

仕様書番号

1400096

株式会社サーキットデザイン 御中

納入仕様書

SPECIFICATION FOR APPROVAL

RoHS対応

品名 Description	SMA to Ipexケ-ブルASSY(L=150mm)
型名 Type Name	CAA162HEAAM0015 CBL-RPSMARD-MH(15cm)
御社部品番号 Customer Part No.	24203
弊社部品番号 Vender Part No.	60140993 (CAA162HEAAM0015)

受領印欄 Specification Sheet Receipt	
この書類を受領いたしました。 品番 24203 2015 年 / 月 / 14 日 (株) サーキットデザイン 技術部 小原	
提出部数	3 部
御返却部数	1 部

株式会社 マップエレクトロニクス

〒386-0005

長野県上田市古里116-14

TEL: 0268-28-7576

FAX: 0268-28-7577

Map Electronics Co., Ltd.

116-14 Kosato Ueda-Shi

Nagano 3860005 Japan

Phone: +81-268-28-7576

Fax: +81-268-28-7577

DATE

2015年01月13日

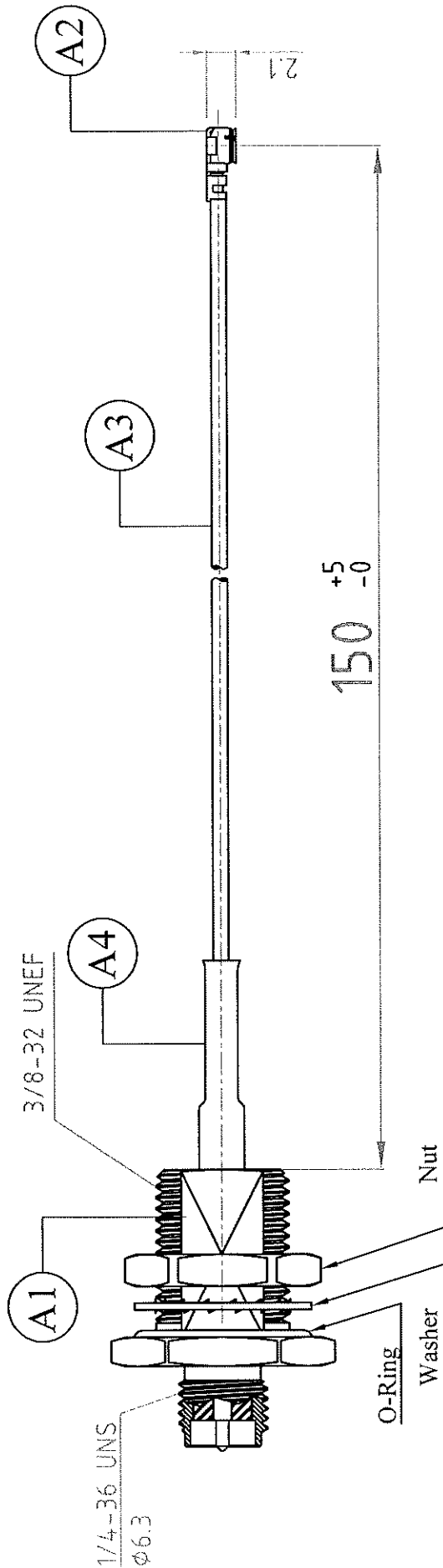
承認 APPROVED	確認 CHECKED	作成 DESIGNED
		

變 更 履 歷 書

[illegible]

Revisions

Note: Revisions B, B-1, B-2, ... On Behalf of Official Drawing. Revisions 1, 2, 3, 4, ... On Behalf of Experiment's Drawing.		
ISS	Symbol	Date
B		2011/08/26
	CHE for New Drawing Frame & New PN System	



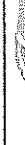
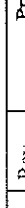
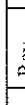
Notes :

1. Function test: 100% test for open, short and continuity.
2. Any specific function test should be specified prior to production so as to reflect the manufacturing cost.
3. Any electrical, mechanical or environmental test per MIL-C-39012 should be spotlighted, as we may not have all testing equipment to cover all of it.

