


TO:           凱碩科技股份有限公司          

## SPECIFICATION FOR APPROVAL

DESCRIPTION :           2.4G ANTENNA-SMA(MALE-RP)CONNECTOE            
PART NO :           2AN-C201BK-019R            
慶陸 PART NO :           6602103081-000            
DATE :           2009/07/02          

PLEASE RETURN TO US ONE COPY OF “ SPECIFICATION FOR APPROVAL ” WITH YOUR APPROVED SIGNATURES

APPROVED SIGNATURES			
			

廣州市慶隆電子塑膠五金有限公司  
蘇州慶旺電子科技有限公司  
慶宏電子(東莞)有限公司



慶陸工業股份有限公司  
KINSUN INDUSTRIES INC.

桃園縣中壢市普忠路 211 巷 20 號

TEL : 886-3-4353551

FAX : 886-3-4353951

[Http://www.kinsun.com](http://www.kinsun.com)

e-mail: [jason@kinsun.com](mailto:jason@kinsun.com)

## **TECHNICAL DATA**

### **Electrical Properties**

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**Frequency Range: 2.4~2.5 GHz**

**Impedance: 50 Ohm nominal**

**V.S.W.R :  $\leq 2.0$**

**Gain : 2dBi $\pm$ 0.25**

**Radiation: Omni**

**Polarization: Vertical**

**Electrical Wave: Dipole array**

**Connector: SMA (MALE-RP) CONNECTOR**

### **Mechanical Properties**

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**Antenna Cover: PLASTIC**

**Color : BLACK**

**Operation Temperature:-20°C~+65°C**

**Storage Temperature:-30°C~+75°C**

**MECHANICAL**

Antenna Cover : PU

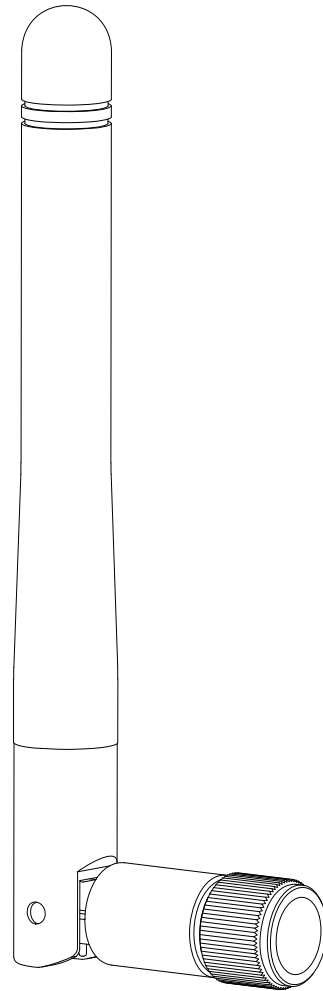
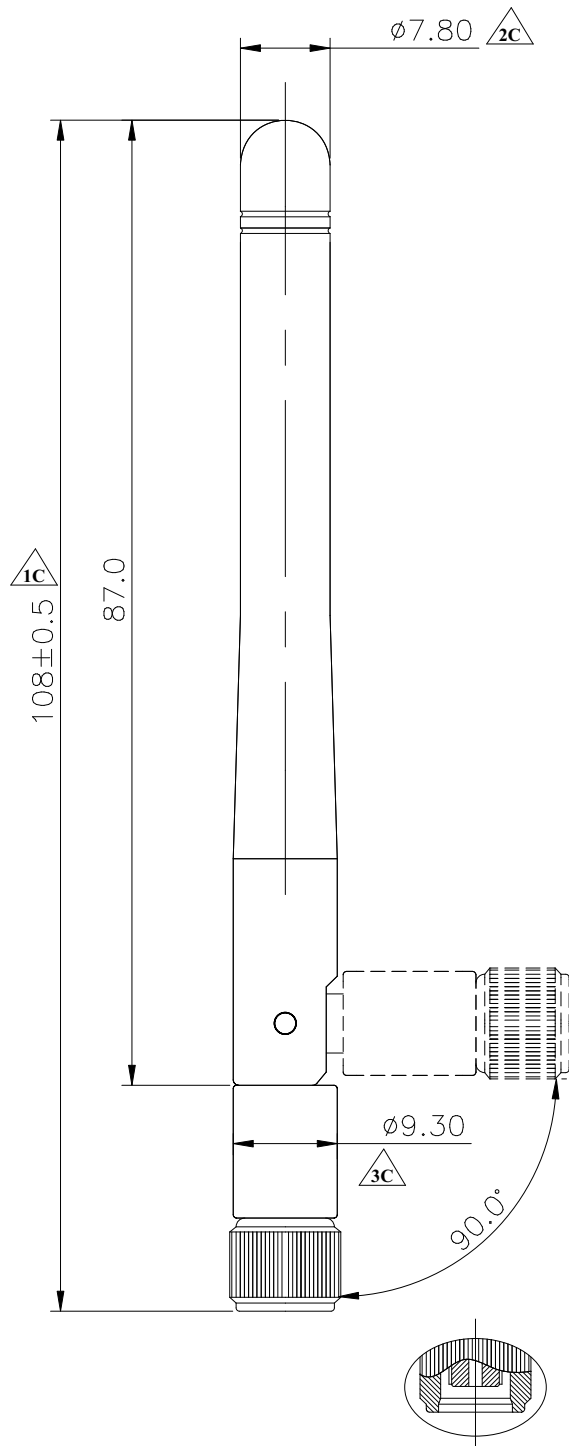
Antenna Base : PC UL 94V-0

