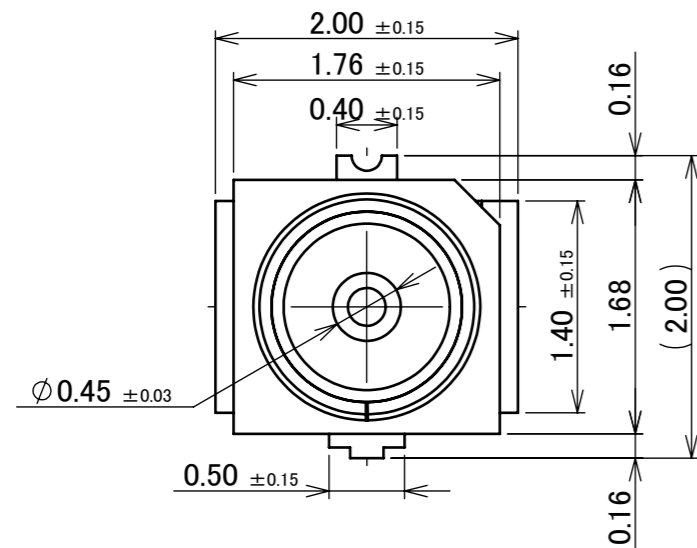


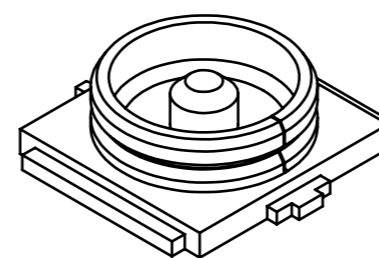
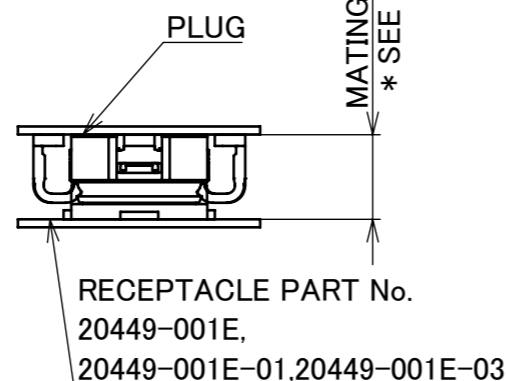
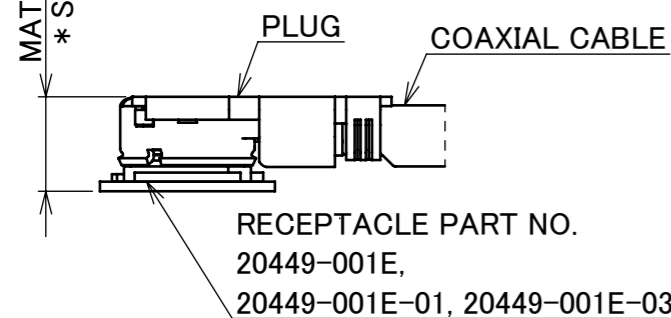
**Recommended P/N 20449-001E-03**

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.	TOP OTHER: Au 0.01 μm MIN. ZONE X: Au 0.03 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 0.01 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.	
20449-001E-03							



MATING HEIGHT  
\* SEE BELOW

MATING HEIGHT  
\* SEE BELOW



- NOTES.
- 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 PLUG: 20462-001E
  - COPLANARITY: 0.1 mm MAX.
  - THIS IS "Pb-FREE" CONNECTOR.
  - 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

\* 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)

\* MATING HEIGHT  
 1.2 MAX. WITH 20462-001E  
**MATING CONDITION**  
**WITH MHF 4 SMT**  
 (S = 10 : 1)

NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS
21	Z230809	Y.I	2023/07/13
20	Z230517	K.M	2023/05/10
19	Z230390	TOI	2023/04/04
18	Z230201	TOI	2023/02/20
17	Z221366	M.H	2022/12/19
16	Z220591	Y.I	2022/05/27
REV.	ECN	BY	DATE
REVISION RECORD			

ANGLE	±2°	6 OVER 30 MAX.	±0.3
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5
GENERAL TOLERANCE.			
DWG.	K.Oobayashi		DATE 2007/11/12
CHK.			
APP.	E.Kawabe		

PROJECTION	SERIES No. R5	CUSTOMER COPY
TITLE MHF® 4 RECEPTACLE		SCALE 20:1
		UNIT mm
DWG. No. 20449		SIZE A3
		SHEET 1/8
		REV. 21