Special notice :

1. Any questions, please contact Our R&D. Your attention on this matter is much appreciated.

*RoHS and REACH are fully complied to create a greener planet for future generations.

 RoHS 2		 S-CONN	
DWG.NO.		CAA162HEAAM0015	
TITLE		RS288+I-Pex for RG178 L=150 mm	
Proprietary Note This document contains information proprietary to S-Conn, which is either copyrighted, or patent applied for, and / or preceded by trade secret laws. This document or parts thereof, may not be used, disclosed or reproduced in any form by any method, or for any purpose, without the written permission of S-Conn, Taiwan		Customer P/N:	
Scale	Date	Rev.	
NTS	2014/12/08	B	
Tolerances :		All Dimensions in mm (Unless Otherwise Specified)	
± 0.5 mm	Drawn	Checked	
	Louis	Ryan	
			G. Sun
			2014/12/08
A4	HST-03-20	Shrinking Tube x 1	
A3	RG-178	RG178 Single Braided (MIT) Brown Cable	
A2	20278-112R-18	I-Pex(MHF)	
A1	RS288P0N01-M-5	RP SMA Bulkhead Crimp Jack	
ITEM	Part Number	Remark	

1. Application:

It's for Cable Assembly "CAA162HEAAM0015 " only.

2. Bill Of Material:

No.	Product Name	Item	Part Number	Quantity	Remark
1	Connector	A1	RS288P0N01-M-5	1	RP SMA Bulkhead Crimp Jack
2	Connector	A2	20278-112R-18	1	I-Pex MHF Plug
3	Cable	A3	RG-178	1	RG-178 Single Braided Cable
4	Shrinking Tube	A4	HST-03-20	1	Shrinking Tube

3. Outline:

Please refer to the drawing "CAA162HEAAM0015 ".

***Minimum bend radius: 10.0mm.

4. Inspection:

4.1 Standard Operation Procedure:

4.1.1 Incoming:

To check material, dimension, appearance for all piece parts by drawing.

4.1.2 First Article:

According to the work instruction to cut and strip length as pilot run.

4.1.3 Cable inspection:

To check all appearance of cables

4.1.4 Assembly:

To check all semi-finish piece parts for appearance and termination.

4.1.5 Sold inspection:

To check all sold section and see if it's solid and suitable

4.2 Inspection specification:

4.2.1 Open short:

No.	A1	A2	Result
1	A1 Center Conductor	A2 Center Conductor	Short
2	A1 Braided wire	A2 Braided wire	Short
Result	Open	Open	

4.2.2 Dimension Inspection:

To check all dimension per drawing.

4.2.3 Outgoing Inspection:

To check cable, shrinking tube and connector direction per drawing

4.3 Outgoing Inspection:

Checking the packaging, volume and label are per specification

4.4 Inspection Report:

Inspection report should be attached for every shipment

5. Packaging:

100 PCS in Bulk

6. Temperature:

Operating Temperature Range: -30°C ~ 85°C

Storage Temperature Range: -40°C ~ 90°C Humidity < 90 %

7. Location of Manufacture: Taiwan

8. Warranty:

We warrant our parts to be free of defects in material and workmanship under normal conditions within a year of shipment. We will repair or replace any defective parts under warranty period at our discretion.

