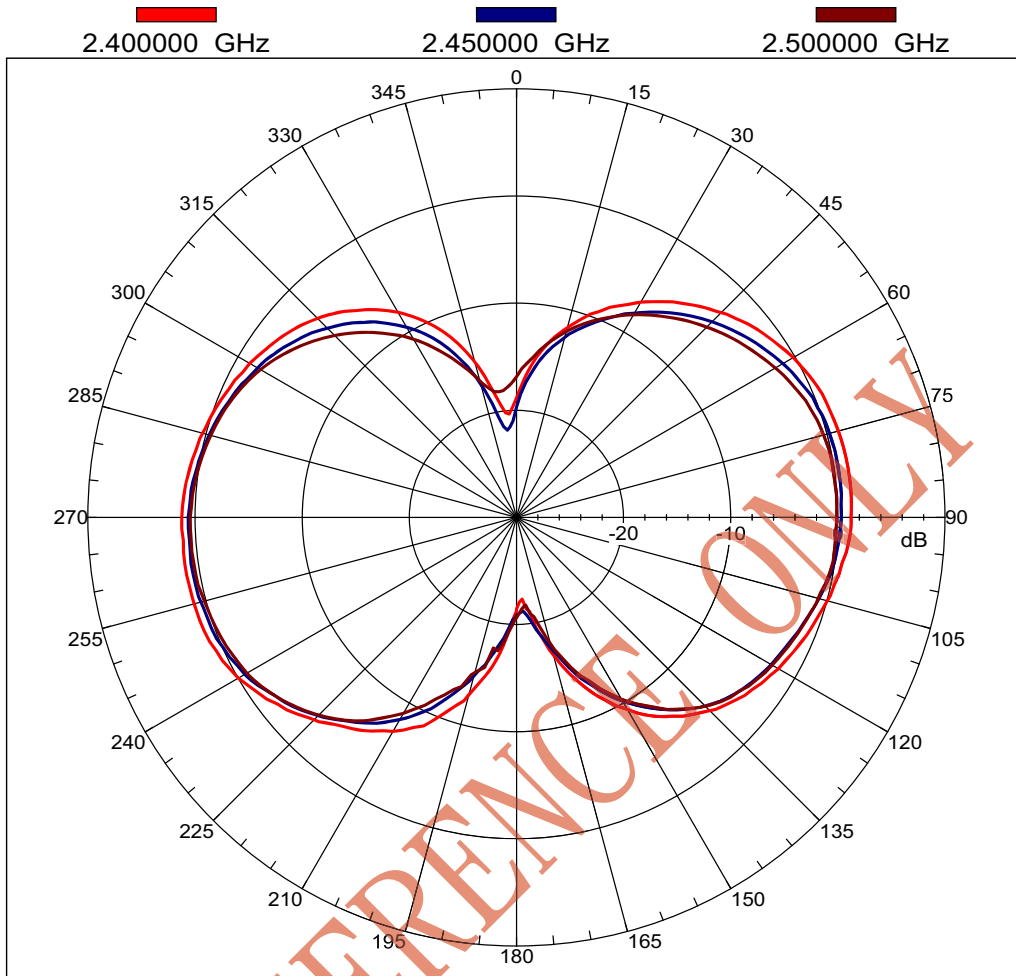


Far-field amplitude of CC037-510825-A SSR-72055 E-PLANE.nsi

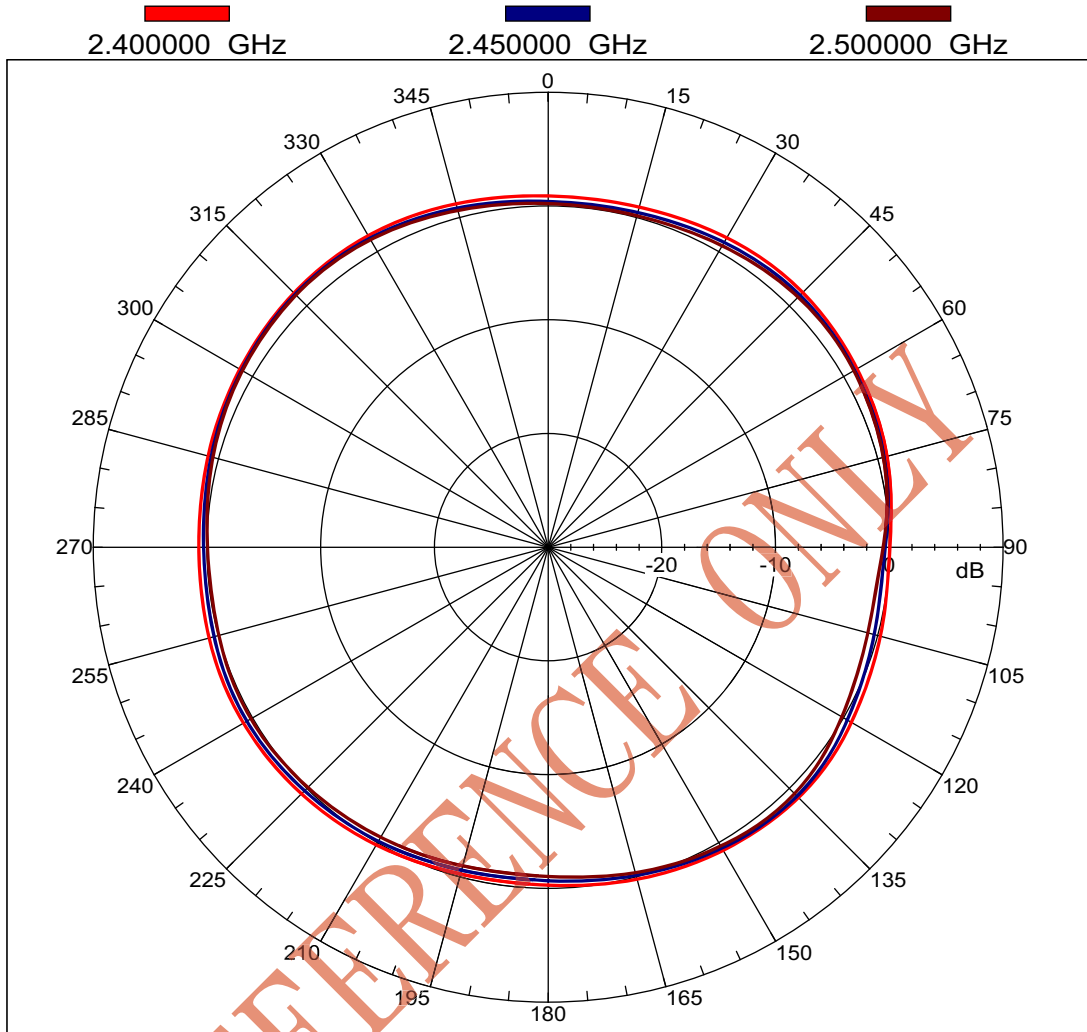


2007/7/3



Wha Yu Group

Far-field amplitude of C037-510825-A SSR-72055 H-PLANE.nsi



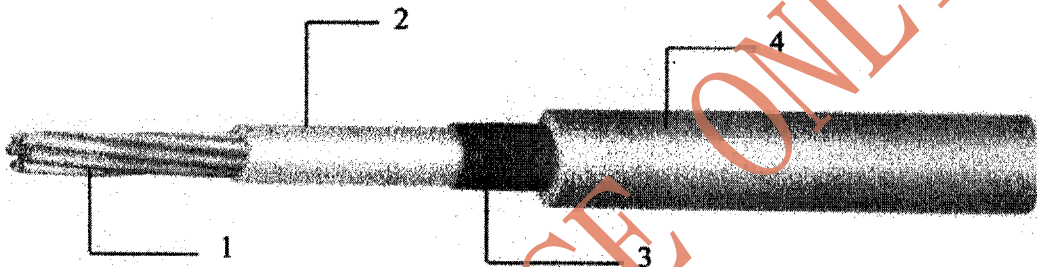
2007/7/3

RG 178 B/U	<b>FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE</b>	PAGE	1 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

**I - Scope**

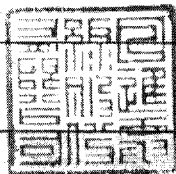
This specification presents a FEP insulated high-frequency coaxial cable AWG 30, 1.8 mm O.D. for internal wiring of electronic equipment, such as Computer / Notebook with wireless communication systems.