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 (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 : 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***	

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION 	SERIES No. R5	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5					
GENERAL TOLERANCE.				TITLE MHF® 4 RECEPTACLE	SCALE -	I-PEX		
DWG.	DATE							
CHK.								
APP.								
				DWG. No.	20449	SIZE A3	SHEET 2/8	REV. 21

FOR MHF 4L PLUG

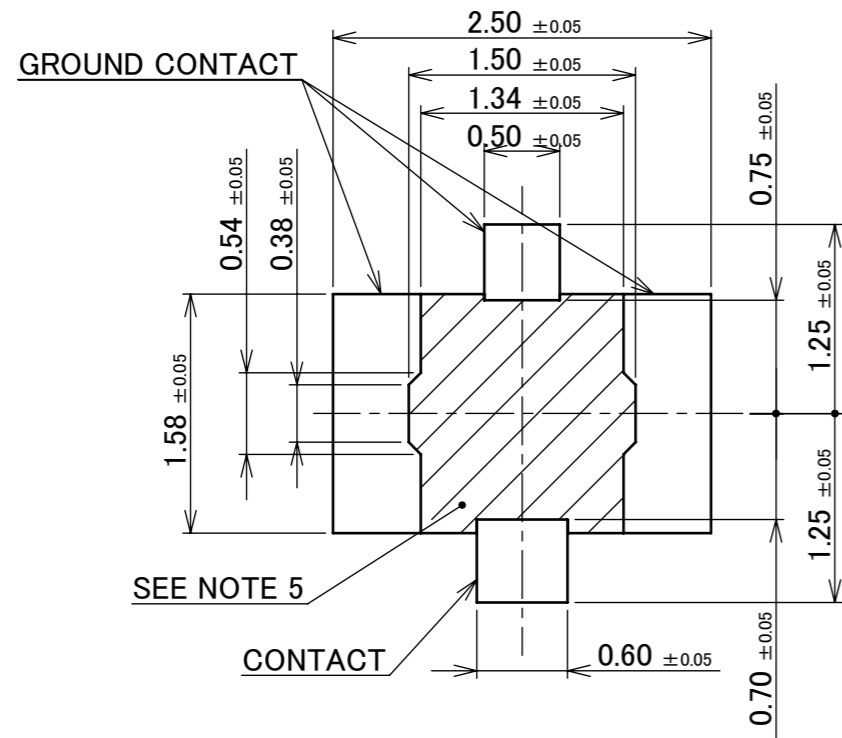
ITEMS	SPECIFICATION			
	20572-001R-08 (CABLE Φ0.64 TYPE) (CABLE Φ0.81 TYPE)	20565-001E-13 (CABLE Φ0.95 TYPE) (CABLE Φ1.13 TYPE)	20565-001R-83 (CABLE Φ0.83 TYPE)	20632-001R-37 (CABLE Φ1.37 TYPE)
APPLICABLE CONNECTOR PART No.				
RATING VOLTAGE	60 V AC (R.M.S)/DC			
RATING FREQUENCY	DC ~ 9GHz			
OPERATING TEMPERATURE	233~363 K(-40°C~+90°C)			
CHARACTERISTIC IMPEDANCE	50 ohm (NOMINAL VALUE)			
VSWR (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 : 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***			

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION 	SERIES No. R5	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5					
GENERAL TOLERANCE.				TITLE MHF® 4 RECEPTACLE	SCALE	<b>I-PEX</b>		
DWG.	DATE				-			
CHK.					UNIT			
APP.					mm			
				DWG. No.	20449	SIZE	SHEET	REV.
						A3	3/8	21

