



產品規格書

Specification for Approval

客戶 (Customer): Birdhome

Customer Part No.: ALC120-051022-00

Product Description: 2.4GHz PCB Antenna

Lynwave Part No.: ALC120-051022-00

客戶簽核 (Customer Approval)

客戶承認 Customer Approval	核准 (Authorized)	檢驗 (Approved)
	日期： 年 月 日	

內部簽核 (Signature) 日期： 2022 年 04 月 14 日

Approved by	Checked by	Tested by
<i>YungMing</i>	<i>Lisa Wei</i>	<i>Zero Chen</i>

綠億科技股份有限公司

Lynwave Technology Ltd.

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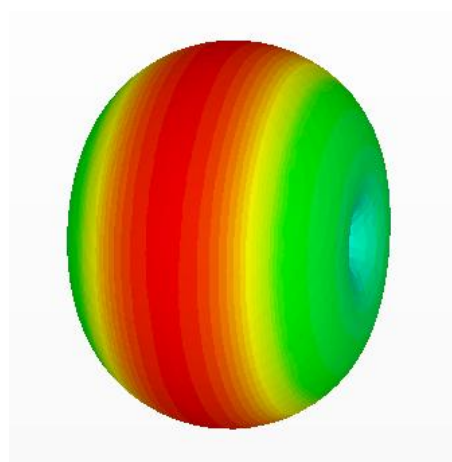
Features

- Single band IEEE 802.11 b/g/n standard
- Case mounting
- High efficiency
- Quick integration



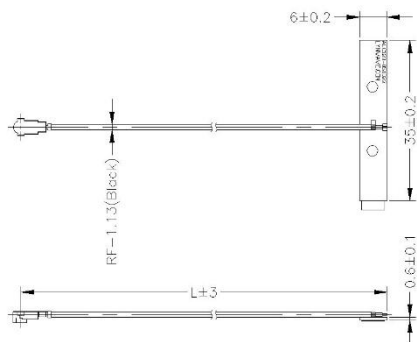
Specification

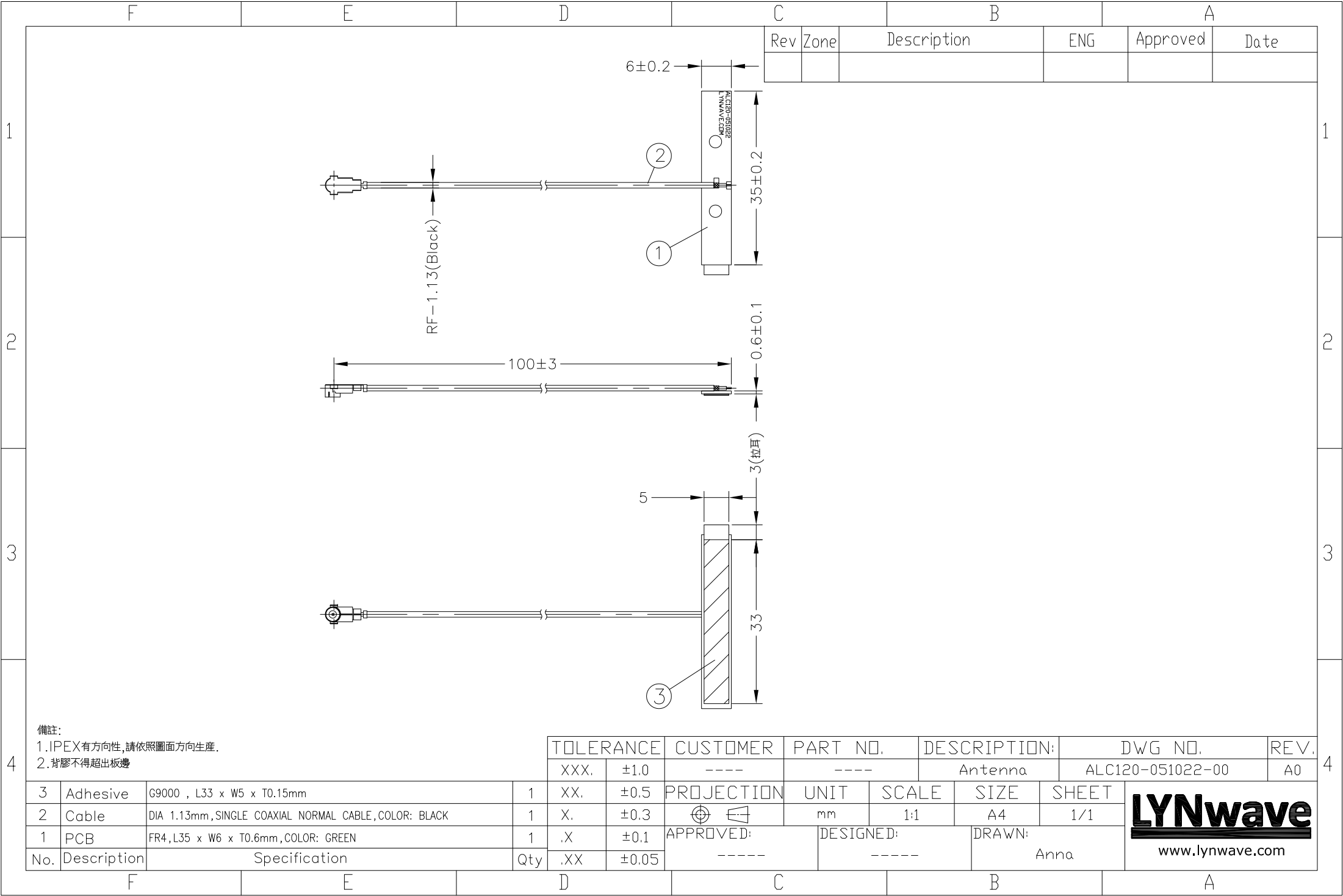
Frequency (MHz)	2400 ~ 2500
Peak Gain (dBi)	2.0
VSWR	2.0 : 1
Power (Watts)	1
Impedance (Ohms)	50
Dimension (mm)	35 x 6 x 0.6
Weight (g)	0.68
Connector	IPEX
Cable length (mm)	100
Operating Temp (°C)	-40°C ~ +85°C