**II - Construction**



Item	Unit	Details
1. Inner Conductor	Material	— CP-AG
	Composition	No./mm AWG 30 or 7 x 0.1
	Dia. (approx)	mm 0.305
2. Dielectric	Material	— Extruded FEP
	Nom. O.D.	mm 0.84 ± 0.05
	Color	— Natural
3. Outer Conductor	Material	— Silver coated copper
	Composition	— Braided (16 / 3 / 0.1)
	Dia. (approx)	mm 1.29 ± 0.07
4. Jacket	Material	— Extruded FEP
	Dia.	mm 1.80 ± 0.08
	Color	— Standard color is Light Orange

Note :



MADE BY  
 APPROVALS

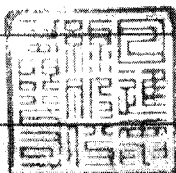
*Shen Bin Chao*  
*Shen Bin Chao*

RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	2 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

**III – Characteristics**

Item	Unit	Specified Value	Note
Temperature Rating	°C	-55 ~ +200	
Voltage Lasting	V	1000	
Dielectric strength	—	Dielectric core: No breakdown at AC 3 kv for 0.2 sec.	Spark test
		Jacket: No breakdown at AC 3 kv for 0.2 sec.	Spark test
Characteristic Impedance	Ω	50 ± 2	TDR method
Capacitance	pF / ft	29.4	
Attenuation. (Max.)	dB/100ft	16.0	100.0 MHz
		33.0	400.0 MHz
		52.0	1.0 GHz
		94.0	3.0 GHz
Approx. Weight	g / m	7.68	

Note :



MADE BY

APPROVALS

*Probe Lin*

*Shen Bin Chao*



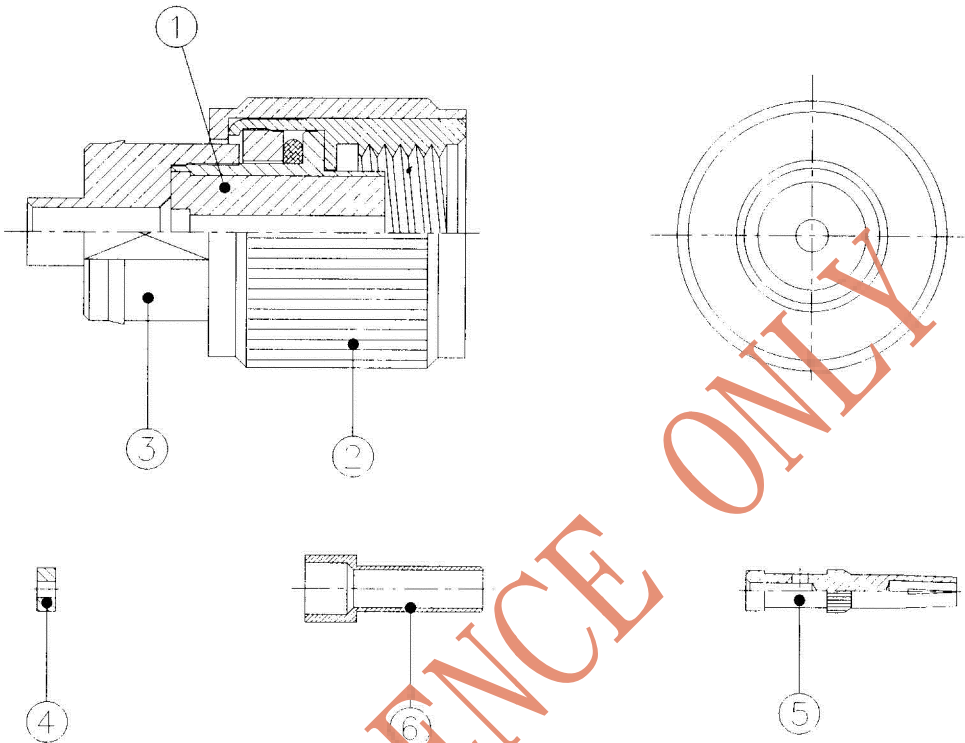
譚裕實業股份有限公司

WHA YU INDUSTRIAL CO., LTD

Connector 材質證明書

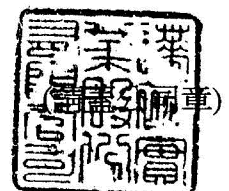
譚裕料號 Whayu P/N	100-2001156-AZ	產品名稱 Product Name	SMA Plug Reverse Straight For RG-178
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結構圖面



材質成份								表面處理
1	絕緣體	Teflon	PTFE					N/A
2	外殼	POM	POM					W.Y-010
3	本體	Brass	Cu	Pb	Fe	Fe+Sn	Zn	鍍鎳
4	絕緣體	Teflon	PTFE					N/A
5	中心針	Phos. Bronze	Cu	Sn	P	Zn	Pb	鍍金
6	尾管	Brass	Cu	Pb	Fe	Fe+Sn	Zn	鍍鎳

Remark :



Alpha PN :

零組件品名1 :

零組件品名2 :



REFERENCE ONLY

# 零組件承認/申請報告書

編號 E24682

2007/8/27

Alpha P/N : 505960079610G		申請者 :		主管 :	
零組件品名 : ANT CABLE Mini 1.13 L=80mm					
原製造廠商 : 電			原廠編號 : THW0796A		
代理商 : 電					
聯絡人 :		電話 : 02-22988066			
應用機種 :					
COMMENTS :					
<div style="border: 1px solid black; display: inline-block; padding: 5px;">結果</div>					
<p>號</p> <p style="font-size: 2em; color: red; opacity: 0.5; transform: rotate(-30deg); position: absolute; top: 50%; left: 50%;">REFERENCE ONLY</p>					
主管 :		<input type="checkbox"/> 承辦者 :		Panton No:	
				日期 : // : :	
結果	合格	審核			
			// : :		

承 認 書  
SPECIFICATION FOR APPROVAL

客 戶 CUSTOMER	明泰科技股份有限公司
日 期 DATE	2006 / 08 / 09
品 名 DESCRIPTION	Mini 1.13 Cable Assembly (L=80)(K5A) With RP-SMA Bulkhead Jack & MHF
客 戶 料 號 CUSTOMER P/N	505960079610G
成 品 編 號 Part NO.	THW0796A ( 符合環保材 )