Color : Black

**ELECTRICAL**

Frequency : 2.4GHz

Connector : SMA-Male-RP



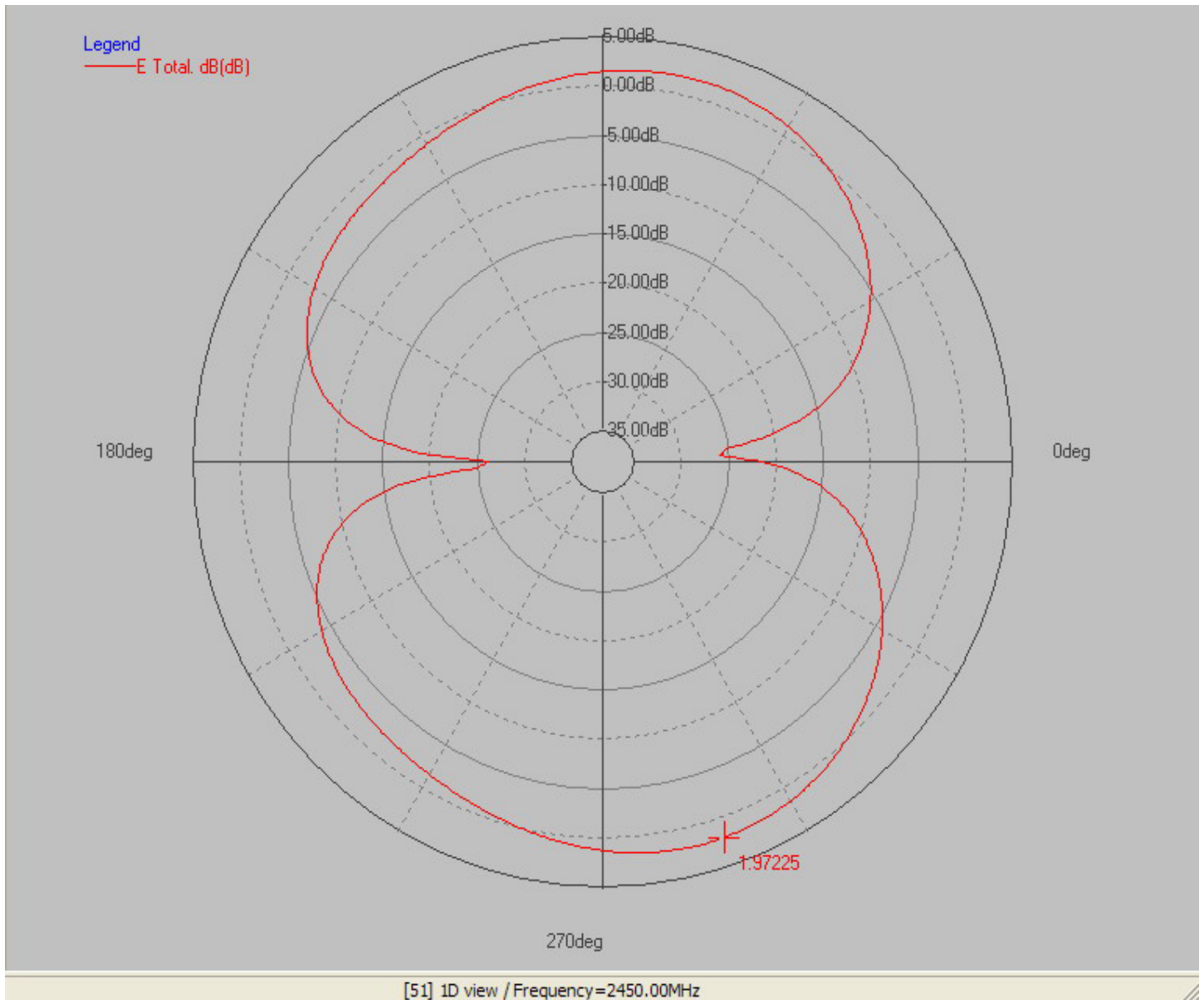
※ 凡標註  $\triangle$  記號者, 為品管檢驗之尺寸

設計 DR. Marco 94/01/03	核准 APPD. Jerry 94/01/03	容許公差 .XXX $\pm 0.10$ .XX $\pm 0.25$ .X $\pm 0.38$ X $\pm 0.50$ ANG $\pm 3^\circ$	TOLERANCE	品名 ARTICLE 6602-2.4G-SMA
版本說明 REVISION NOTE				圖號 DWG NO. 6602103081
KINSUN 慶陞		單位 UNIT mm		比例 SCALE 1.5/1
		張數 SHEET 1/1		版本 REV. A