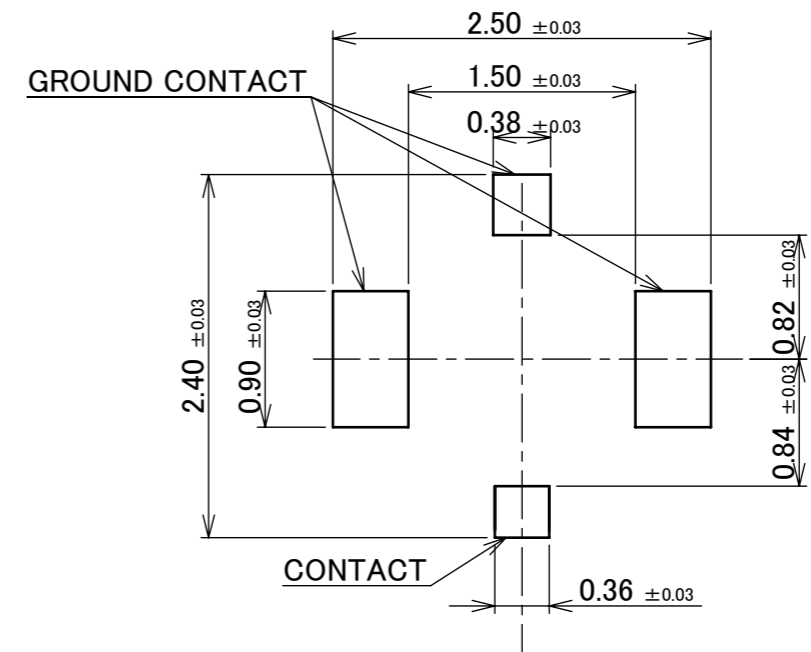
FOR MHF 4 SMT PLUG

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 : $\triangle$ R 20 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL : 20 mohm MAX. / AFTER TEST : $\triangle$ 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***

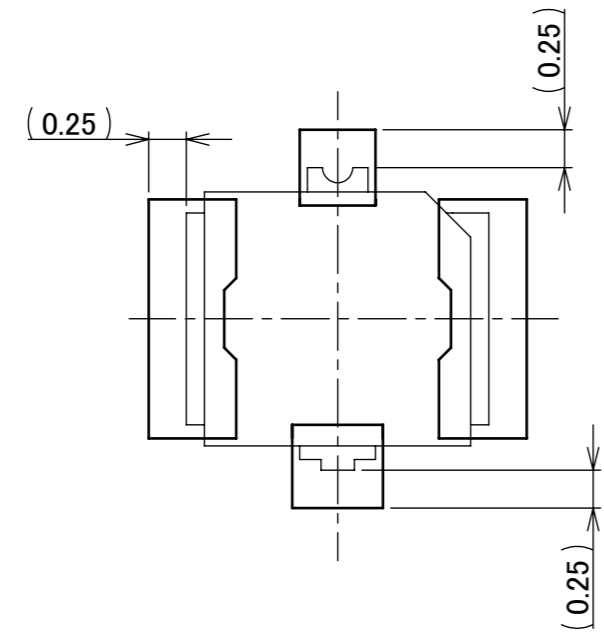
ANGLE	$\pm 2^\circ$	6 OVER 30 MAX.	$\pm 0.3$	PROJECTION 	SERIES No. R5	CUSTOMER COPY		
6 MAX.	$\pm 0.2$	30 OVER 120 MAX.	$\pm 0.5$					
GENERAL TOLERANCE.				TITLE MHF <sup>®</sup> 4 RECEPTACLE	SCALE -	<b>I-PEX</b>		
DWG.	DATE							
CHK.								
APP.								
				DWG. No.	20449	SIZE A3	SHEET 4/8	REV. 21