萬旭電業股份有限公司  
WANSHIH ELECTRONIC CO., LTD.  
台北縣五股鄉五工六路 72 號 3 樓  
3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT  
TAIPEI HSIEN, TAIWAN, R.O.C.  
TEL : (02) 22988066 (5 LINE) FAX : (02)22981102

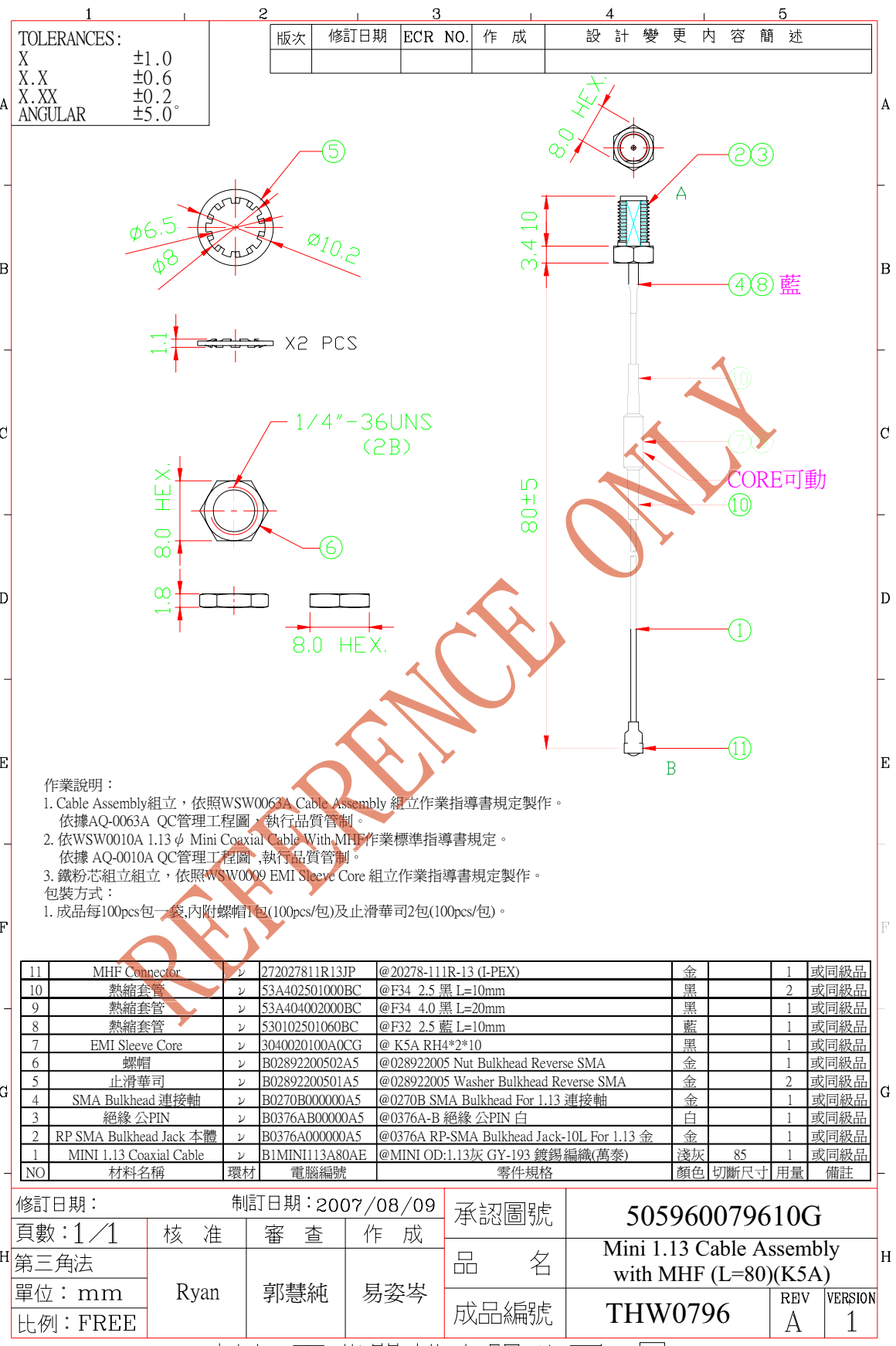


## Table of Contents

Table of Contents	1
Specification	2
Drawing	3
Cable Assembly Electrical Characteristic	
Return Loss	4
V.S.W.R	5
Attenuation	6
Material Sheet	
Mini 1.13 Coaxial Cable	7-9
RP-SMA Bulkhead Jack	10
MHF Connector	11-14
EMI Sleeve Core	15-17

## SPECIFICATION

1. Description : Mini 1.13 Cable Assembly  
with RP-SMA Bulkhead Jack & MHF
2. Customer : 明泰科技股份有限公司
3. Part No. : THW0796A
4. Coaxial Length : 80 mm (see Drawing)
5. Electrical Characteristics
  - Operating Frequency : 1~6 GHz
  - Impedance : 50 Ohm nominal
  - Attenuation. : -2.0dB Max.
6. Mechanical Characteristics
  - Connector : RP-SMA Bulkhead Jack  
: MHF
7. Raw Material
  - Coaxial Cable : Mini 1.13
  - Core : K5A RH4\*10\*2