Brand / Model : 6602103081-000

Remark : 2450MHz

Tested by : Nick Dai



-- : Max. deg

\*Unit : dBi

Frequency(MHz) : **2450.00**

Pattern Field : **E plane**

Average Gain(dB) : **-2.46dB**

Maximum Gain(dB) : **1.97dB**

Maximum Gain(degree) : **-71.43**

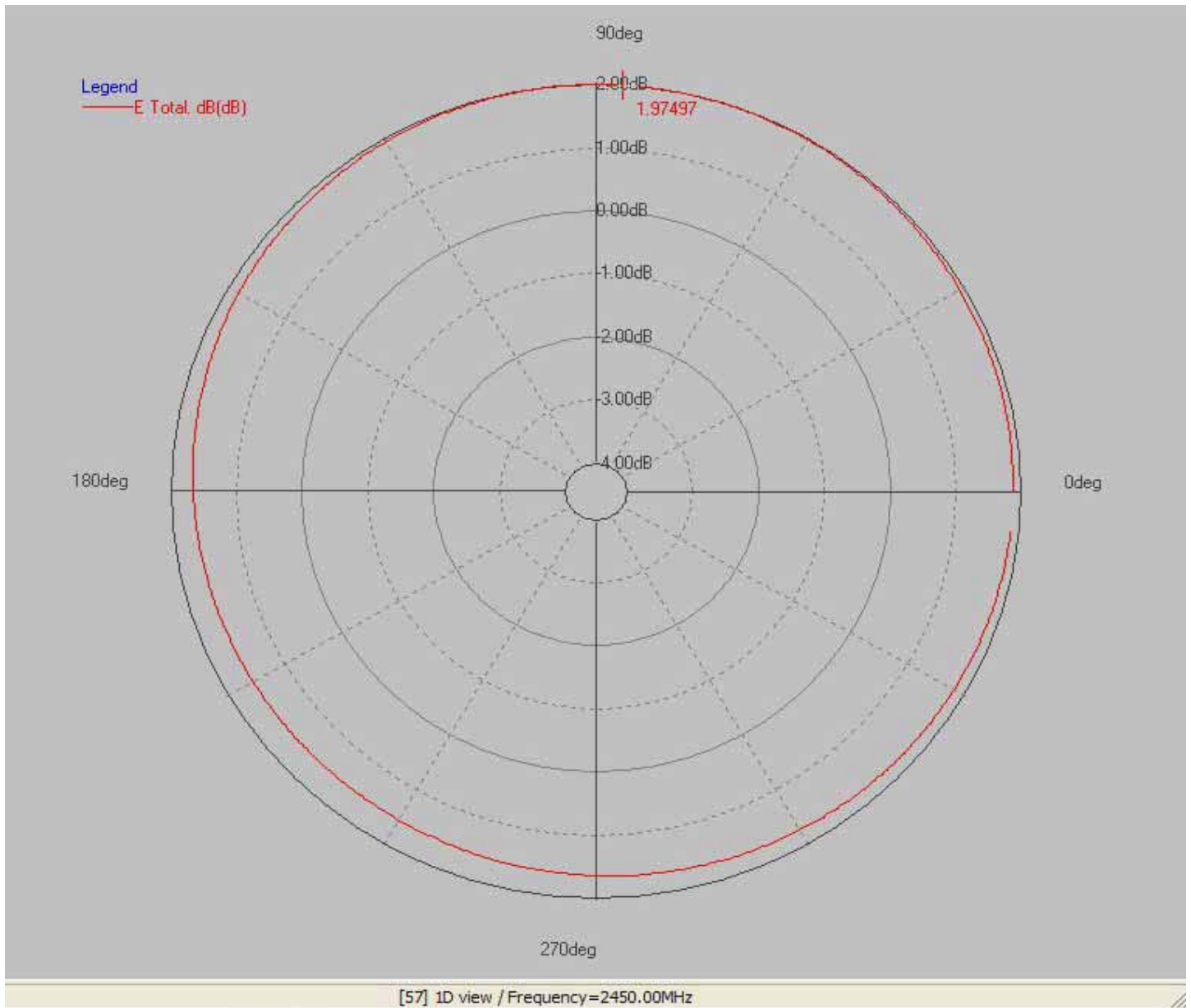
Minimum Gain(dB) : **-26.29dB**

Minimum Gain(degree) : **-180.00**

Brand / Model : 6602103081-000

Remark : 2450MHz

Tested by : Nick Dai



-- : Max. deg

\*Unit : dBi

Frequency(MHz) : **2450.00**

Pattern Field : **H plane**

Average Gain(dB) : **1.78dB**

Maximum Gain(dB) : **1.97dB**

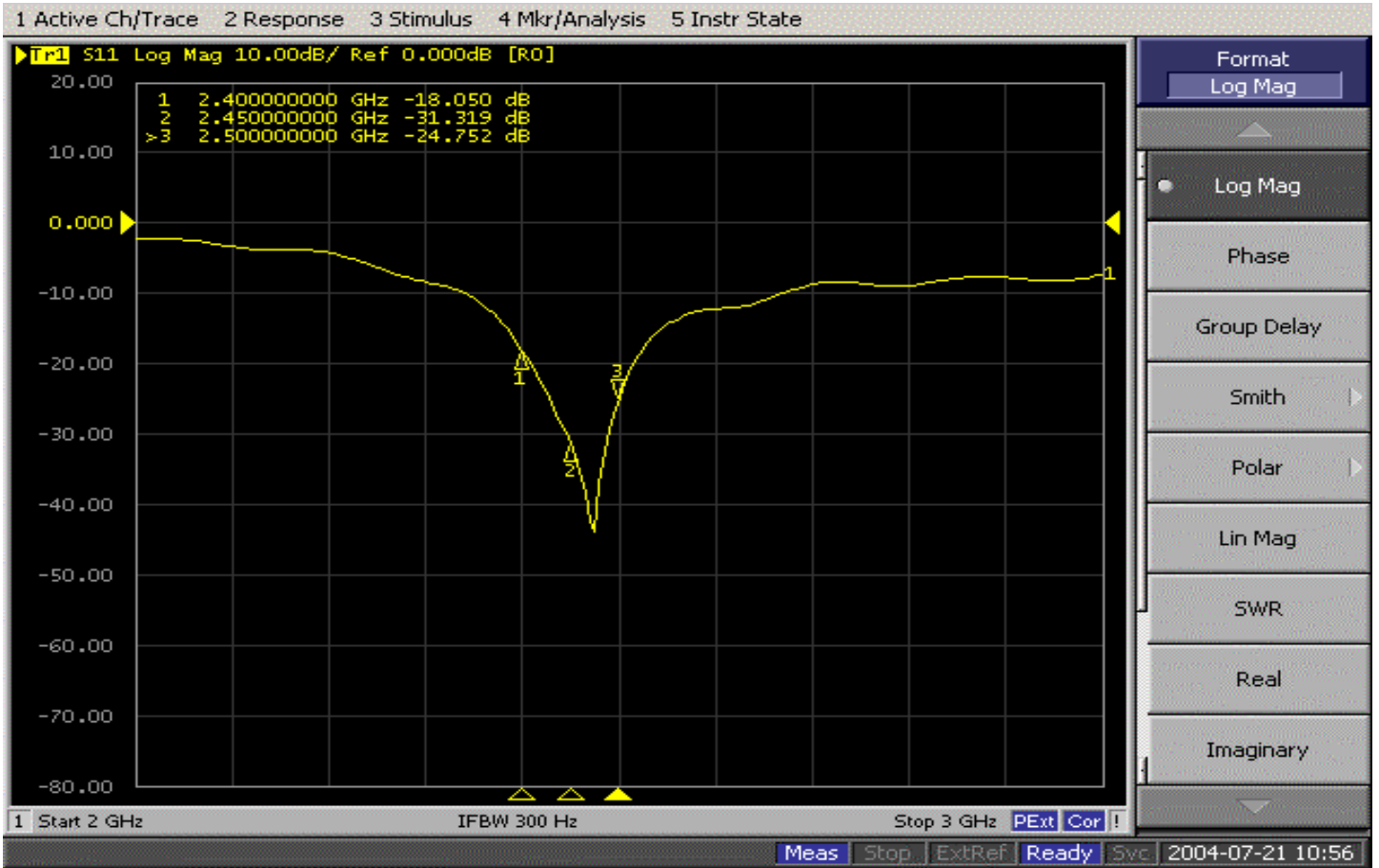
Maximum Gain(degree) : **85.50**

Minimum Gain(dB) : **1.54dB**

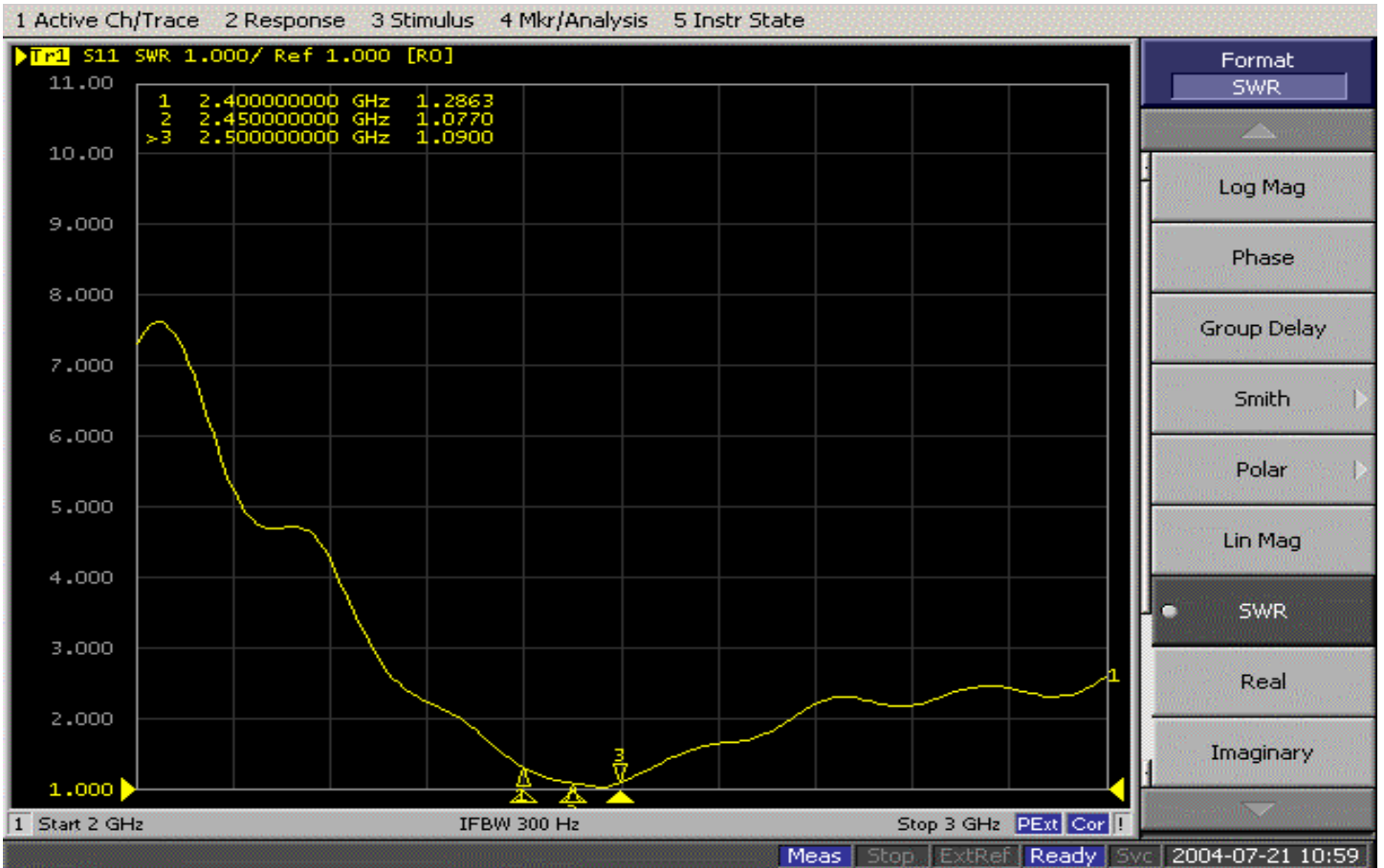
Minimum Gain(degree) : **228.81**

6602103081-000

S11



VSWR



# Elastollan<sup>®</sup> S Series

## Technical Bulletin

## Polyester Type

Elastollan<sup>®</sup> S series of products are polyester-based thermoplastic polyurethanes that exhibit good hydrolytic stability. They also exhibit good oil, fuel and solvent resistance. These products can be injection molded, blow molded and extruded. All grades should be dried before processing. Elastollan<sup>®</sup> products can be stored for up to 1 year in their original container. Containers should be stored in a cool, dry area.

**Extrusion grades: S90A**

**Injection molding grades: S80A to S60D**

Physical Properties	Units	ASTM Method	S80A <sup>3</sup>	S85A <sup>3</sup>	S90A <sup>3</sup>	S95A <sup>3</sup>	S98A <sup>3</sup>	S60D <sup>3</sup>