9. Restriction of hazardous substances:

All products are complied with RoHS2

10. Attachment:

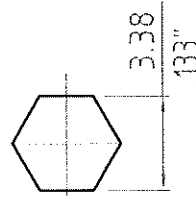
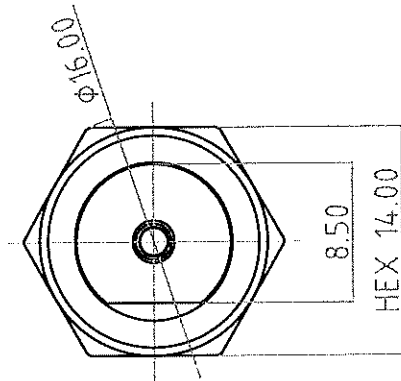
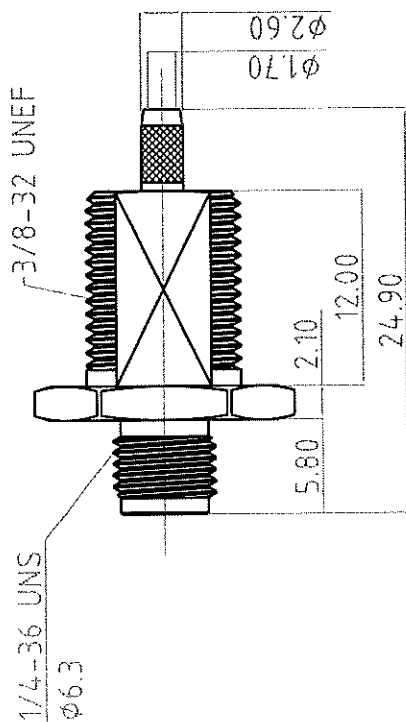
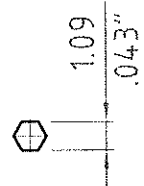
Attached is drawing and specification.

Revisions

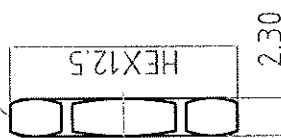
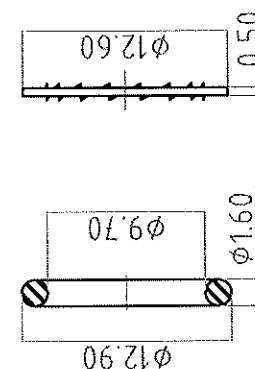
Note: Revisions B; B-1; B-2..... On behalf of official Drawing. Revisions 1; 2; 3; 4..... On behalf of experiment's Drawing.		
ISS	Symbol	Description
B		CHE for New Drawing Frame & New PN System
B-1		CHE for TITLE Description.
		Date
		2008/04/11
		2011/03/02

Note :

1. Single Crimp : Providing recommended dimensions for ferrule and center pin.
Dual Crimp: Providing recommended dimensions for ferrule and center pin.
Please advise Single/Dual in advance to avoid any inconvenience.
2. All metal material is in compliance with RoHs Directive
2002/95/EC Annex 4 (1) Section 6 paragraph.
所有金屬物料皆符合 RoHs 2002/95/EC 指令附件第4 (1) 第6項規定。
3. Recommended Crimped Hand Tool : for Center Pin P/N - HT-336TI
for Ferrule P/N - HT-31116N

Recommended Crimped
Dimensions for FerruleRecommended Crimped
Dimensions for Center Pin

3/8-32 UNEF



ITEM	Description	Material	Part Number	QTY
7	Nut	Steel	Nickel	1
6	Washer	Steel	Nickel	1
5	O-Ring	Si-Rubber	Black	1
4	Ferrule	Brass	Nickel	1
3	Pin	Brass	Gold	1
2	Insulator	PTFE	None	1
1	Body	Brass	Nickel	1
			Finish	
			Part Number	QTY

RoHS COMPLIANCE

DWG. NO.

RS288P0N01-M-5

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Tolerances :
X ±0.2
XX ±0.1
XXX±0.05

All Dimensions in mm.
(Unless Otherwise Specified)

Customer P/N:

TITLE

RP SMA Bulkhead Dual Crimp Jack, Front Mount Type
for RG174,188,316;B7805A;URM95 Cable