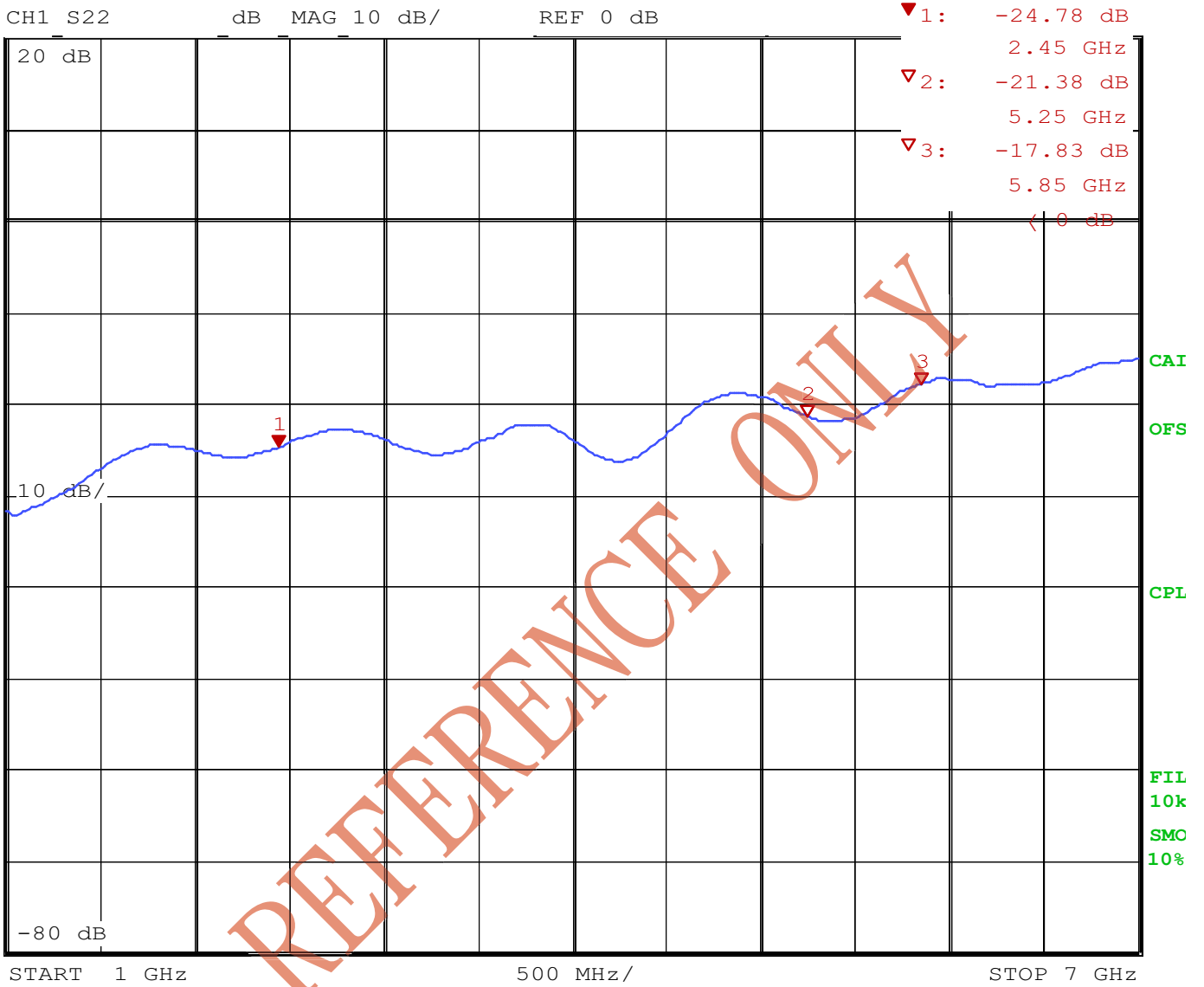


萬旭電業股份有限公司

50文件編號：FMT-0513-D7

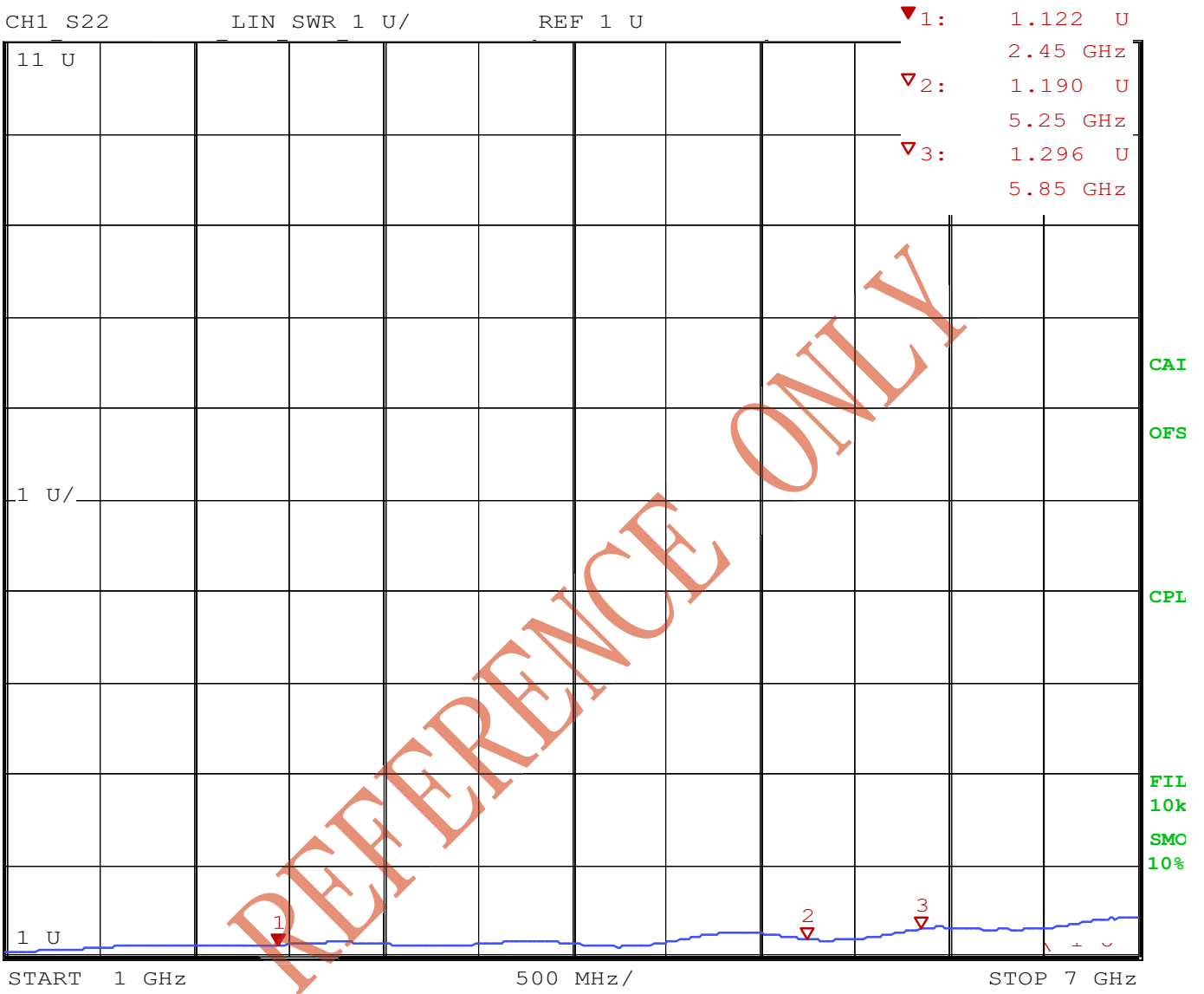
# Electrical Characteristic

## Return Loss



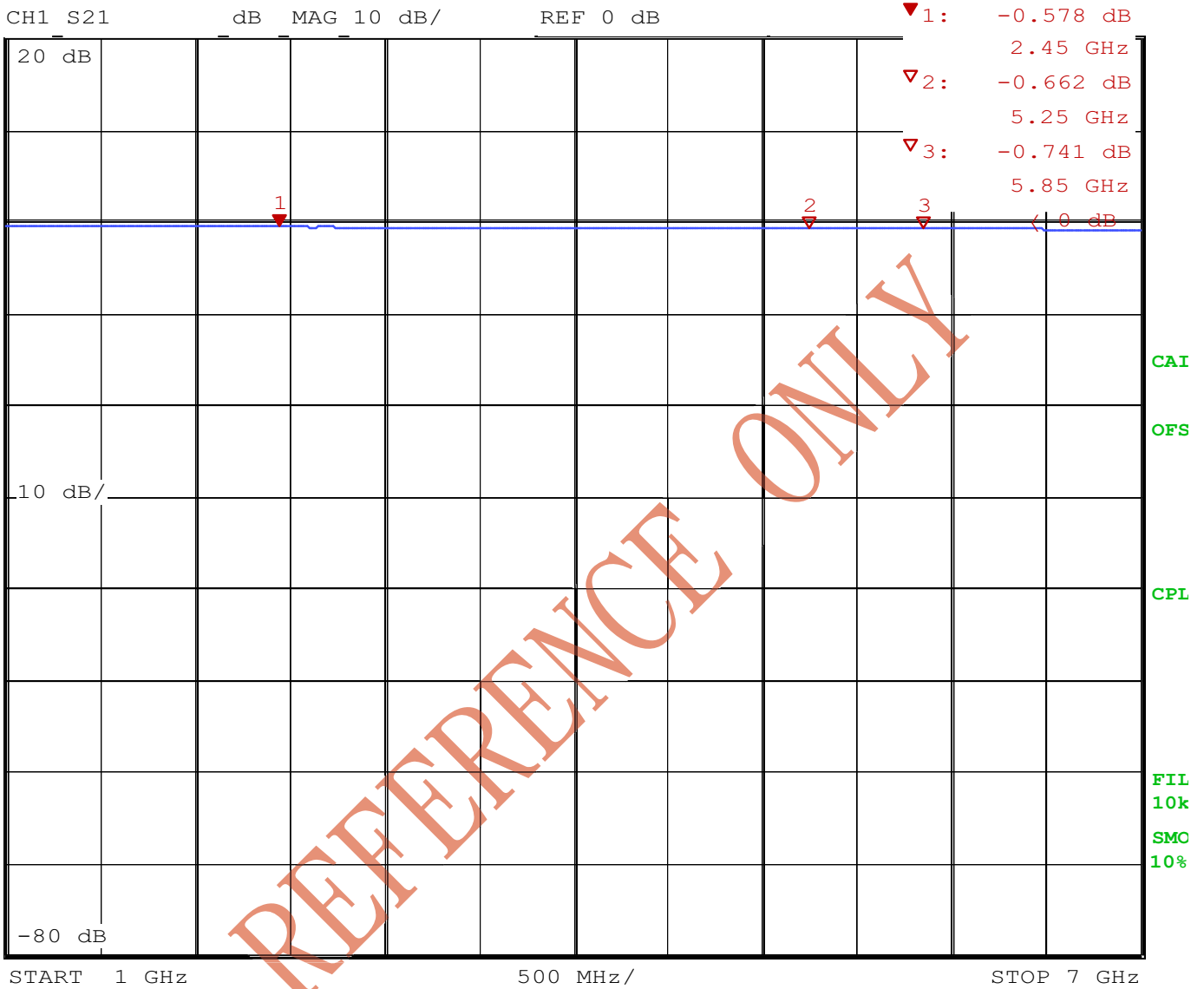
# Electrical Characteristic

## V.S.W.R



# Electrical Characteristic

## Attenuation



# Material Data Sheet

## Mini-1.13 Coaxial Cable

### SPECIFICATION FOR APPROVAL

DOCUMENT: A3132TS001

STYLE : COAXIAL CABLE  
105°C 30V

SIZE: 32AWG×1C  
BRAID : TS

RECOGNIZED: UL 1979



WONDERFUL HI-TECH CO.,LTD.

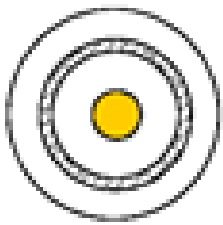
OFFICE : 72WU KONG 6TH ROAD,  
WU KU IND. DISTRICT  
TAIPEI HSIEN,TAIWAN

TEL : (02)22988033  
FAX : (02)22988031-2

FACTORY : 17 PEI YUAN ROAD,  
CHUNG-LI IND. PARK  
TAIWAN, R.O.C.

TEL : (03)4527777  
FAX : (03)4517214

**WONDERFUL HI-TECH CO., LTD.**  
**SPECIFICATION**

STYLE	105°C 30V UL 1979	DOCUMENT NO : A3132TS001	
SIZE	32AWG	ESTABLISHED DATE: 2005/05/11	
STANDARD :			
Conductor	Size	AWG	32
	Material	----	Silver Cover Copper
	Conductors No.	----	7
	Conductors Size	mm	0.080
	O.D.	mm	0.240
Insulation	Average Thickness	mm	0.22