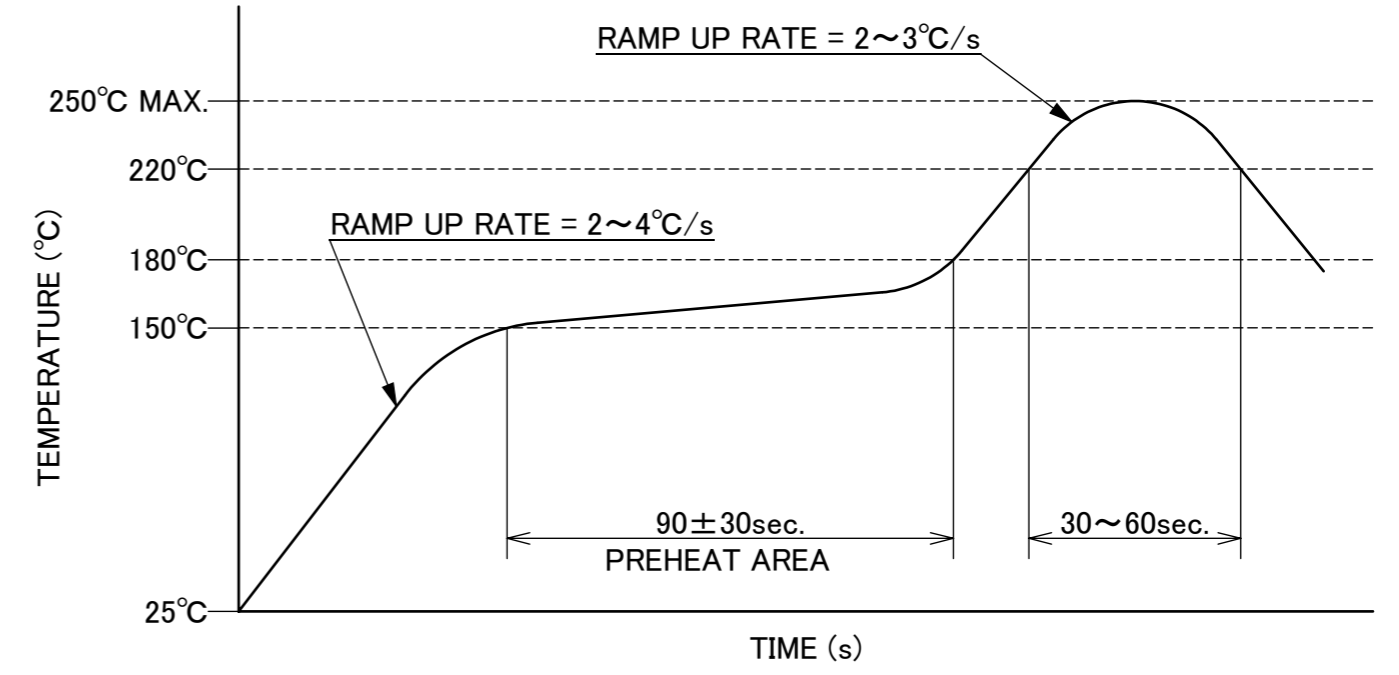
RECOMMENDED FOOTPRINT PATTERN



MASK THICKNESS: 0.12 mm  
RECOMMENDED METAL MASK LAYOUT



CONNECTOR ON RECOMMENDED FOOTPRINT PATTERN



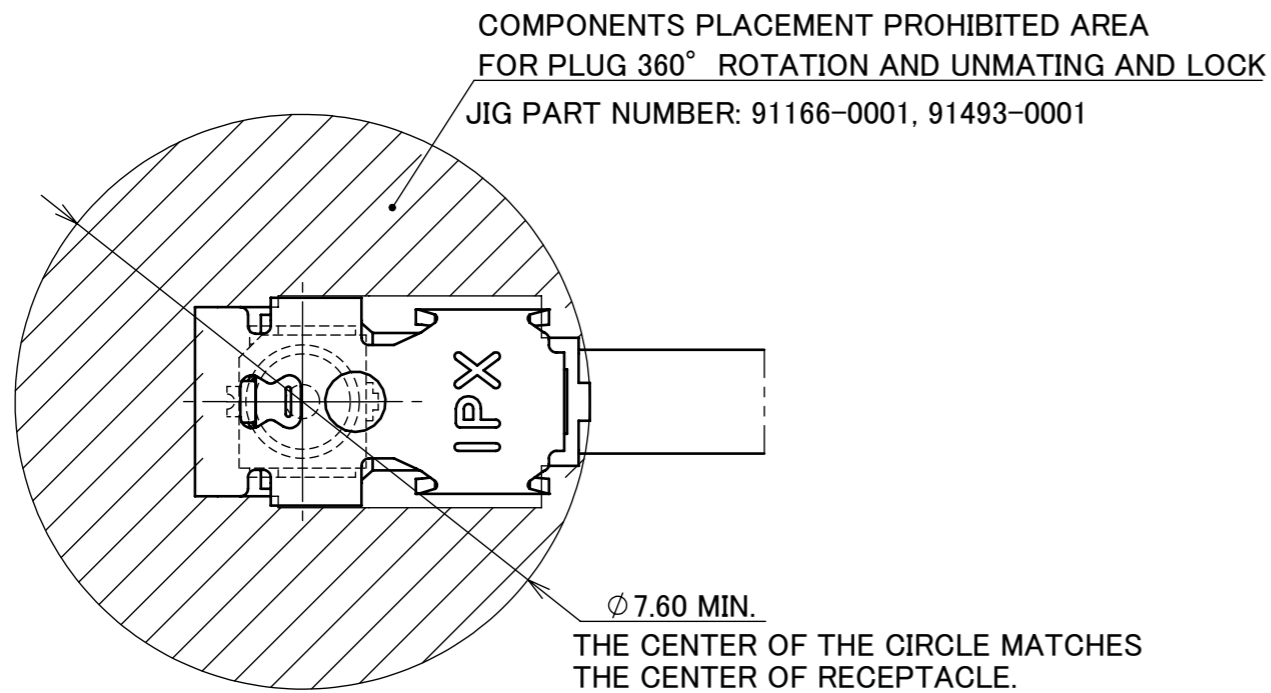
REFLOW TEMPERATURE PROFILE  
SENJU METAL INDUSTRY CO., LTD. : M705-SHF(Sn96.5 Ag3.0 Cu0.5)