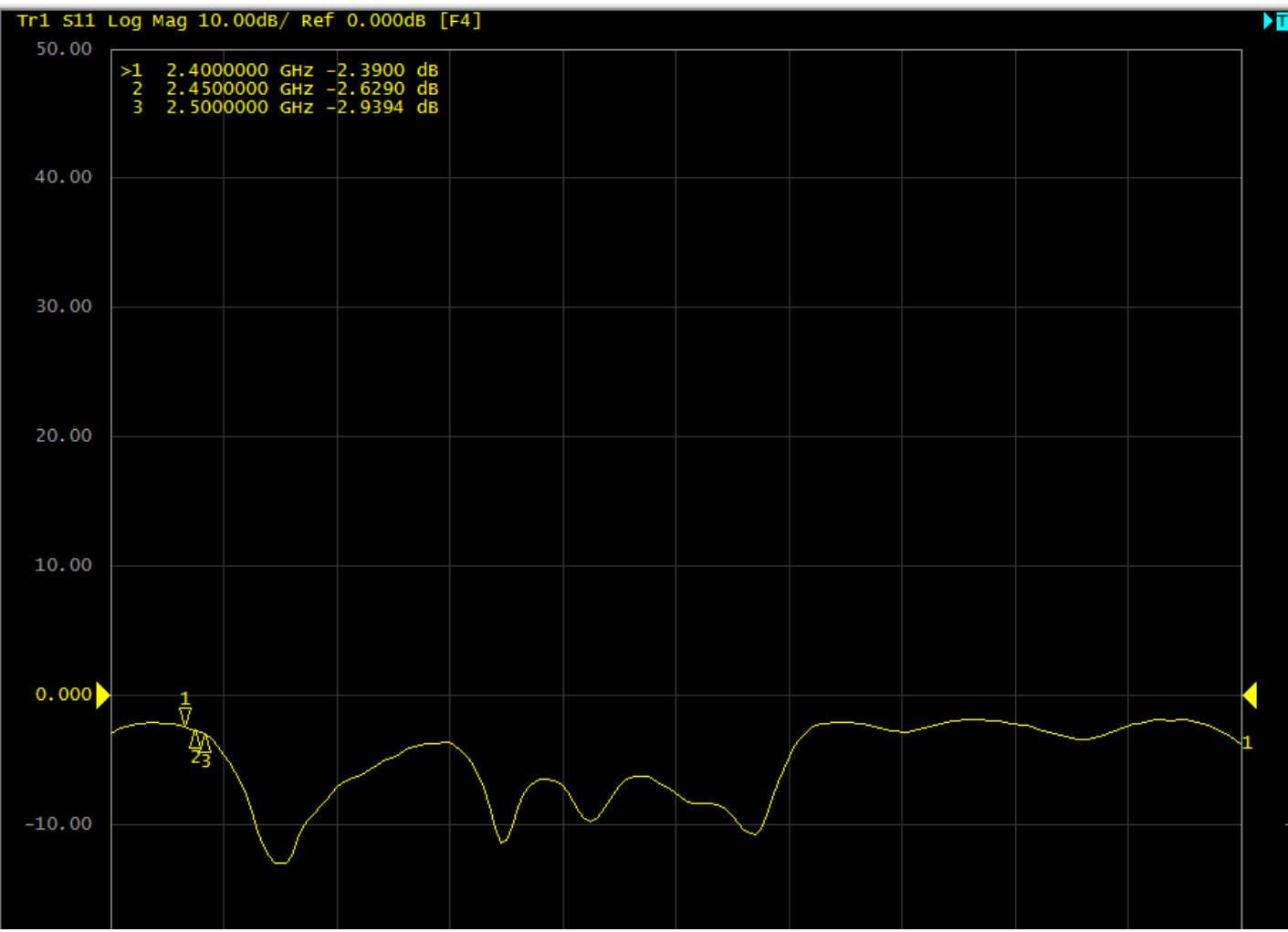


2.4 GHz

Mechanical Dimensions



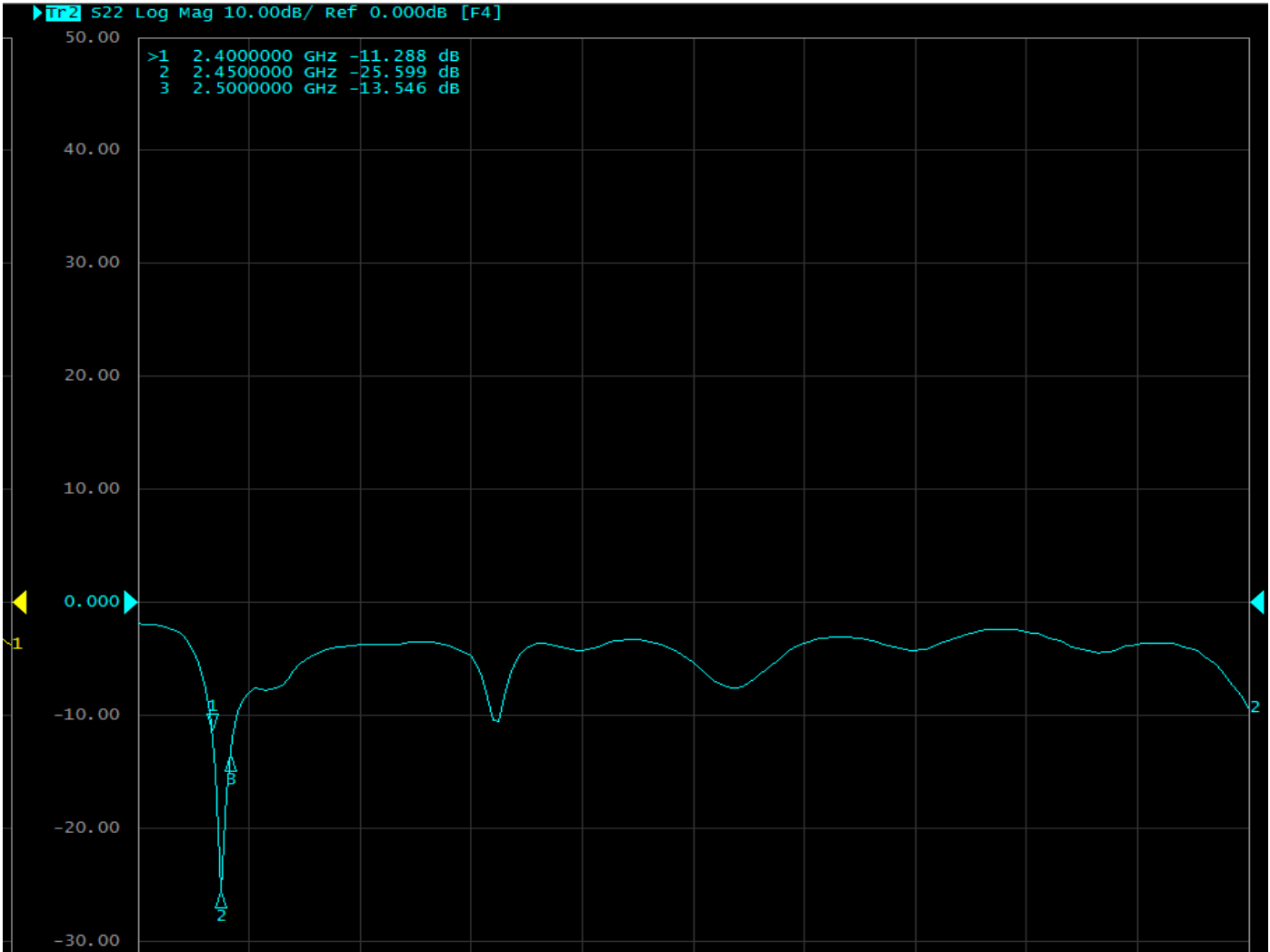




Antenna tested in free space



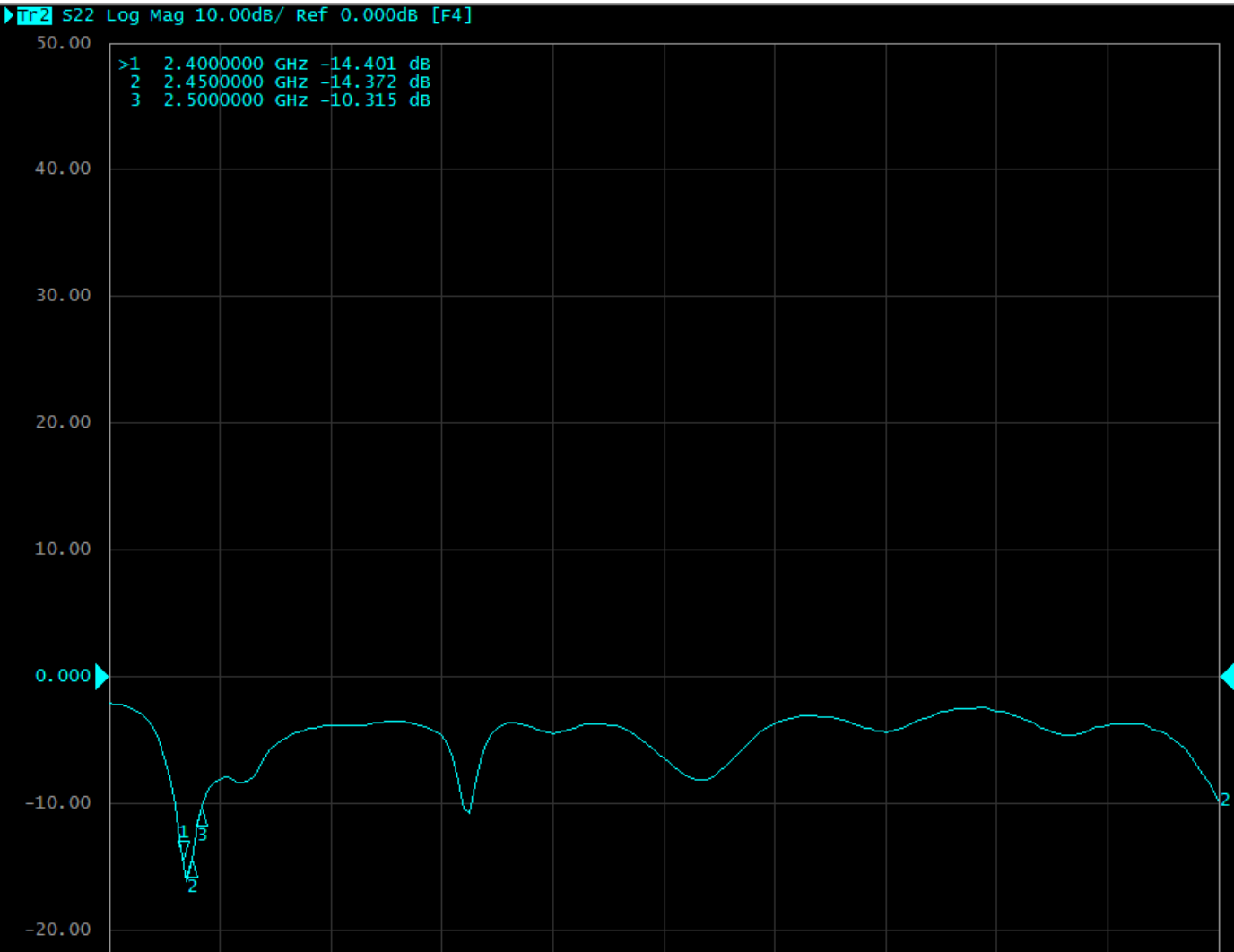
Out of band
S11 not below -10
Can not funtion well



Antenna tested with ABS
Antenna is 5mm away from metal



In band
S11 below -10
Can function well



Antenna tested with ABS
Antenna is 10mm away from metal



In band
S11 below -10
Can function well



A3 级覆铜箔板质量技术指标

试验项目	试样处理	标准值	典型值
1.抗剥强度 磅/英寸，最小值			
A 1/2 盎司铜箔			
接收状态	A	≥6.0	6.0-8.0
热应力	A	≥6.0	6.0-8.0
提高温度下	125℃	≥4.0	7.0
暴露于工艺溶液后	125℃	≥4.5	7.0
B 1 盎司铜箔			
接收状态	A	≥8.0	8.0-10.0
热应力	A	≥8.0	8.0-10.0
提高温度下	125℃	≥6.0	9.0
暴露于工艺溶液后	125℃	≥7.0	9.0
2.体积电阻，最小值，MΩ·CM 在提高温度下	E-24/125	≥10 ³	10 ⁶
3.表面电阻，最小值，MΩ 在提高温度下	E-24/125	≥10 ³	10 ⁶
4.吸水性,最大值(%)	E-1/105+des	≤0.80	0.18-0.35
5.击穿电压,最小值(KV),步进(厚度≥0.50 mm)	D-48/50 D-0.5/23	≥35	38
6.抗弯强度，最小值(N/mm ²) (厚度≥0.50 mm)			
经向	A	≥415	495
纬向	A	≥345	405