	Diameter	mm	0.68 ± 0.02
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Tinned Copper
	Construction	mm	16 / 4 / 0.050
	Coverage	%	90
Jacket	Average Thickness	mm	0.13
	Diameter	mm	1.13 ± 0.05
	Material	----	FEP
	Color	----	According to custom
Marking	Non		
Drawing			

AK001/210X297/1.0

PAGE : 1

EDITION : 1.1

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG





# WONDERFUL HI-TECH CO., LTD. SPECIFICATION

Electrical & Physical Properties					
Item		32AWG			
Rating Temp Voltage		105°C 30V			
Conductor Resistance		545 OHM/KM/20°C MAX.			
Insulation Resistance		1000 MEGA OHM/KM MIN.			
Dielectric Strength		AC 500 V/Minute			
Spark Test		2.5 KV			
Insulation	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / m m <sup>2</sup> )		
		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 <sup>2</sup> )		
		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		96 ± 3 pF/m			
Nom. Vel. of Prop.		69%			
VSWR Test (0 – 6 GHZ)		Less 1.3			
Flame Test		VW-1 OK			
Attenuation (dB/1m)	2.0GHZ	2.4GHZ	2.5GHZ	5.0GHZ	6.0 GHZ
	2.80	3.10	3.15	4.85	5.20