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

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION ⊕	SERIES No. R5	CUSTOMER COPY			
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5			SCALE 20:1	<b>I-PEX</b>		
GENERAL TOLERANCE.				TITLE MHF® 4 RECEPTACLE		UNIT mm			
DWG.	DATE			DWG. No. 20449		SIZE A3	REV. 21		
CHK.									
APP.									

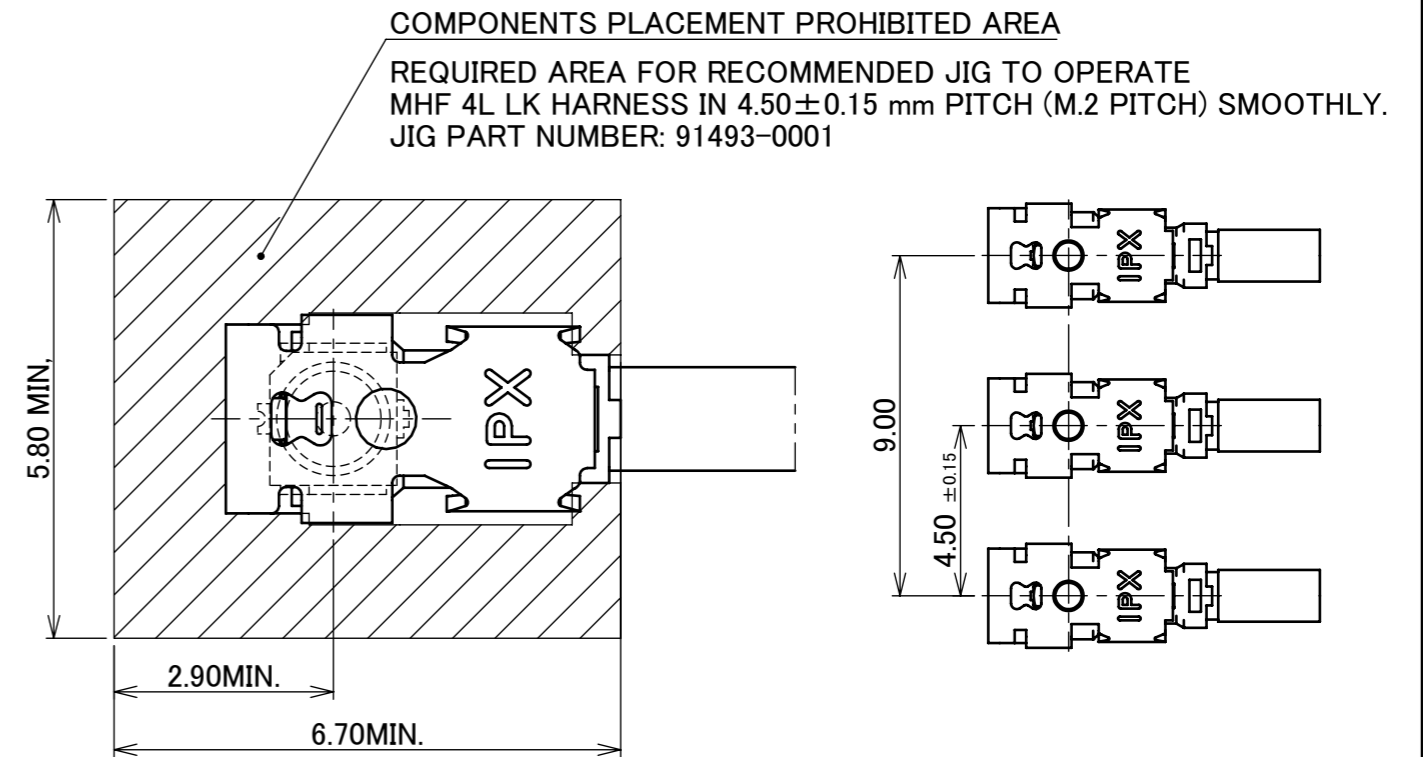
# COMPONENT PLACEMENT PROHIBITED AREA FOR MHF 4 RECEPTACLE MATED WITH MHF 4L LK HARNESS REQUIRED AREA FOR RECOMMENDED JIG TO OPERATE