7.抗电弧性,最小值，秒	D-48/50 D-0.5/23	≥60	75
8.阻燃性	A	UL94V0	UL94V0
9.可焊性	A	可焊	可焊
10.介电常数,1MHZ 下	A	≤ 5.4	4.7-4.9
11.损耗角正切,1MHZ 下	A	≤0.045	0.020-0.035
12.弯曲和翘曲,最大(%)			
双面（厚度大于 0.78mm；尺寸 300mm×300mm）	A	≤1.0	0.20-0.50
单面（厚度大于 0.78mm；尺寸 300mm×300mm）	A	≤1.5	0.30-0.70
双面（厚度 0.5~0.78 mm；尺寸 300mm×300mm）	A	≤1.5	0.30-0.50
单面（厚度 0.5~0.78 mm；尺寸 300mm×300mm）	A	≤2.0	0.35-0.70
13.热应力,288℃,漂锡 10 秒 未蚀刻试样	A	NO DEFECT	55-80 Sec
14.玻璃化转变温度,TG(DSC, °C)	A	≥125	135
15.适用范围：家电行业、电脑周边产品、普通电子产品。不适用于计量用仪表。			
16.适用线路：最小孔径>0.3mm，最小孔间距>0.8mm。			

备注：1、处理方法中字母及数值的含义

A-板材交货阶段

D-恒温水浴 E-高温烘培 数 1/数 2：1-时间(小时) 2-温度(℃) des-干燥 10 分钟以上或干燥状态下冷却至室温。

2、上表所定翘曲度标准仅适用于覆铜箔板交货验收。若以成品 PCB 板作为检验样品，一般要求 PCB 两面布线基本均匀，最大尺寸不大于 12"，且在 140℃热风循环烤箱中，保持承载板水平，烘烤 2 小时，自然冷却至室温的试验测试值为准。

**QMTS2.E330731****Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component**

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Click on a product designation for complete information.