Specific gravity	gr./cm <sup>3</sup>	D-792	1.21	1.22	1.23	1.23	1.24	1.25
Hardness	Shore A D	D-2240	80 ± 2	85 ± 2	92 ± 2	96 ± 2	98 ± 2	-
				-	41 ± 2	48 ± 2	54 ± 2	60 ± 2
Tensile strength	MPa psi	D-412	27.5	34	39	42	42	43
			4000	4900	5600	6100	6100	6200
Tensile stress @100 % elongation	MPa psi	D-412	5.5	6.9	11	14	19	22
			800	1000	1550	2000	2700	3200
@300 % elongation	MPa psi		9.6	14	20	26	32	37
			1400	1980	2900	3800	4700	5300
Elongation @brk.	%	D-412	650	690	540	510	425	450
Tensile set @brk.	%	D-412	45	35	55	70	80	110
Tear strength	N/mm lb./in.	D-624 DIE C		104	128	154	185	195
				590	730	875	1050	1150
Abrasion resistance	mg (Loss)	D-1044 <sup>2</sup> (Taber)	25	25	25	30	50	50

*Test samples were cured 20 hours @ 100 °C before testing.*

- NOTE:** <sup>1</sup> These products can only be ordered in minimum quantities. Please contact your sales representative for details.  
<sup>2</sup> H-18 wheel, 1000 gm weight and 1000 cycles.  
<sup>3</sup> Products with an N designation do not contain hydrolytic stabilizers. Contact Elastollan Technical Service Rep for further information

**Caution:** Contact with product dusts from regrinding operations may cause temporary irritation of the eyes and the respiratory tract. Use with local exhaust. Under hot melt processing conditions (170-230 °C), wear personal protective equipment to prevent thermal burns.

**First aid:** *Eyes*-Flush eyes with flowing water at least 15 minutes. If irritation develops, consult a physician. *Skin*-Skin contact with hot melt may cause thermal burns. Call a physician immediately. *Inhalation*-If vapors generated from the hot melt process are inhaled, move to fresh air. Aid in breathing. If breathing difficulties develop, see a physician immediately.

**In case of fire:** Use water fog, foam, CO<sub>2</sub>, or dry chemical extinguishing media. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

**Disposal:** Waste material, unused contents and empty containers must be disposed of in accordance with applicable local, state or federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

**In case of chemical emergency:** Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents. 800-424-9300

**Attention:** This product is sold solely for use by industrial institutions. Refer to our Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth or that the products designs, data or information may be used without infringing the intellectual property rights of others in no case shall the descriptions information, data or designs provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the descriptions, designs, data and information furnished by BASF hereunder are provided gratis and BASF assumes no obligation or liability for the description, designs data and information given or results obtained, all such being given and accepted at your risk.