## SINGLE CONNECTOR LAYOUT



MATING AND LOCK CONDITION  
WITH MHF 4L LK HARNESS

## MULTIPLE CONNECTORS LAYOUT

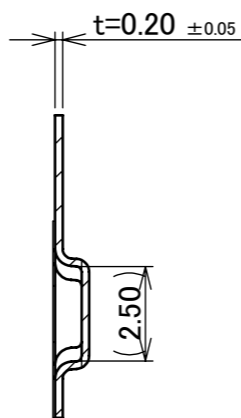
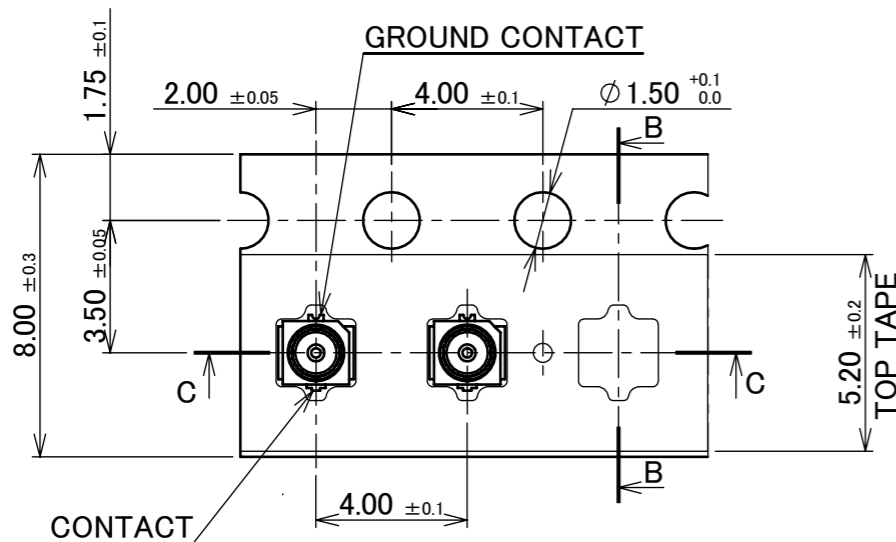
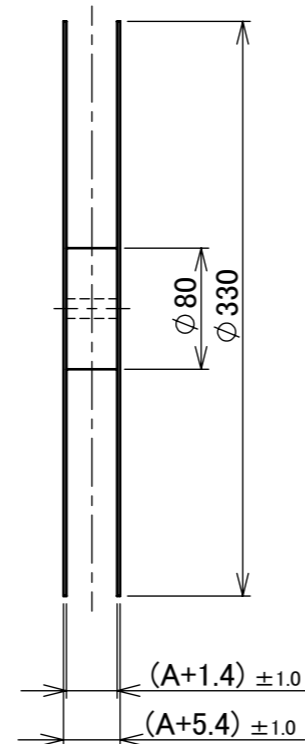
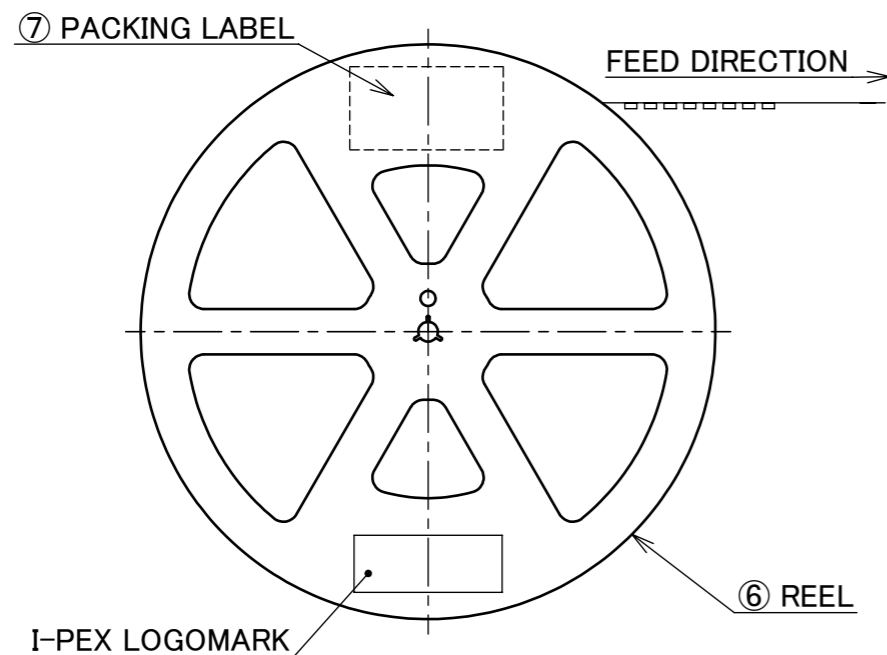