S-Conn Enterprise Co., Ltd

ISO 9001 Certified

SPECIFICATION FOR APPROVAL

DOCUMENT: WS17801A00

STYLE : RG-178B/U

SIZE : 30AWG SD

RECOGNIZED : UL 1979 105°C 30V

SPECIFICATION

Style	UL 1979 105°C 30V	Document No	: WS17801A00
Size	30AWG	Established Date	: 2006 - 01-09
Standard : MIL-C-17			
Conductor	Size	AWG	30
	Material	----	Silver-Coated Copper Clad Steel
	Constructors No.	----	7
	Construction Size	mm	0.102 ± 0.003
	Stranded Diameter	mm	0.31
Insulation	Material	----	FEP
	Color	----	Clear
	Average Thickness	mm	0.28
	Diameter	mm	0.86 ± 0.03
Braid Shield	Material	----	Silver-Coated Copper
	Construction	mm	$16/3/0.10 \pm 0.003$
	Coverage	%	95
	Diameter	mm	1.30 ± 0.04
Jacket	Material	----	FEP
	Color	----	Brown
	Average Thickness	mm	0.25
	Overall Diameter	mm	1.80 ± 0.06
Marking			
Drawing	Jacket Braid Shield Conductor Insulation		

Approval : Kenneth Ho

Confirm : Keep Wu

Maker : Liang Chen

SPECIFICATION

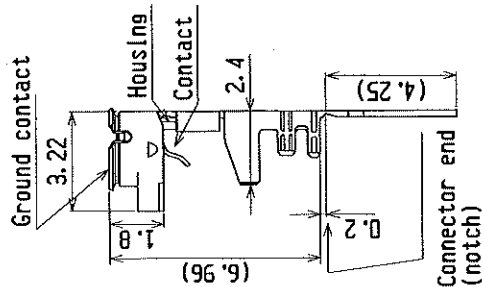
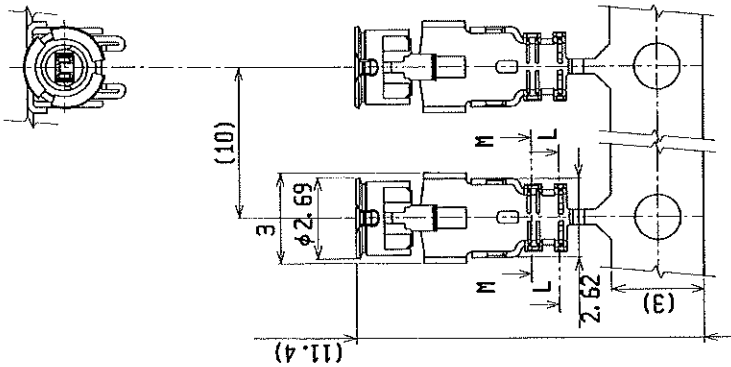
Electrical & Physical Properties							
Item			30AWG				
Rating Temp Voltage			105°C 30V				
Conductor Resistance			838 OHM/KM/20°C MAX.				
Insulation Resistance			3000 MEGA OHM/KM MIN.				
Dielectric Strength			AC 1.0 KV/Minute				
Spark Test			2.5 KV				
Insulation	Unaged	Tensile Strength	2500 PSI MIN. (1.76 Kg/m m ²)				
		Elongation	200% MIN.				
	Aged	Tensile Strength	UNAGED MIN. 75% (168HRS×232°C)				
		Elongation	UNAGED MIN. 75% (168HRS×232°C)				
Jacket	Unaged	Tensile Strength	2500 PSI MIN. (1.76 Kg/m m ²)				
		Elongation	200% MIN.				
	Aged	Tensile Strength	UNAGED MIN. 75% (168HRS×232°C)				
		Elongation	UNAGED MIN. 75% (168HRS×232°C)				
Nom. Impedance			50 ± 3 Ohms				
Nom. Capacitance			95.8 ± 3 pF/m				
Nom. Vel. of Prop.			69.5%				
VSWR (0 – 6 GHZ)			Under 1.3				
Attenuation (dB/1m)	1GHZ	1.8GHZ	2.4GHZ	3GHZ	5.2HZ	6GHZ	
	1.71	2.69	3.12	3.58	4.72	5.18	