AK001/210X297/1.0

PAGE : 2

EDITION : 1.1

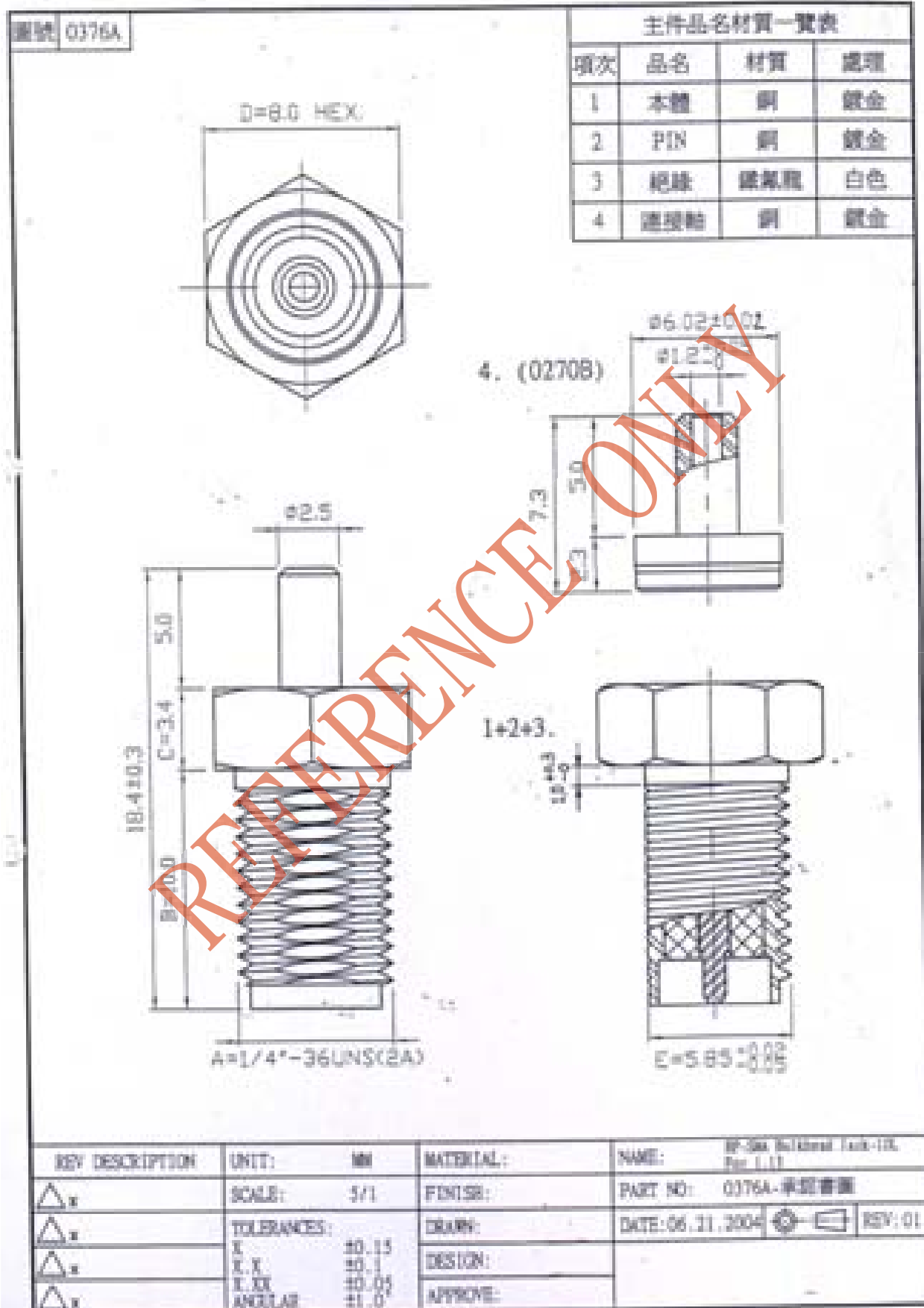
MAKER : C.Y.CHEN

CONFIRM :S.N.WONG

APPROVAL : W.J.WANG

# Material Data Sheet

## RP-SMA Bulkhead Jack



# Material Data Sheet

## MHF Connector

**PART NO.**  
20278-11R-08

**Cable Assy**  
Plug  
P/N 20278-11R-08  
P/N 20278-11R-13  
P/N 20278-11R-32

**MATING**  
Receptacle  
Part No. 20279-001E-01

**Part No. 20278-101R-08**  
20278-101R-13  
20278-101R-32

For hand tool  
(with notch)

**Part No. 20278-111R-08**  
20278-111R-13  
20278-111R-32

For semi auto  
termination machine  
(without notch)

**Part No. 20278-111R-08**  
20278-111R-13  
20278-111R-32

For semi auto  
termination machine  
(without notch)

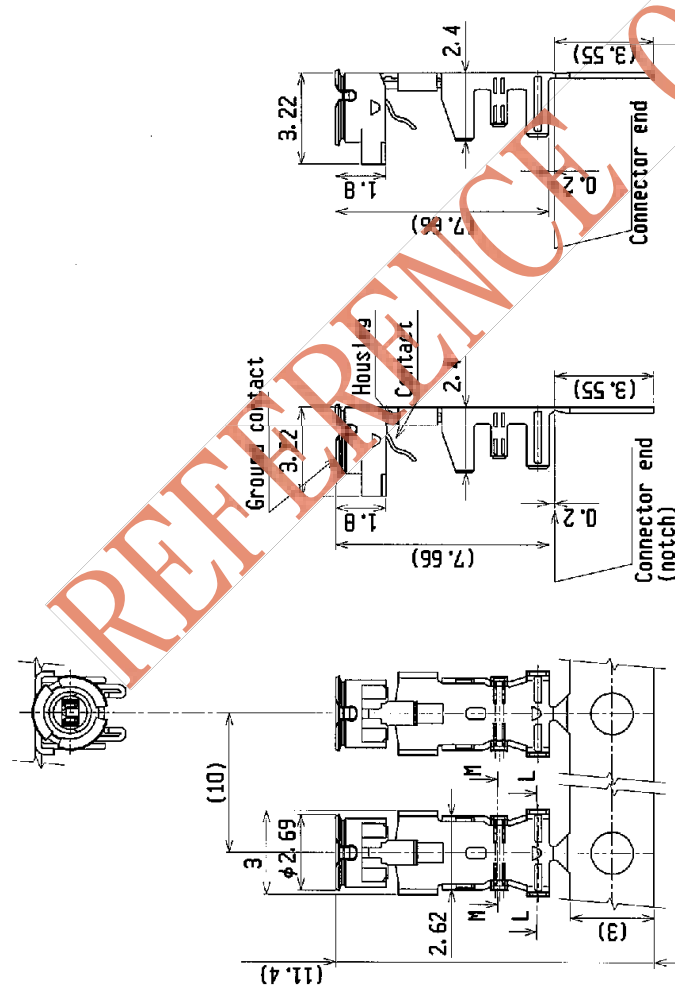
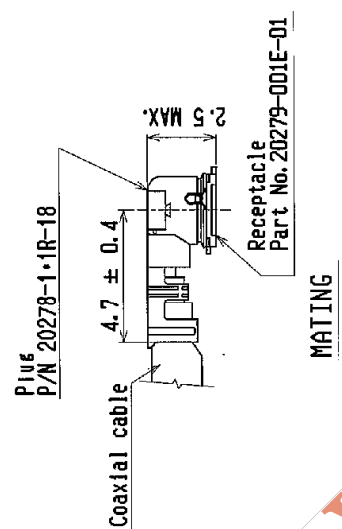
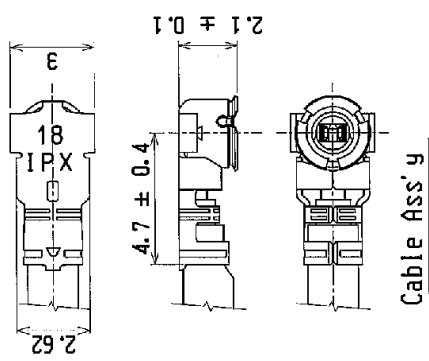
REFERENCE ONLY

REV	ECN	BY	DATE	APP	REV	ECN	BY	DATE	APP	SERIES No.	REV. RECORD	CUSTOMER COPY
11C	Z3041	K.O.	MM/24/03	K.K.	4	Z2023	K.O.	JUN/30/03	E.K.	DESIGN D BY		
10C	Z3014	K.O.	JAN/31/03	K.K.	3	Z1256	K.O.	NOV/14/01	K.K.	CHK D BY		
9C	Z2238	K.O.	NOV/15/02	E.K.	2	Z1197	K.O.	MIC/27/01	K.K.	CHK D BY		
8C	Z2224	K.O.	OCT/17/02	E.K.	1	Z1118	K.O.	JUN/26/01	K.K.	APP D BY		
7C	Z20499	K.O.	OCT/07/04	T.H.	0	Z1109	K.O.	JUN/13/01	K.K.	APP D BY		
6C	Z3074	A.H.	MAY/22/03	K.K.	0	Z1148	K.O.	JUN/21/03	K.K.	REV EGN		
5C	Z3052	K.O.	MAY/16/03	K.K.	58	Z1117	A.H.	MM/17/02	K.K.	REV EGN		
4C	Z3052	K.O.	MAY/16/03	K.K.	58	Z1117	A.H.	MM/17/02	K.K.	REV EGN		
3C	Z3074	A.H.	MAY/22/03	K.K.	0	Z1148	K.O.	JUN/21/03	K.K.	REV EGN		
2C	Z3074	A.H.	MAY/22/03	K.K.	0	Z1148	K.O.	JUN/21/03	K.K.	REV EGN		
1C	Z3052	K.O.	MAY/16/03	K.K.	58	Z1117	A.H.	MM/17/02	K.K.	REV EGN		