BASF Corporation, 1609 Biddle Avenue, Wyandotte, Michigan 48192 (800) 892-3111 x21, [www.basf.com/elastollan](http://www.basf.com/elastollan)

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# BASF



日本帝人化成聚碳酸酯樹脂 POLYCARBONATE RESIN "TEIJIN PANLITE"

規 格 型 號 特 性	比 重 g/cm <sup>3</sup>	透 光 率 3mm 厚度 %	彎 曲 強 度 kg/cm <sup>2</sup>	衝 擊 強 度 3mm 厚度 kg.cm/cm	熱 變 形 度 12.5kg °C	吸 收 率 %		防 火 等 級 UL-94	
						混 向	交 向		
高衝擊級 I.E-1250	1.18	半透明	21,500	85	134	0.5 ~ 0.9		H5	
防火級 I.N-1250 I.N-2250 ✓	1.22	80	22,300	80	136	0.5 ~ 0.7		V-0	
	1.22	半透明	23,000	80	133	0.5 ~ 0.7		V-0	
光反射射級 I.D-1000RM	1.23	光線反射率 2mm 96 以上	25,000	80	134	0.4 ~ 0.6			
玻璃纖維強化級 PANLITE-G GLASS FIBRE REIN- FORCED GRADE	G-3110	射出玻璃纖維 10 %	1.27	半透明	36,000	9	146	0.3 ~ 0.5 0.4 ~ 0.5	V-2 V-0
	G-3115	射出玻璃纖維 15 %	1.30	半透明	45,000	12	147	0.2 ~ 0.4 0.4 ~ 0.5	V-2 V-0
	G-3120	射出玻璃纖維 20 %	1.34	半透明	55,000	14	148	0.1 ~ 0.3 0.4 ~ 0.6	V-2 V-1
	G-3130	射出玻璃纖維 30 %	1.43	半透明	74,000	16	149	0.02 ~ 0.2 0.3 ~ 0.5	V-2 V-1
易成型級 PANLITE-G MOLD RELEASE GRADE	G-3110R	射出、易成型含玻璃纖維 10 %	1.27	不透明	36,000	9	145	0.2 ~ 0.4 0.4 ~ 0.5	V-2 V-0
	G-3130R	射出、易成型含玻璃纖維 30 %	1.43	不透明	74,000	12	150	0.02 ~ 0.2 0.3 ~ 0.5	V-2 V-1
外觀良好級 PANLITE-G GOOD APPEARANCE G- RADE	G-3110H	射出、低屈曲含玻璃纖維 10 %	1.27	半透明	34,000	5	140	0.3 ~ 0.5 0.4 ~ 0.5	V-2 V-0
	G-3115H	射出、低屈曲含玻璃纖維 15 %	1.30	半透明	40,000	6		0.2 ~ 0.4 0.4 ~ 0.6	V-2 V-1
	G-3120H	射出、低屈曲含玻璃纖維 20 %	1.34	半透明	47,000	6		0.2 ~ 0.4 0.4 ~ 0.5	V-2 V-1
	G-3124H	射出、低屈曲含玻璃纖維 24 %		半透明	52,000	7		0.1 ~ 0.3 0.4 ~ 0.5	V-2 V-1
	G-3130H	射出、低屈曲含玻璃纖維 30 %	1.43	半透明	65,000	9	142	0.1 ~ 0.3 0.3 ~ 0.5	V-2 V-1
低屈曲級 PANLITE-G LOW ANISOTROPIC G- RADE	G-3110M	射出超低屈曲、外觀良好 含玻璃纖維 10 %	1.27	半透明	26,000	8	133	0.5 ~ 0.7	V-2 V-0
	G-3115M	射出超低屈曲、外觀良好含玻璃纖維 15 %	1.30	半透明	28,500	5	140	0.4 ~ 0.6	V-2
	G-3120M	射出超低屈曲、外觀良好含玻璃纖維 20 %	1.34	半透明	31,000	4	141	0.4 ~ 0.5	V-2
	G-3130M	射出超低屈曲、外觀良好 含玻璃纖維 30 %	1.43	半透明	40,000	2	135	0.3 ~ 0.5	V-2 V-1
玻璃纖維強化難燃級 FLAME RETARD GRADE	GN-3110	射出防火含玻璃纖維 10 %	1.26	半透明	35,000	7	146	0.3 ~ 0.5 0.4 ~ 0.6	V-0
	GN-3120	射出防火含玻璃纖維 20 %		半透明					V-0
	GN-3130	射出防火含玻璃纖維 30 %	1.44	半透明	75,000	12	149	0.02 ~ 0.2 0.3 ~ 0.5	V-0
FRICITION & ABRASION RESISTANT 耐擦、耐蝕級	GS-3130	射出、耐擦、耐蝕含玻璃纖維 30 %	1.51	半透明	77,000	14	150	0.02 ~ 0.2 0.3 ~ 0.5	V-1 V-0
	LS-1250	射出耐擦、耐蝕	1.23	半透明	21,500	12	136	0.5 ~ 0.7	V-2 V-0

◎ 以上表所列數值 僅供參考用



QMFZ2 Component - Plastics

Sunday, March 15, 1998

E50075

**TEIJIN CHEMICALS LTD**

HIBIYA DAIBIRU BLDG 2-2 UCHISAIWAI-CHO 1-CHOME CHIYODA-KU TOKYO 100-0011 JAPAN

Material Designation: **LN-1250G#(f1)\***

Product Description: Polycarbonate (PC), designated "Panlife" furnished as pellets, powder.