MATING AND LOCK CONDITION  
WITH MHF 4L LK HARNESS NARROW PITCH

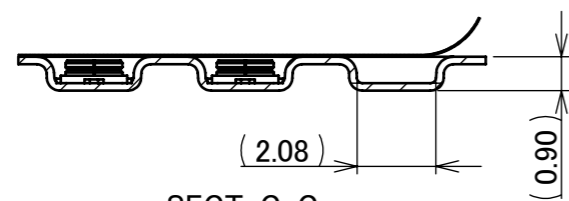
MHF 4L LK HARNESS UNLOCK CONDITION  
NARROW PITCH DIMENSIONS  
(S = 5 : 1)

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION ⊕	SERIES No. R5	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5					
GENERAL TOLERANCE.				TITLE MHF® 4 RECEPTACLE	SCALE 10:1	UNIT <b>I-PEX</b>		
DWG.	DATE							
CHK.								
APP.								
				DWG. No.	20449	SIZE A3	SHEET 6/8	REV. 21

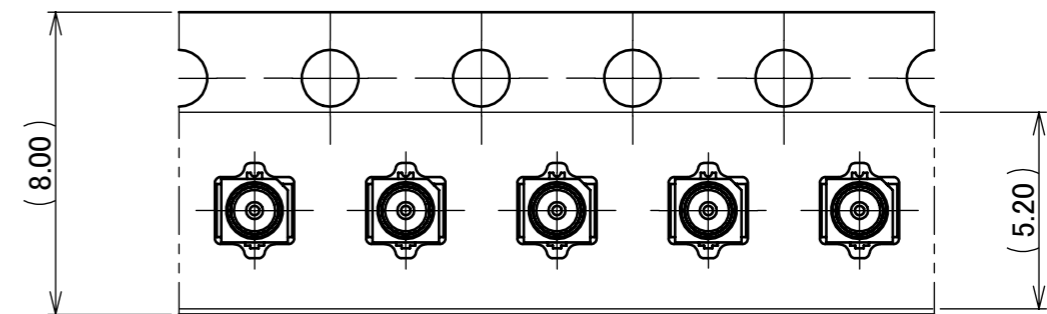
PART NO.	A	QTY. PER EMBOSS REEL (PIECES / REEL)	QTY. PER PACKING CARTON (REELS / CARTON)
20449-001E	8	10,000 / REEL	9 REELS/ CARTON = 90,000 PIECES
20449-001E-01			
20449-001E-03			



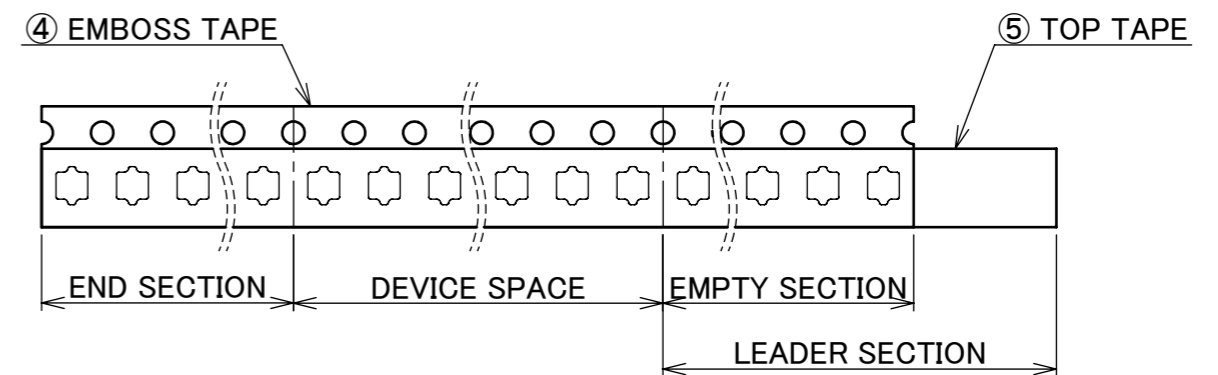
SECT. B-B  
(S = 5 : 1)



SECT. C-C  
(S = 5 : 1)



(S = 5 : 1)

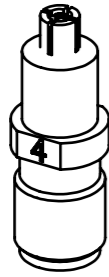


NOTES.