Approval : Kenneth Ho

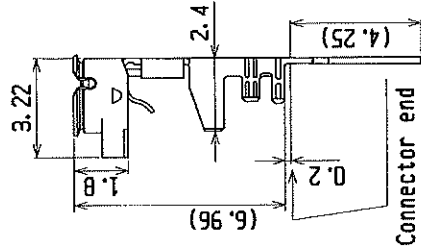
Confirm : Keep Wu

Maker : Liang Chen

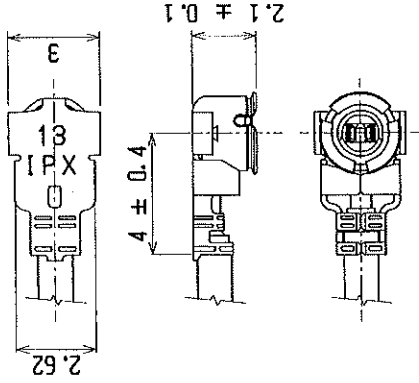
PART NO.
20278-...R-...



Part No. 20278-101R-08
20278-102R-08
20278-101R-13
20278-102R-13
20278-101R-32
20278-102R-32
For hand tool
(with notch)

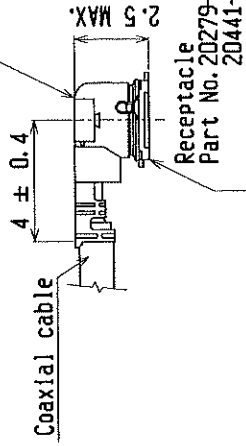


Part No. 20278-111R-08
20278-112R-08
20278-111R-13
20278-112R-13
20278-111R-32
20278-112R-32
For semi auto
termination machine
(without notch)



Cable Ass'y

Plug
P/N 20278-1...R-08
P/N 20278-1...R-13
P/N 20278-1...R-32



MATING

Part No. 20279-001E-01
20441-001E-01

I-PEX

Interconnect
and Potting Electronics
TOKYO, JAPAN

TITLE
MF series micro coaxial connector plug
vertical (ground contact : sold plating)
SCALE UNIT
6/1 mm
SHEET REV.
1/4 19C

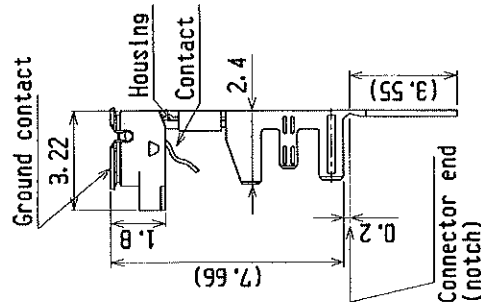
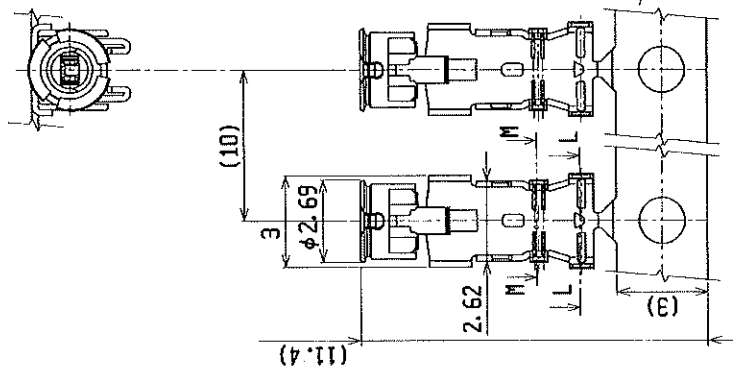
19C 20278-101R-08	DESIGN D BY	DATE
18C 20278-101R-08	K. Ohbayashi	JUN/13/01
17C 20278-101R-08	CHK D BY	DATE
16C 20278-101R-08	APP D BY	DATE
15C 20278-101R-08	K. Katabuchi	JUN/13/01
REV ECN BY DATE APP	CUSTOMER	PROJECTION
REV RECORD	COPY	6/1
SERIES No. 2814		