[Page Bottom](#)

Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

See General Information for Polymeric Materials - Filament-wound Tubing, Industrial Laminates, Vulcanized Fiber, and Materials for Use in Fabricating Recognized Printed Wiring Boards - Component

GOLDENMAX INTERNATIONAL TECHNOLOGY (ZHUHAI) LTD

E330731

8 QINSHI RD QINSHI INDUSTRIAL PARK

SANZAO TOWN

JINWAN DIST

ZHUHAI, GUANGDONG 519040 CHINA

Industrial laminates:

			Build up		R.T.I.				H		
Mtl Dsg	ANSI Type	Color	Min Thk (mm)	Flame Class	Elec (°C)	Mech (°C)	H W I	H A I	V T R	C T I	Meets 746E DSR
Industrial laminates, furnished as sheets, rods or tubes.											
GDM-C3, ILM-C3											
	CEM-3	NC (WT)	0.63	V-0	130	140	0	2	4	-	Yes
			1.6	V-0	130	140	0	2	4	3	Yes
GDM-R1, ILM-R1											
	FR-4	NC,YL	0.38	V-0	130	130	0	3	4	-	Yes
			0.63	V-0	130	140	0	3	4	-	Yes
			1.40	V-0	130	140	0	2	4	3	Yes
Industrial laminates.											
GF432	FR-4	NC (YL)	0.38	V-0	130	130	0	0	-	-	Yes
			0.63	V-0	130	140	0	0	-	-	Yes
			1.40	V-0	130	140	0	0	-	3	Yes

Ultrathin build ups:

Build Up					Laminate			Prepreg		
Mtl Dsg	ANSI Type	Min Thk (mm)	TI Elec	TI Mech	Mtl Dsg	Thk (mic)	TI Elec	Mtl Dsg	Thk (mic)	TI Elec
Ultrathin industrial laminates and bonding layers, furnished in sheet form, for use in multilayer printed wiring boards where the thickness is built up to the minimum specified.										
GDM-U1, ILM-U1	FR-4	0.38	130	130	GDM-U1, ILM-U1	100	120	GDM-P1, ILM-P1	100	120

		0.63	130	140	GDM-U1, ILM-U1	100	120	GDM-P1, ILM-P1	100	120
GF432	FR-4	0.38	130	130	GF432	155	120	GF432-PP	75	90
		0.63	130	140	GF432	155	120	GF432-PP	75	90

Metal clad industrial laminates:

				Bld up	Clad Cond Thk			Max		Max	Solder Lts	
Metal Clad Dsg	Lam- inate Dsg	Pre- preg Dsg	ANSI Type	Min Thk (mm)	Min Ext (mic)	Max Ext (mic)	Max Int (mic)	Area Dia (mm)	Flame Class	Oper Temp (°C)	Temp (°C)	Time (sec)
Metal clad multilayer package (mass laminate) with internal circuitry and solid copper on outside surfaces, furnished as sheets.												
GDM-ML1, ILM-ML1												
	GDM- U1, ILM- U1	GDM- P1, ILM-P1	FR-4	0.38	17	102	68	50.8	V-0	130	288	20
Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides, furnished as sheets.												
GDM-U1, ILM-U1												
	GDM- U1, ILM- U1	GDM- P1- ILM-P1	FR-4	0.38	17	102	68	50.8	V-0	130	288	20
Metal clad industrial laminates for use in multilayer printed wiring boards with copper on one or both sides.												
GF432	GF432	GF432- PP	FR-4	0.38	17	102	68	50.8	V-0	130	288	20
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets.												
GDM-C3, ILM-C3												
	GDM- C3, ILM- C3	-	CEM- 3	0.63	17	102	-	12.7	V-0	130	288	10
GDM-R1, ILM-R1												
	GDM- R1, ILM- R1	-	FR-4	0.38	17	102	-	50.8	V-0	130	288	20
Metal clad industrial laminates for use in single layer printed wiring boards with copper on one or both sides.												
GF432	GF432	-	FR-4	0.38	17	102	-	50.8	V-0	130	288	20

GDM , ILM

Marking: Company name or trademark

and material designation on container or wrapper.

Last Updated on 2013-10-31

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型号 Type	RF-1.13/50	料号 P/N	SY113/50-001(Black)	版本: V2
结构图 Structure drawing				
结构特性 Structure characteristics				
结构 Structure	项目 Item		标准值 Standard value	
①内导体 Inner conductor	材料 Material		镀银铜线 Silverplated copper wire	
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)		7/0.08	
	(绞合)标称外径(mm) (Intertwist)NOM.O.D.(mm)		0.24±0.02	
②绝缘层 Insulation	材料 Material		聚全氟乙丙烯 FEP	
	颜色 Color		透明 Clarity	
	标称外径(mm) NOM.O.D.(mm)		0.7±0.03	
③外导体 Outer conductor	材料 Material		镀锡铜线 Tinned copper wire	
	组成:总根数/单根外径(mm) Makeup:total / O.D. of every wire(mm)		4/0.05	
	标称外径(mm) NOM.O.D.(mm)		0.92±0.05	
	覆盖率(%) Coverage ratio(%)		90±5	
④护套层 Jacket	材料 Material		聚全氟乙丙烯 FEP	
	颜色 Color		黑 Black	
	标称外径(mm) NOM.O.D.(mm)		1.13±0.05	
电性能特性 Electrical characteristics				
项目 Item	标准值 Standard value	项目 Item	频率 Frequency	标准值 Standard value 单位 Unit:dB/m
电容(pF/m) Capacitance(pF/m)	98	衰减 Attenuation	1GHz	≤2.2
速率(%) Velocity(%)	70		2GHz	≤3.1
阻抗(Ω) @1ns Impedance(Ω)	50±2		3GHz	≤3.8
驻波比 Standing wave ratio	≤1.3@0~6GHz		4GHz	≤4.4
	≤1.4@6~8GHz		5GHz	≤4.9
	≤1.5@8~10GHz		6GHz	≤5.4
最大工作电压(V) Max.operating voltage(V)	1000		7GHz	≤6.1
			8GHz	≤6.7
			9GHz	≤7.2
			10GHz	≤7.7
可靠性 Dependability				
项目 Item	单位 Unit	标准值 Standard value		
最小弯曲半径(一次/重复) Min.bending radius (static / repeated)	mm	4 / —		
工作温度范围 Operating temperature	℃	-55~+125		
包装 Packing				
项目 Item	单位 Unit	标准值 Standard value		
包装方式 Packing mode	/	纸盘 Papery plate		
每盘长度 The length of each plate	m	1000		
每盘接头数/每段最短长度 Each connector plate number/The shortest length of each root	No. / m	≤5 / ≥10		
使用提示 Use tips				
存储环境 Storage environment	温度: 30℃以下; 湿度: 20%~65% Temperature: Under 30℃; Humidity: 20%~65%			
最佳保存周期 The best save cycle	2个月; 2个月以上作业性下降, 如上锡效果变差,但电性能不受影响。夏季高温高湿环境开剥后需尽快流转。 two months; Soldering performance may decline after two months, the tinned effect may become worse, but the electrical characteristics are not affected.The stripped wire must be used as soon as possible in the summer high temperature and high humidity environment.			
加工温度 Processing temperature	260℃的极限情况下, 可短时间承受; 300℃以上分子通常带有的等端基会分解; 400℃以上发生显著的热分解。 Under the condition of 260℃ limit, can bear within short time; Molecular with terminal groups will decompose over 300℃ and significantly decompose over 400℃.			
铁氟龙收缩 Teflon Shrink	固有材料特性。绝缘: 0.2mm以下; 护套: 0.3mm以下。 The inherent material characteristics. Insulation: <0.2mm ; Jacket: <0.3mm.			
护套窜动 Jacket traverse	加工长度(护套残留长度)低于5cm易发生。 The Jacket traverse may happen easily, when the processing length is less than 5cm.			
其他 Other				
特殊加工工艺, 请与供方协商后使用 Special processing technology,please consult with supplier before using.				