Color	Min. Thick (mm)	Flame Class	HWI	HAI	RTIElec	RTIImp	RTI Str	IEC GWIT	IEC GWFI
ALL	1.0	V-0	1	2	125	105	115	-	-
	1.5	V-0	3	0	125	115	125	-	-
	3.0	V-0	3	0	125	115	125	-	-
	6.0	V-0	2	0	125	115	125	-	-

**CTI: 3**

**HVTR: 3**

**D495: 6**

**IEC BP: -**

# Material designation may be suffixed with any one or two letters.

(f1) Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

\* All colors except clear.

Report Date: 05/11/1989

Underwriters Laboratories Inc®

699748006

UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULL.

興

銅管材証

宜兴繁盛铜业有限公司

YiXing Fan Sheng COPPER Industry CO., Ltd.

No. 000

发票编号

许可证 XK7-201-0024 产品质量证明书

质保书号 (99)

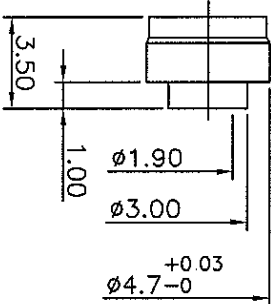
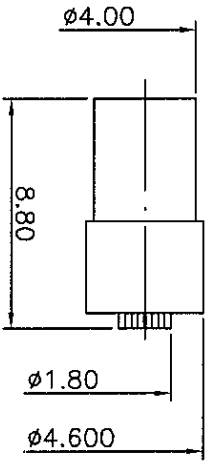
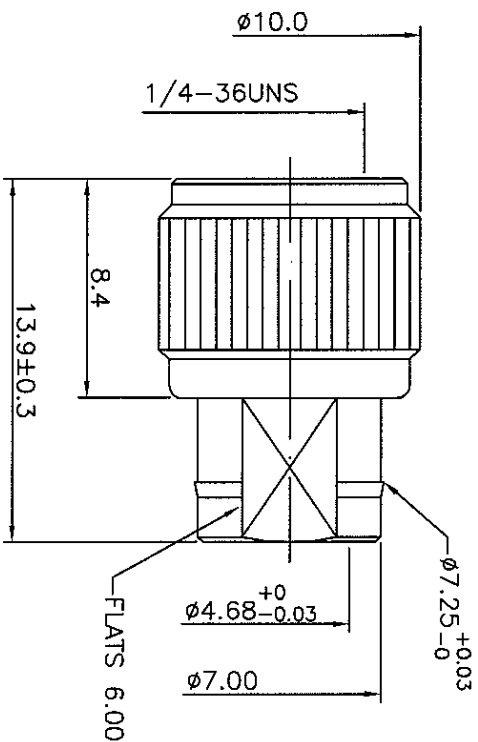


牌号名称	规格	状态	买	发	数								
H65 铜管	25x1.5 m/m	Y2	件		200 公斤								
化学成份	铜Cu	杂质	铁Fe	铅Pb	硫S	磷P	锡Sn	砷As	锑Sb	镍Ni	铋Bi	锌Zn	杂质总和
	64% ~ 68%	≤ 0.1%	0.1%	0.02%	%	%	%	0.07%	0.07%	%	%	0.07%	不大于 0.3% 0.1%
机械性能	抗拉强度 (不小于)	延伸率 (不小于)	直径公差	壁厚公差	执行标准:								
	200 kg/mm <sup>2</sup>	20~35%	-0.15 m/m	±0.15 m/m	GB/T 1527-97								

注: (1)如对本产品有异议者, 请于两周内提出, 逾期本厂不予受理。 (2)在提出时可注明质保书编号。

用户单位 广东车管车具有限公司 林检查

ISS	ZONE	REVISION	DESCRIPTION
		1	



NO.	DESCRIPTION	MATERIAL	FINISH	QTY	DRAWN NO.	SCALE	4/1	ISSUE	A-0	FILE PATH:
1	SLEEVE	BRASS	TIN	1	E-0169					
2	CONTACT PIN	PHOS BRONZE	GOLD	1	C-0652					
3	INSULATOR	TEFLON	NONE	1	T-0465					
4	BODY	BRASS	NICKEL	1	B-0798					
5	WASHER	BRASS	NICKEL	1	G-0064					
6	GASKET	SILICONE	BLACK	1	R-0021					
7	SHELL	BRASS	GOLD	1	A-0039					

TOLERANCES  
DIMENSIONS ARE IN MILLIMETER  
UNLESS OTHERWISE SPECIFIED

.X ±0.2  
.XX ±0.1  
.XXX ±0.05  
ANGLES ±5°

TITLE SMA STRAIGHT PLUG  
REVERSE

PART NO. R19--60-17-178U-50Ω

DRAWN NO. R19-0176

SOCAL CORP., LTD.  
(Solution Of Connector & Antenna)

APPROVED DATE

CHECKED DATE

DRAWN DATE



# 矽原精密電子股份有限公司

SOCAA CORP.,LTD. (Solution Of Connector & Antenna Corp Ltd.)