GENERAL TOLERANCE	
6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±2°

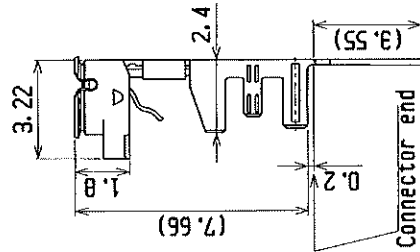
FORM REV. 4

WAS T

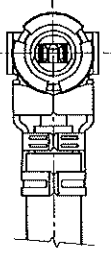
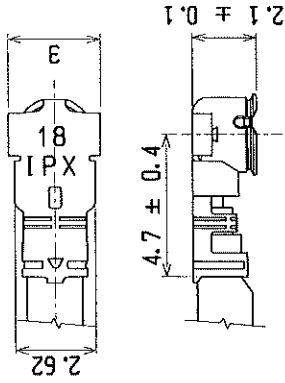
PART NO.
20278-...R...



Part No. 20278-101R-18
20278-102R-18
For hand tool
(with notch)

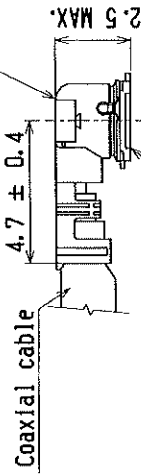


Part No. 20278-111R-18
20278-112R-18
For semi auto
termination machine
(without notch)



Cable Ass'y

Plug
P/N 20278-10R-18



Part No. 20279-001E-01
20441-001E-01

MATING

I-PEX

Interconnect
and Precision Electronics
TOKYO, JAPAN

TITLE				General			
REV	ECN	BY	DATE	APP	DATE	APP	DATE
REV. RECORD				CUSTOMER COPY			
SERIES No. 2814				20278			
SCALE UNIT 6/1 mm				2/4 19C			

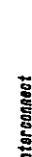
GENERAL TOLERANCE	
6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±2°

FORM REV. 4

WAS T

Part No. of non halogen free type	20278-101R-08 20278-111R-08 20278-112R-08	20278-101R-13 20278-111R-13 20278-112R-13	20278-101R-32 20278-111R-32 20278-112R-32	20278-101R-18 20278-111R-18 20278-112R-18
Housing color	White	Black	Black	White
Applicable cable nominal dimension				
Jacket	Dielectric core Outer conductor Silver or tin Inner conductor Silver plating			
Braided shield of Outer conductor 外部導体の編組	Single / 1層編組	Single / 1層編組	Double / 2層編組	Single / 1層編組
P/N of hand Tool	90187-008C	90187-013C	90187-032C	90233-018
P/N of seal auto termination machine	90213-008C	90213-013C	90213-032C	90232-018
Sect. M-M				
Sect. L-L				
Crimp Height	CH-1 1.34~1.40	CH-1 1.34~1.40	CH-1 1.34~1.40	CH-1 1.34~1.40
	CH-2 0.76~0.84	CH-2 1.06~1.14	CH-2 1.20~1.30	CH-2 1.41~1.49
	CH-3 0.85~0.97	CH-3 1.15~1.35	CH-3 1.26~1.46	CH-3 1.70~1.80

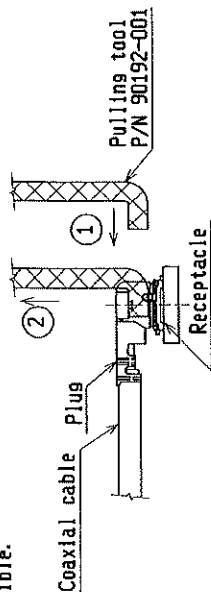
NOTE-1
中心導体, 外部導体への半田コーティングは不可
Must not use solder coated
inner conductor and outer conductor.