**GENERAL TOLERANCE**  
G MAX. ±0.2  
6 OVER MAX. 30 ±0.3  
30 OVER MAX. 120 ±0.5  
ANGLE ±2'

FORM REV. 4

PART NO.  
20278-1R-18



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

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

DESIGN'D BY		DATE	 Interconnect and Potassium Electroplating TOKYO, JAPAN		
CHK'D BY		DATE			
APP'D BY		DATE			
REV	ECN	BY	DATE	APP	TITLE
					MF series micro coaxial connector plus vertical (ground contact : gold plating)
REV. RECORD		PROJECTION		SCALE	UNIT
SERIES No. 2814		CUSTOMER COPY		8/1	MM
		DWS. No.		20278	SHEET REV.
		COPY			2/4 17C

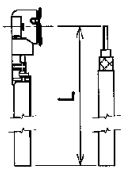
GENERAL TOLERANCE	
6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±

FORM REV. 4

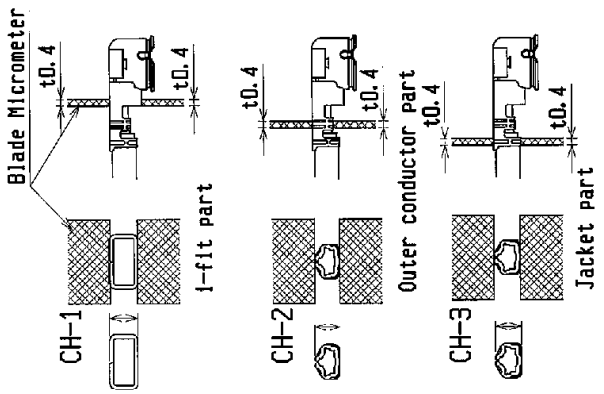
REFERENCE ONLY

Part No.	20278-101R-08 20278-111R-08	20278-101R-13 20278-111R-13	20278-101R-32 20278-111R-32	20278-101R-18 20278-111R-18
Housing color	White	Black	Black	White
Applicable cable nominal dimension	2.09±0.1 1.25±0.1 1.16±0.1	2.09±0.1 1.25±0.1 1.16±0.1	2.09±0.1 1.25±0.1 1.16±0.1	2.09±0.1 1.25±0.1 1.16±0.1
Jacket	Outer conductor silver plating Dielectric core Inner conductor silver plating	Outer conductor silver plating Dielectric core Inner conductor silver plating	Outer conductor silver plating Dielectric core Inner conductor silver plating	Outer conductor silver plating Dielectric core Inner conductor silver plating
	φ0.81 Nominal φ0.4 φ0.55 Nominal AM6326(7/0.85)	φ1.13 Nominal φ0.93 φ0.68 Nominal AM632(7/0.88)	φ1.32 Nominal φ1.12 φ0.66 Nominal AM632(7/0.88)	φ1.8 Nominal φ0.84 φ1.35 Nominal AM630(7/0.102)
	* NOTE-1	* NOTE-1	* NOTE-1	* NOTE-1
Braided shield of Outer conductor 外部導体の編組	Single / 1重編組	Single / 1重編組	Double / 2重編組	Single / 1重編組
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	1.68 1.12	2.24 1.48	2.29 1.56	2.71 1.9
Sect. L-L	1.72 1.19	2.28 1.55	2.37 1.71	3.1 2.26
Crimp Height	CH-1 1.34~1.40 CH-2 0.76~0.84 CH-3 0.85~0.97	1.34~1.40 1.06~1.14 1.15~1.35	1.34~1.40 1.20~1.30 1.26~1.46	1.34~1.40 1.41~1.49 1.70~1.80

Cable cut length



Crimp Height



NOTE-1

中心導体、外部導体への半田コティングは不可  
Must not use solder coated  
inner conductor and outer conductor.

GENERAL TOLERANCE

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

DESIGN'D BY	DATE
CHK'D BY	DATE
APP'D BY	DATE
REV. REC'D BY	DATE
REV. RECORD	APP
SERIES No.	2814
CUSTOMER COPY	PROJECTION



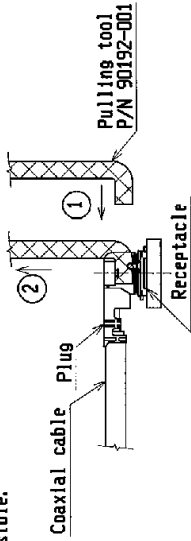
Interconnect and Pasternak Electronics TOKYO, JAPAN

TITLE MIF series micro coaxial connector plus vertical (ground contact : gold plating)  
SCALE UNIT DIM. No. 20278  
SHEET REV. 9/4 17C

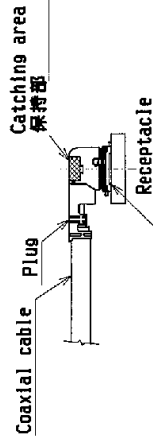
FORM REV. 4

5-2 Unmating.

(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  
Crimp over from outer conductor's barrel

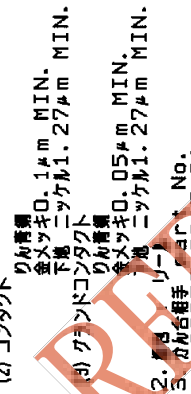
5-4 Caution about Heat shrinkage tubes

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

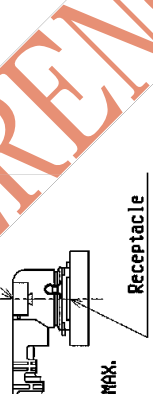
6. This is 'Pb-free' connector.

5-2 コネクタ抜き時

(1) 抜きシグを用いる場合  
下図のようにできるだけ垂直に引き抜いて下さい。



(2) 手で直接引き抜く場合  
下部の握持部をつかみ、できるだけ垂直に引き抜いて下さい。



5-3 外部導体はみ出し量

外部導体はみ出し量測定 : 外部導体トータル本数の10%以下 (外部導体バレルの外径はみ出し量)

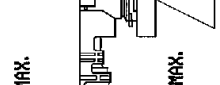
5-4 熱収縮チューブについて  
熱収縮チューブで外部導体保護の場合は、熱収縮チューブの溶融に注意してください。溶融によりハウジングが溶融され、開路の原因となります。

6. 本コネクタは 'Pb-free' である

1. 材料

- (1) ハウジング : PBT, UL94V-0
- (2) コンタクト  
リチウム青銅 0.1μm MIN.  
金メッキ 1.27μm MIN.
- (3) グランドコンタクト  
リチウム青銅 0.05μm MIN.  
金メッキ 1.27μm MIN.
- 2. 梱包  
リール
- 3. 組立相手  
部品 No. : 20279-001E-01
- 4. コネクタの許容負荷に対する荷重

2. 許容負荷



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.