## 樣品確認書

廠商 名稱：慶陞		品名：R19-60-17-178U-50 Ω	圖號：R19-0176	數量：5 PCS
NO	檢驗項目	材質：JT. 3GP. 80N/2. 5G	檢驗時間： 2009 年 04 月 16 日	
尺寸 檢 驗	單位：mm	研發單位量測值 (Max-Min)		品保單位量測值 (Max-Min)
	A	$\phi 10.0 \pm 0.2$	$\phi 10.00 - \phi 10.02$	$\phi 10.00 - \phi 10.01$
	B	$\phi 7.25^{+0.03}_{-0}$	$\phi 7.26 - \phi 7.26$	$\phi 7.26 - \phi 7.27$
	C	$\phi 7.00 \pm 0.1$	$\phi 7.01 - \phi 7.02$	$\phi 6.99 - \phi 7.01$
	D	$\phi 4.68^{+0}_{-0.03}$	$\phi 4.66 - \phi 4.68$	$\phi 4.67 - \phi 4.68$
	E	$8.4 \pm 0.2$	8.31-8.35	8.27-8.34
	F	$13.9 \pm 0.3$	13.81-13.84	13.82-13.83
	G	$\phi 4.00 \pm 0.1$	$\phi 3.99 - \phi 4.01$	$\phi 3.98 - \phi 3.99$
	H	$\phi 4.600 \pm 0.05$	$\phi 4.59 - \phi 4.63$	$\phi 4.60 - \phi 4.62$
	I	$8.80 \pm 0.1$	8.76-8.79	8.74-8.76
	J	$\phi 4.7^{+0.03}_{-0}$	$\phi 4.71 - \phi 4.72$	$\phi 4.71 - \phi 4.73$
K	$3.50 \pm 0.1$	3.47-3.50	3.47-3.51	
外 觀	成型	OK		OK
	電鍍	OK		OK
	主體	OK		OK
特 性	公母配合	OK		OK
	四腳測試	N/A		N/A
	推力測試	N/A		N/A
	扭力測試	OK		OK
	短通路測試	N/A		N/A
	外殼轉動	OK		OK
重要記事／處理對策：			檢測證明附帶	綜合判定
			<input type="checkbox"/>	<input checked="" type="checkbox"/> 合格
			<input type="checkbox"/>	<input type="checkbox"/> 不合格
			<input type="checkbox"/>	

品保：MANDY

研發：CHAD

F-QP-FD-013-01A

# TESTING FOR SALT WATER MIST

TESTING DTAE: 04/14/09”		TESTING TIME : 4 8 HOUR	
COMPANY:SOCAA CORP.,LTD.		TEST MATERIAL : BRASS	PLATED:NICKEL
COMMODITY:R19-60-17-178U-50Ω		CHARACTER :	
TESTING CONDITION:		AIR COMPRESS: FIRST COMPRESSION 2. SLIGHT COMPRESSION 1.	
SATURATION TEMPRATURE: 47 °C		TESTING TEMPERATURE: 35 °C	
CONSEQUENCE	<p style="text-align: center;">ACCORDING TO C.N.S GRADE , DETERMINING 9.8 GRADE AND ITS CORRODED SURFACE IS UNDER 0.02 PERCENT .</p>		
REMARKS			MAKER
			CHAD

# SPECIFICATION FOR APPROVAL

DOCUMENT: A30178B003

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STYLE : RG-178B/U

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SIZE: 7/0.102 SCCS

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RECOGNIZED: UL 1979

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

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

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

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

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



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

STYLE	105°C 30V UL1979	DOCUMENT NO : A30178B003	
SIZE	RG-178B/U	ESTABLISHED DATE: 2003/09/22	
STANDARD : MIL-C-17			
Conductor	Size	AWG	30
	Material	----	Silver-Coated Copper Clad Steel
	Conductors No.	----	7
	Conductors Size	mm	0.102
	O.D.	mm	0.30
Insulation	Average Thickness	mm	0.28
	Diameter	mm	0.86 ±0.03
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Silver-Coated Copper
	Construction	mm	16 / 3 / 0.10
	Coverage	%	95
Jacket	Average Thickness	mm	0.25
	Diameter	mm	1.80 ±0.05
	Material	----	FEP
	Color	----	Brown
Marking			
Drawing			



# WONDERFUL HI-TECH CO., LTD. SPECIFICATION

Electrical & Physical Properties						
Item		RG-178B/U				
Rating Temperature		-55°C ~ +200°C				
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 <sup>2</sup> )			
		Elongation	200% MIN.			
	Aged	Tensile Strength	<b>UNAGED MIN 75%(168HRS×232°C)</b>			
		Elongation	<b>UNAGED MIN 75%(168HRS×232°C)</b>			
Jacket	Unaged	Tensile Strength	2500 PSI MIN.( 1.76 Kg / m m <sup>2</sup> )			
		Elongation	200% MIN.			
	Aged	Tensile Strength	<b>UNAGED MIN.75%(168HRS×232°C)</b>			
		Elongation	<b>UNAGED MIN.75%(168HRS×232°C)</b>			
Nom. Impedance		50 Ohms				
Nom. Capacitance		95.8 pF/m				
Nom. Vel. of Prop.		69.5%				
VSWR (0 – 6 GHZ)		UNDER 1.3				
THERMAL SHOCK		LESS 1mm at 232°C/1HR				
BEND RADIUS		9mm Minimum				
Attenuation (dB/100m)	100MHz	1GHz	1.8GHz	2.4GHz	5.2GHz	6GHz
	46	155	295	340	505	550