										Interconnect <i>and Protection Electronics</i> TOKYO, JAPAN									
										General									
										TITLE NIF series micro coaxial connector plus vertical (around contact : gold plating)									
										REVISION REV. 1									
										DATE 2027.08									
										PROJECT SCALE 1:1									
										CUSTOMER COPY 1									
										REV. RECORD 2814									
										SERIES No. 2814									
										DESIGN'D BY DATE									
										CHECK'D BY DATE									
										APP'D BY DATE									

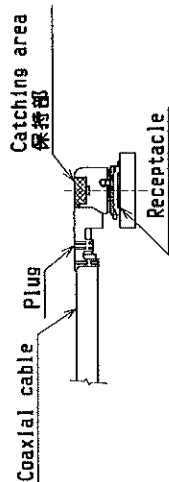
5-2 Unma

5-2 コネクタ抜き

- (1) In case of unmating by pulling tool.
Please use the pulling tool as the following drawing, and please pull plug to vertical direction as directly as possible.



- (2) In case of unmating directly by hand
Please catch the catching area of plug, and please pull plug to vertical direction as directly as possible.



5-3 Crimp over standards of outer conductor

Standards: Less than 10% from total numbers of outer conductor
(Numbers of outer conductor's crimp over from outer conductor's barrel)

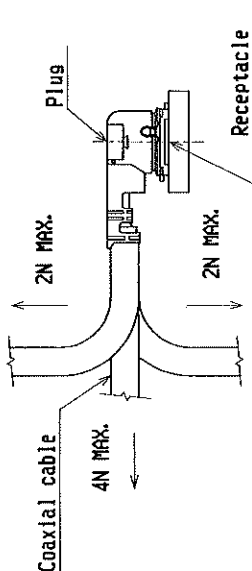
5-4 Caution about Heat shrinkage tubes

Please be careful not to melt housing when using heat shrinkage tubes.
It will become cause of open circuit.

6. This is 'Pb-free' connector.

Notes

- Material
(1) Housing : PBT , UL94V-0
(2) Contact
phosphor bronze
gold plating 0.1 μ m MIN.
over nickel 1.27 μ m MIN.
(3) Ground contact
phosphor bronze
gold plating 0.05 μ m MIN.
over nickel 1.27 μ m MIN.
Packing : reel
- Packing : reel
- Mating partner part No.
: 20279-001E-01, 20441-001E-01
- Permissible load of cable at mating



5. Suggestions for mating & unmating operation.

5-1 Mating.
Please mate the connector straightly to vertical direction as much as possible, adjusting the mating axis of plug and receptacle.
As excessive slant angle mating may break the connector, please don't do it.

5. コネクタの合着および抜き時の注意

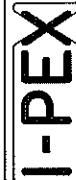
5-1 コネクタ挿入時
PlugとReceptacleの中心を合わせ、できるだけ垂直に挿入して下さい。
傾斜な斜め挿入は行わないで下さい。
コネクタ破損の原因となりますので、過度な斜め挿入は行わないで下さい。

5-3 外部導体はみ出し量

外部導体はみ出し量規定
: 外部導体トータル本数の10%以下
(外部導体バレルの外にみ出し量)

5-4 熱収縮チューブについて

熱収縮チューブで外部導体を覆う場合は、過度な斜め挿入によりハウジングを損傷させないよう注意して下さい。
6. 本コネクタは'Pb-free'である



Interconnect
and Potassium Electronics
TOKYO, JAPAN

DESIGN D BY		DATE	
CHK'D BY		DATE	
APP'D BY		DATE	
REV. EGN		BY	DATE
REV. RECORD		APP	
SERIES No.		2814	
CUSTOMER COPY		PROJECTION	
TITLE		SCALE UNIT	
MHF series electro coaxial connector plug		vertical (ground contact : solid plating)	
General		DWG. No.	20278
SHEET		REV.	4/4 19C

GENERAL TOLERANCE	
6 MAX.	± 0.2
6 OVER MAX. 30	± 0.3
30 OVER MAX. 120	± 0.5
ANGLE	$\pm 2^\circ$

FORM REV. 4

WAS T