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UNDERWRITERS LABORATORIES

APPLIANCE WIRING MATERIAL

Subj.758 Section 1 Page 1354

Issued:1964-02-19

Revised:2009-04-30

Style 1354 Coaxial Cable.

Rating	60, 80 deg C, 30 Vac, Horizontal flame.
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Conductor	44 AWG min., material not specified.
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Insulation	2 mils minimum at any point, 125 mils maximum. The insulation may be: Extruded solid or cellular PE, FRPE, PP, PFA, FEP, ECTFE, PTFE, ETFE, or combination thereof with or without irradiation; or tape wrapped solid or cellular PTFE, PFA, or FEP. Applied as a spiral wrapped thread (5 mils minimum, 40 mils maximum) and enclosed in a tube of insulation.
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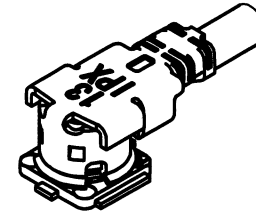
Assembly	Insulated conductor with optional inner covering, optional inner shield, optional middle covering, required outer shield and required outer covering.
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Shield	Optional. Outer Shield required.
--------	----------------------------------

Covering	Optional Inner Covering - Extruded PVC, PFA, Polyamide, Polyester, PVDF, FEP, PTFE, ECTFE, ETFE, PE, XLPE, XLFRPE or FRPE; lacquered braids; heat sealed PTFE, PFA or FEP tape; Polyester or Polyester-Polyethylene film. Thicknesses not specified. Optional Middle Covering - Extruded PVC, PFA, PP, Polyamide, Polyester, PVDF, FEP, PTFE, ECTFE, ETFE, PE, XLPE, XLFRPE or FRPE; lacquered braids; heat sealed PTFE, PFA or FEP tape; Polyester or Polyester-Polyethylene film. Thicknesses not specified. Required Outer Covering - Extruded Irradiated PE, Irradiated PVC, Polyurethane, PVC, PFA, PP, Polyamide, Polyester, PVDF, FEP, PTFE, ECTFE, ETFE, PE, XLPE, XLFRPE or FRPE; lacquered braids; heat sealed PTFE, PVC, PFA or FEP tape; Polyester or Polyester-Polyethylene film. Thicknesses not specified.
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Standard	Appliance Wiring Material UL 758.
Marking	General.
Use	Internal wiring of Class 2 circuits of electronic equipment or as insulated single in jacketed multiconductor cables.

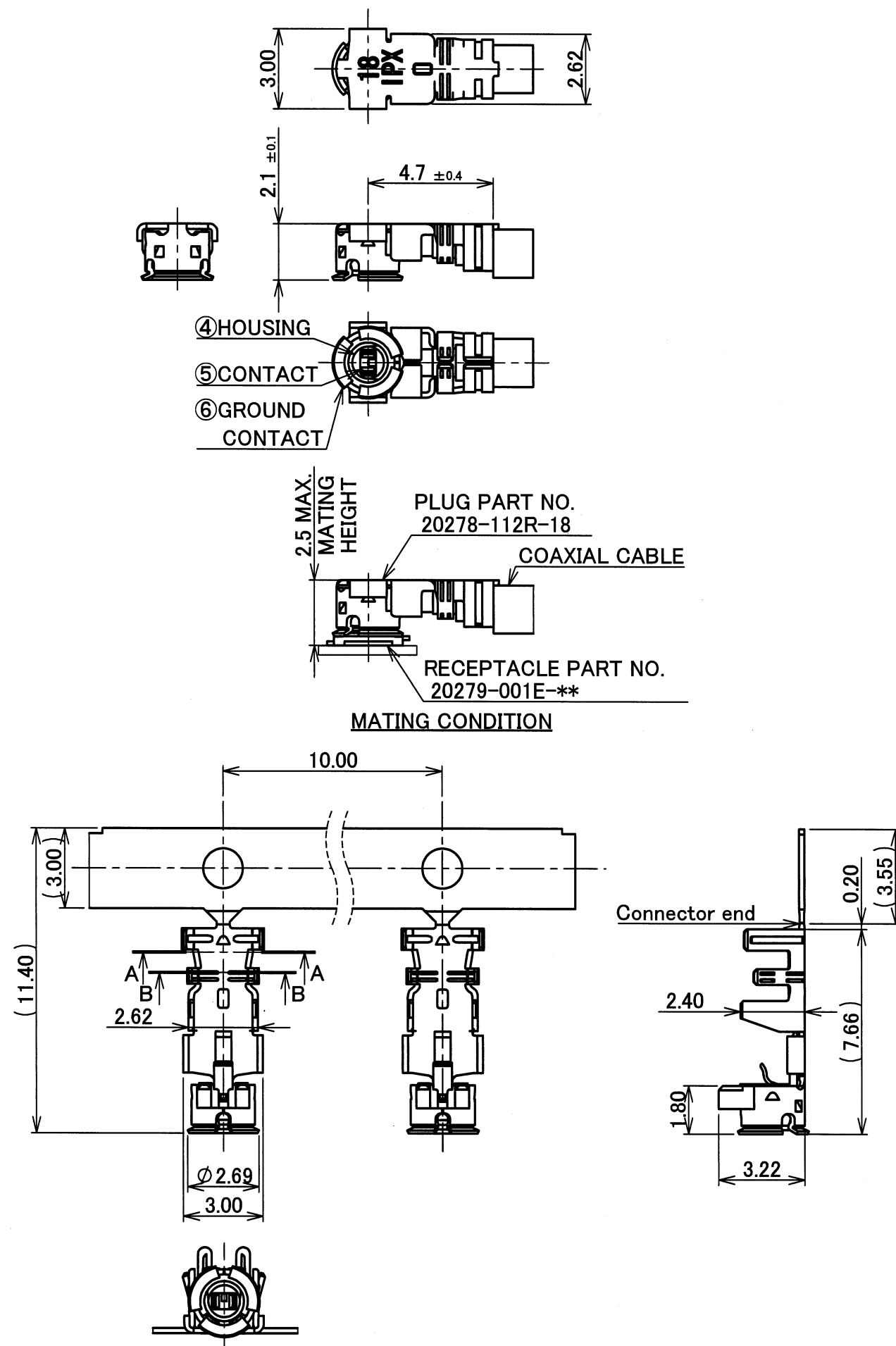
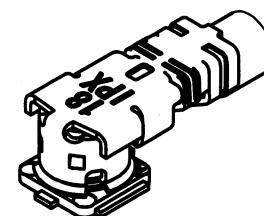
PART No.	APPLICABLE CABLE
20278-112R-08	AWG#36 (0.81 O.D.)
20278-112R-13	AWG#32 (1.13 O.D.)
20278-112R-32	AWG#32 (1.32 O.D.)