5-2 コネクタ挿入時  
できるだけ垂直に挿入して下さい。コネクタの挿入は斜めに行わないで下さい。挿入角度が大きすぎると、コネクタが破損する可能性があります。

5-3 コネクタの抜き時  
プラグの握持部をしっかりと握り、できるだけ垂直に引き抜いて下さい。

6. これは 'Pb-free' コネクタです。

GENERAL TOLERANCE

6 MAX.	±0.2
6 OVER MAX. 30	±0.3
30 OVER MAX. 120	±0.5
ANGLE	±2'

DESIGN D BY

DATE	
CHK'D BY	
DATE	
APP'D BY	
DATE	

CUSTOMER COPY

PROJECTION UNIT	SCALE	UNIT	DATE	NO.
1:1	1:1	MM	20278	

INTERCONNECT

TITLE	REV.	SHEET	REV.
MHF series micro coaxial connector plug vertical (ground contact : gold plating)		4/4	17C

FORM REV. 4

WAS T

# Material Data Sheet

## EMI Sleeve Core

### SPECIFICATION FOR APPROVAL

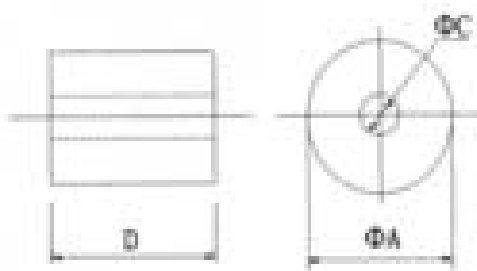


CUSTOMER: 萬旭電業股份有限公司		DIE: 2003/10/9	
ITEM: KSA RE 402X10		REF NO: 10-13-040020100-0	
(1) DIMENSION (Unit: mm)			
		A	4.00 ± 0.20
		C	2.00 ± 0.15
		D	10.00 ± 0.40
(2) ELECTRICAL REQUIREMENTS:			
		FORM:	
		TEST FREQ	
		TEST FREQ	
Z	35 ± 0	TEST FREQ	25 MHz
Z	60 ± 0	TEST FREQ	100 MHz
		TEST FREQ	
COIL DATA	Q <sub>min</sub> L <sub>min</sub>	TEST FREQ	
Winding 0.65 Φ I 63 mm T.C.W 1 TS			
(3) TEST INSTRUMENTS			
1. IMPEDANCE ANALYZER: HP4191A			
DRAWN	CHECKED	APPROVED	ISSUE NO.
DATE	DATE	DATE	WC-EM-030

佳真股份有限公司  
CORE-TECH CORPORATION

TEL: 03-4861211  
FAX: 03-4861210

# INSPECTION DATA

ISSUE NO: WC-RH-039

CUSTOMER	萬旭電業股份有限公司	DATE	2003/10/9	Quantity	0 pcs								
PART NO.	10-13-040020100-0												
ITEM	K5A RH 4X2X10												
COIL SPEC	0.05 Φ I 63 mm T.C.W I TS												
COIL DATA	Q0=                      C0=                      (PF)												
TEST FREQ	F0=                      Hz Ft= 25,100 MHz												
TEMPERATURE	28 ℃      Humidity      87 %												
ELECTRIC CHARG.						DIMENSION (Unit: mm)							
	L	Q	Z(25)	Z(100)	A	B	C	D	E	F	G	H	I
SP			35.00	60.00	4.00		2.00	10.00					
+					0.20		0.15	0.40					
-			0	0	0.20		0.15	0.40					
1			45.00	82.00	3.96		2.02	9.95					
2			47.00	84.00	3.93		2.03	9.98					
3			46.00	82.00	3.92		2.04	9.96					
4			47.00	82.00	3.94		2.03	9.98					
5			45.00	81.00	3.95		2.08	9.96					
6			46.00	80.00	3.93		2.05	10.00					
7			46.00	81.00	3.95		2.03	10.02					
8			46.00	81.00	3.93		2.07	9.95					
9			46.00	80.00	3.92		2.09	9.93					
10			45.00	82.00	3.96		2.05	9.97					
Σ			45.90	81.50	3.94		2.05	9.97					
R			2.00	4.00	0.05		0.07	0.09					
TEST INSTRUMENTS						INSP No:							
1. IMPEDANCE ANALYZER: HP4191A													
REMARK:						Inspected		Checked		Approved			
													

CORE-TECH CORPORATION

TEL: 03-4201210  
FAX: 03-4201216

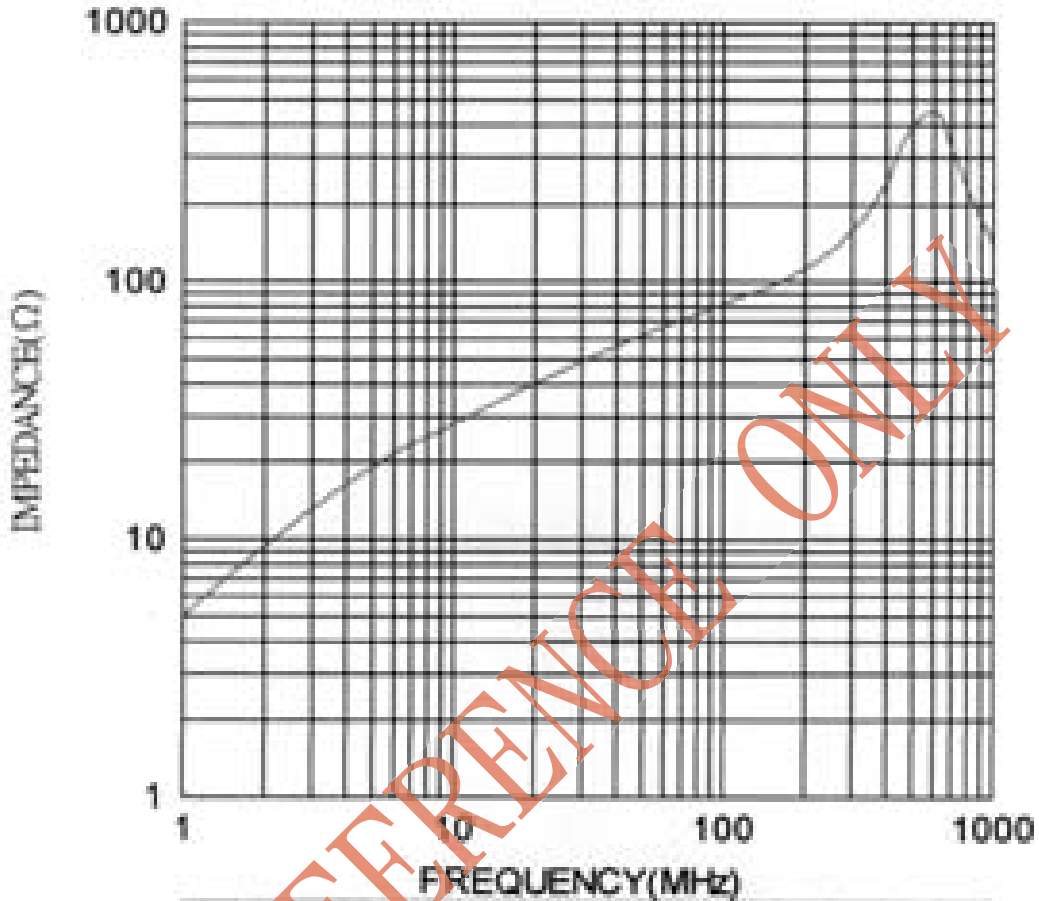


## Z-F RESPONSE

K5A RH 4X2X10

1. TEST INSTRUMENT: HP4191A

2. WINDING: 0.65  $\Phi$  X63 mm T.C.  $\nabla$  ITS



	1	5	10	25	50	100	200	300	400	500	600	700	800	900	1000
Z—	5	15	26	45	62	82	113	160	244	392	452	322	239	176	141

(DATA BETWEEN 500MHz AND 1000MHz ARE FOR REFERENCE ONLY)

### CORE-TECH CORPORATION

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