- TAPING SPECIFICATION FOLLOWS JIS C 0806 (IEC 60286-3).
- MAKE EMPTY SECTION OF LEADER AND END ON EACH END OF THE TAPE.
- TOP TAPE SHALL NOT STICK OUT FROM EMBOSS TAPE.
- TOP TAPE SHALL NOT COVER FEED HOLE.

NO.	DESCRIPTION	MATERIAL	FINISH, REMARKS
7	PACKING LABEL	-	-
6	REEL	PS	ANTI-STATIC TYPE
5	TOP TAPE	PET	ANTI-STATIC TYPE
4	EMBOSS TAPE	PS t=0.2	ANTI-STATIC TYPE OR CONDUCTIVE

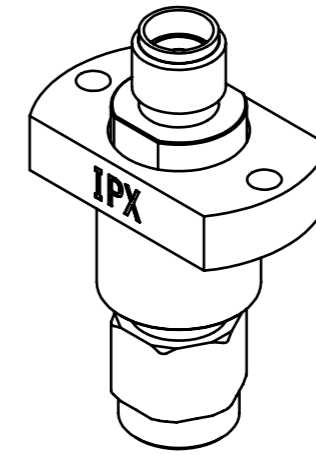
ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R5			
GENERAL TOLERANCE.				TITLE	SCALE		1:X	
DWG.	DATE			MHF® 4	UNIT		mm	
CHK.				RECEPTACLE	SIZE		A3	
APP.				DWG. No.	20449	SHEET	7/8	REV. 21



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

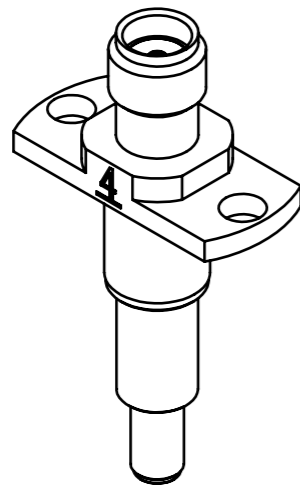


MHF 4 RECEPTACLE HIGH CYCLE ATTACHMENT  
PART NO. 90683-0001

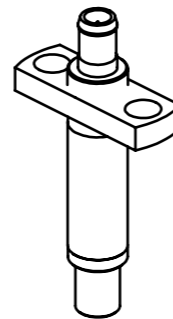


MHF SERIES HIGH CYCLE SMA ADAPTER BASE UNIT  
PART NO. 90684-0001

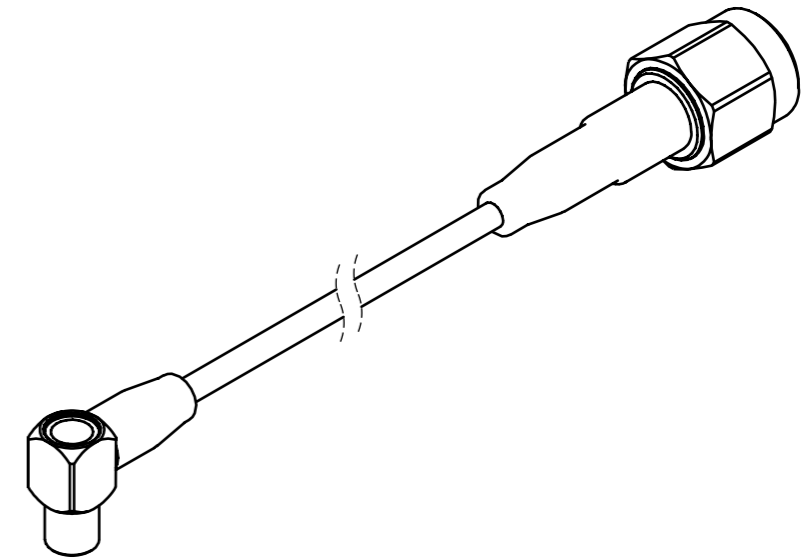
\* 90683-0001 AND 90684-0001 SHOULD BE USED TOGETHER.



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.

ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION ⊕	SERIES No. R5	CUSTOMER COPY			
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5						
GENERAL TOLERANCE.				TITLE MHF® 4 RECEPTACLE		SCALE	<b>I-PEX</b>		
DWG.	DATE					2:1			
CHK.						UNIT			
APP.						mm			
				DWG. No.	20449	SIZE	SHEET	REV.	
						A3	8/8	21	