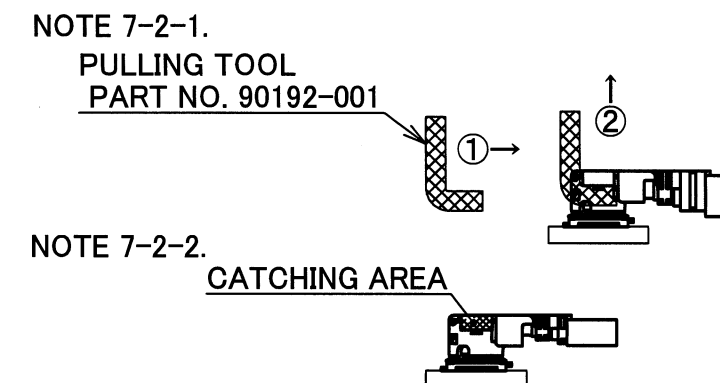
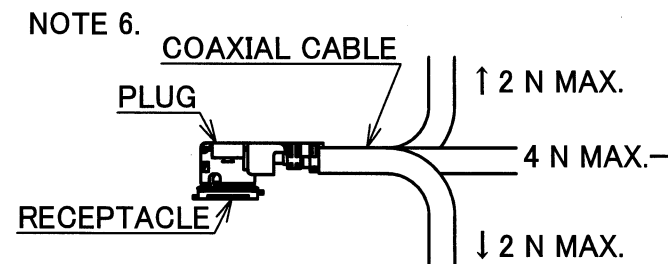
3	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.05 μ m MIN.
2	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.10 μ m MIN.
1	HOUSING	PBT	UL94V-0, 20278-112R-08: WHITE 20278-112R-13, -32: BLACK
NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS

27	Z191013	Haji	2019/08/01	Y.S	ANGLE	±2°	6 OVER 30 MAX.	±0.3		SERIES No. R15	CUSTOMER COPY		
26	Z181428	M.N	2018/11/01	Ken	6 MAX.	±0.2	30 OVER 120 MAX.	±0.5					
25	Z180342	M.N	2018/03/27	Ken	GENERAL TOLERANCE.				TITLE MHF® I PLUG (Au TYPE)	SCALE			
24	Z171151	M.A	2017/10/05	T.M	DWG.	DATE				5:1			
23	Z150949	K.T	2015/08/31	Tom	K.Oobayashi	2001/07/13				UNIT			
22	Z150615	Tad	2015/06/04	Tom	CHK.	DATE				mm			
REV.	ECN	BY	DATE	APP.	APP.	DATE				SIZE			
REVISION RECORD					K.Katabuchi	2001/07/13			DWG. No.	20278	A3	SHEET 1/6	REV. 27

PART No.	APPLICABLE CABLE
20278-112R-18	AWG#30 (1.80 O.D.)



- NOTES
5. APPLICABLE CONNECTOR:
20279-001E-**, 20314-001E-01, 20431-001E-01, 20441-001E-01
 6. PERMISSIBLE LOAD OF CABLE AT MATING
 7. SUGGESTIONS FOR MATING & UNMATING OPERATION.
 - 7-1. 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.
 - 7-2. UNMATING
 - 7-2-1. 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.
 - 7-2-2. 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.
 - 7-3. 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)
 - 7-4. CAUTION ABOUT HEAT SHRINKAGE TUBES
PLEASE BE CAREFUL NOT TO MELT HOUSING WHEN USING HEAT SHRINKAGE TUBES. IT WILL BECOME CAUSE OPEN CIRCUIT.
 8. THIS IS "PB-FREE" CONNECTOR.



NO.	DESCRIPTION	MATERIAL	FINISH , REMARKS
6	GROUND CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.05 μ m MIN.
5	CONTACT	PHOSPHOR BRONZE	ALL OVER Ni 1.00 μ m MIN. CONTACT PART Au 0.10 μ m MIN.
4	HOUSING	PBT	UL94V-0, WHITE

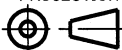
REV.	ECN	BY	DATE	APP.	ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY
					6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R15	
					GENERAL TOLERANCE.				TITLE		
					DWG.				MHF® I		
					CHK.				PLUG (Au TYPE)		
					APP.				DWG. No.		
									20278		
REVISION RECORD									A3		
									SHEET 2/6		
									REV. 27		

DAI-ICHI SEIKO CO., LTD.

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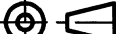
QKE-DFE06-02 REV.11

ITEMS	SPECIFICATION
RECOMMENDED APPLICABLE CONNECTOR PART No.	20279-001E-**
RATING VOLTAGE	60 V AC (R.M.S)
RATING FREQUENCY	DC~6 GHz
OPERATING TEMPERATURE	233~363 K (-40°C~+90°C)
VSWR	1.3 MAX. AT 0.1~3 GHz, 1.5 MAX. AT 3~6 GHz
MAIN CONTACT RESISTANCE	INITIAL: 20 mohm MAX. / AFTER TEST: 25 mohm MAX.
GROUND CONTACT RESISTANCE	INITIAL: 10 mohm MAX. / AFTER TEST: 15 mohm MAX.
INSULATION RESISTANCE	INITIAL: 500 Mohm MIN. / AFTER TEST: 100 Mohm MIN.
DIELECTRIC WITHSTANDING VOLTAGE	200 V AC, 1 MINUTE
DURABILITY	30 CYCLES
UNMATING FORCE (INITIAL / AFTER TEST)	5 N MIN. / 3 N MIN.
CRIMP STRENGTH	20278-112R-08, 20278-112R-13, 20278-112R-32: 10 N MIN. 20278-112R-18: 15 N MIN.
PRODUCT SPECIFICATION	PRS-1676
TEST REPORT	TR-12044
PACKING STANDARD	300-233
INSTRUCTION MANUAL	HIM-10002
APPEARANCE CRITERIA No.	QLS-A***

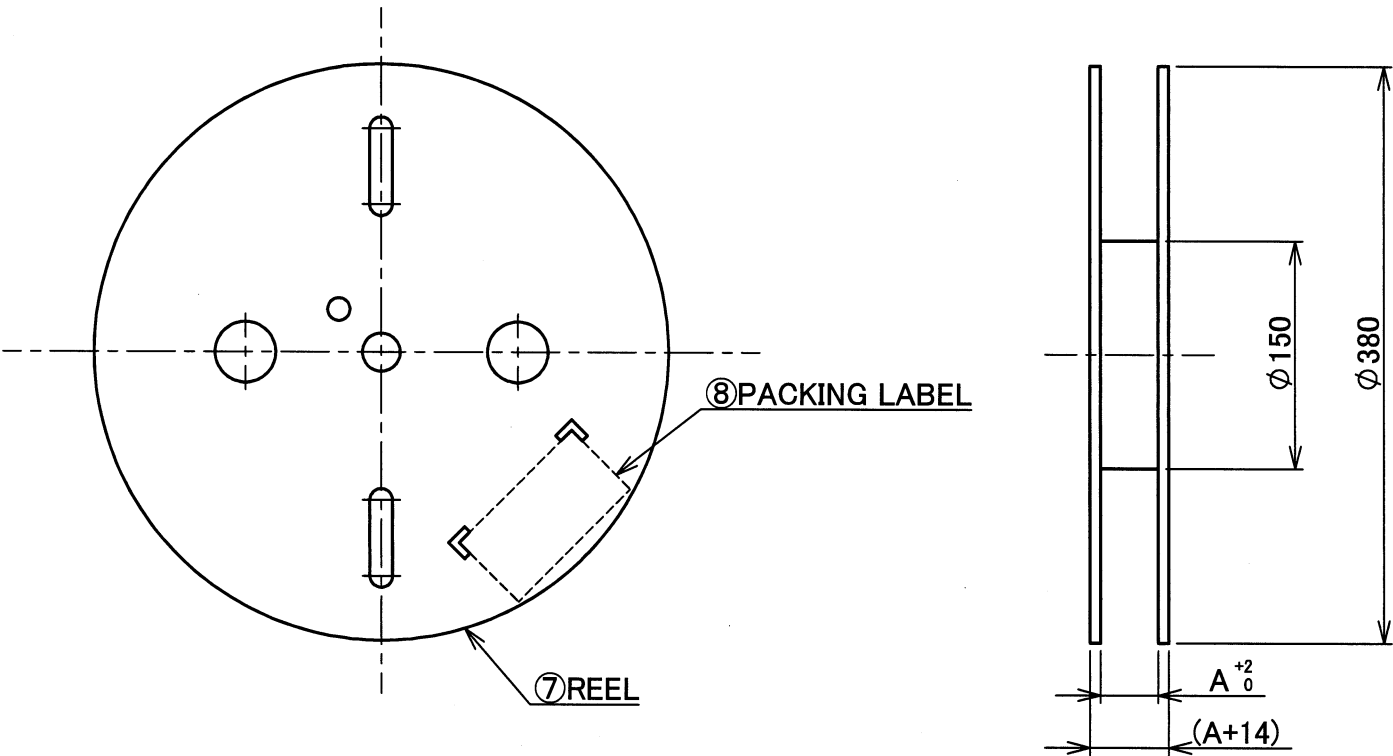
ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION	SERIES No.	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R15			
GENERAL TOLERANCE.				TITLE MHF® I PLUG (Au TYPE)		SCALE		
DWG.	DATE					5:1		
CHK.	DATE					UNIT mm		
APP.	DATE					SIZE A3		
				DWG. No.	20278	SHEET	3/6	REV. 27

PART NO.		20278-112R-08	20278-112R-13	20278-112R-32	20278-112R-18	CABLE CUT LENGTH	
APPLICABLE CABLE NOMINAL DIMENSION 							
BRAIDED SHIELD OF OUTER CONDUCTOR		SINGLE	SINGLE	DOUBLE	SINGLE	CRIMP HEIGHT BLADE MICROMETER 	
PART NO. OF HAND TOOL PART NO. OF SEMI AUTO TERMINATION MACHINE		90187-008C 90213-008C	90187-013C 90213-013C	90187-032C 90213-032C	90233-018 90232-018		
SECT. B-B							
SECT. A-A							
CRIMP HEIGHT	CH-1	1.34~1.40	1.34~1.40	1.34~1.40	1.34~1.40		
	CH-2	0.76~0.84	1.06~1.14	1.20~1.30	1.41~1.49		
	CH-3	0.85~0.97	1.15~1.35	1.26~1.46	1.70~1.80		

NOTE 9. MUST NOT USE SOLDER COATED INNER CONDUCTOR AND OUTER CONDUCTOR.

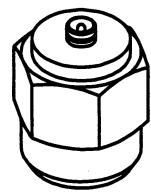
ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION 	SERIES No.	CUSTOMER COPY			
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5		R15				
GENERAL TOLERANCE.				TITLE MHF® I PLUG (Au TYPE)	SCALE				
DWG.	DATE				UNIT				
CHK.	DATE				mm				
APP.	DATE				SIZE				
				DWG. No.	A3				SHEET
				20278					

PART NO.	A	QTY. PER EMBOSS REEL (PIECES / REEL)	QTY. PER PACKING CARTON (REELS / CARTON)
20278-112R-**-	20.0	2,500 / REEL	4 REELS / CARTON = 10,000 PIECES

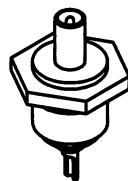


8	PACKING LABEL	-	-
7	REEL	CB	-
NO.	DISCRIPTION	MATERIAL	FINISH , REMARKS

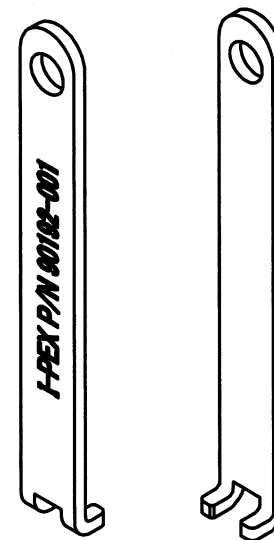
ANGLE	±2°	6 OVER 30 MAX.	±0.3	PROJECTION 	SERIES No. R15	CUSTOMER COPY				
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5							
GENERAL TOLERANCE.				TITLE MHF® I PLUG (Au TYPE)		SCALE				
DWG.	DATE					—				
CHK.	DATE					UNIT				
APP.	DATE					mm				
				DWG. No.		SIZE				
				20278		A3	SHEET	5/6	REV.	27



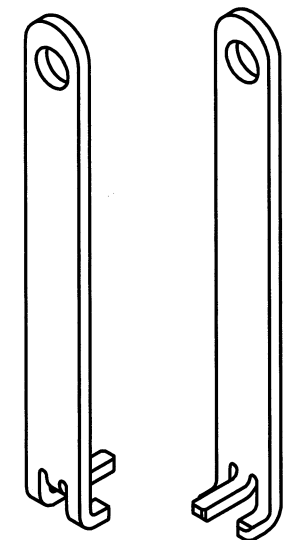
MHF I/II SMA ADAPTOR
PART NO. 90193-001



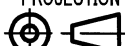
MHF I/II PLUG INSPECTION CONNECTOR
PART NO. 90194-001



FRONT SIDE BACK SIDE
MHF I/II PULLING TOOL
PART NO. 90192-001



FRONT SIDE BACK SIDE
MHF I PUSHING AND PULLING TOOL
PART NO. 90224-001

ANGLE	±2°	6 OVER 30 MAX.	±0.3		SERIES No. R15	CUSTOMER COPY		
6 MAX.	±0.2	30 OVER 120 MAX.	±0.5					
GENERAL TOLERANCE.				TITLE MHF® I PLUG (Au TYPE)		SCALE		
DWG.	DATE					2:1		
CHK.	DATE					UNIT		
						mm		
APP.	DATE			DWG. No. 20278		SIZE	SHEET 6/6 REV. 27	
						A3		

塑膠材料保證書
CERTIFICATE OF COMPLIANCE OF PLASTIC MATERIAL

供應商

VENDER DAI-ICHI SEIKO CO.,LTD.

料號

PART NUMBER 20278-112R-**

品名

PART DESCRIPTION MHF PLUG ASS'Y

數量/訂單號碼

QUANTITY/P.O. NO. _____

出貨日期

SHIPPING DATE _____

原料製造商

MATERIAL SUPPLIER POLYPLASTICS CO LTD

原料品名/規格

MATERIAL DESCRIPTION/SPEC XFR 4840 GF10 (w), 310NF (w)

原料 UL 號碼

MATERIAL UL FILE NUMBER

原料防火等級

MATERIAL FLAMMABILITY CLASS

E213445

UL94, V-0

供應商保證 VENDER GUARANTY

1. 本批產品使用之原料確實依上述規格供應，若有變更冒替，本公司願負賠償之責。
IF THERE IS ANY DEVIATION TO THE LIST ABOVE, WE WILL BE RESPONSIBLE FOR THE COST INCURRED.
2. 本批產品所使用的回收料(次料)不可超過 50% .
THE REPROCESSED MATERIAL USED IN THIS SHIPMENT DOES NOT EXCEED 50

供應商簽章及蓋公司章

VENDER SIGNATURE & COMPANY SEAL



Document number : ULTW-FFUS-0001
Issued : 09-05-02
Revised : 02-03-05
Page : 1 of 1

**UL International, L.L.C.,
Taiwan Branch**



XFR 4840 GF10 (w), 310NF (w) - Plastics - Component

Plastics - Component

File Number: E213445



COMPANY

POLYPLASTICS CO LTD
18-1 KONAN 2-CHOME
MINATO-KU, TOKYO 108-8280 Japan

MODEL INFO

Duranex: XFR 4840 GF10 (w), 310NF (w)
Polybutylene Terephthalate (PBT) , furnished as pellets
--(w) Virgin and regrind up to 50% by weight inclusive, have the same flame characteristics only.

FLAMMABILITY PROPERTIES	NOMINAL VALUE	TEST METHOD
Flammability		ANSI/UL 94
0.75 mm, Color: ALL	V-0	
1.5 mm, Color: ALL	V-0	
3.0 mm, Color: ALL	5VA V-0	

ISO/IEC FLAMMABILITY PROPERTIES	NOMINAL VALUE	TEST METHOD
Flammability		IEC 60695-11-10
0.75 mm, Color: ALL	V-0	
1.5 mm, Color: ALL	V-0	
3.0 mm, Color: ALL	V-0	
Flammability (3.0 mm, Color: ALL)	5VA	IEC 60695-11-20

ELECTRICAL PROPERTIES	NOMINAL VALUE	TEST METHOD
Hot-wire Ignition (HWI)		UL 746A
0.75 mm	1 PLC	
1.5 mm	1 PLC	
3.0 mm	1 PLC	
High Amp Arc Ignition (HAI)		UL 746A
0.75 mm	0 PLC	
1.5 mm	0 PLC	
3.0 mm	0 PLC	
Comparative Tracking Index (CTI)	1 PLC	UL 746
Dielectric Strength	24 kV/mm	ASTM D149
High Voltage Arc Tracking Rate (HVTR)	0 PLC	
Volume Resistivity	1.0E+14 ohms-cm	ASTM D257/IEC 60093
High Voltage, Low Current Arc Resistance	5 PLC	
THERMAL PROPERTIES	NOMINAL VALUE	TEST METHOD
Relative Thermal Index - Electrical Strength		UL 746B
0.75 mm	130 °C	
1.5 mm	130 °C	
3.0 mm	130 °C	
Relative Thermal Index - Mechanical Impact		UL 746B
0.75 mm	125 °C	
1.5 mm	125 °C	
3.0 mm	125 °C	
Relative Thermal Index - Mechanical Strength		UL 746B
0.75 mm	125 °C	
1.5 mm	125 °C	
3.0 mm	125 °C	

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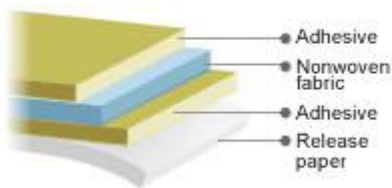
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General-purpose double coated tapes **G9000-SY**

Features

- Adhesive tape with lower environmental impact with UV curable manufacturing method (non solvent adhesive coating process).
- G9000-SY clears The VOC guideline of Japanese Health, Labor and Welfare.
- High adhesive quality (heat resistance and weather resistance) for wide ranging applications.
- Excellent holding power even at elevated temperature of 100°C.

Structure



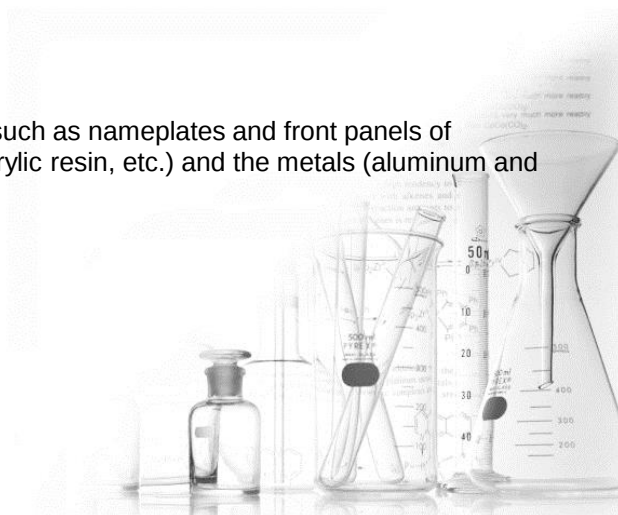
Product name	G9000-SY
Main component	Acrylic
Carrier	Nonwoven fabric
Color	Translucent
Adhesive thickness (μm)	About 150
Release paper thickness (μm)	About 120
Bonding strength (N/20mm) *1	11.77
Bonding strength (N/20mm) *2	8.00
St'd size (width & length)	500mm × 50m 1020mm × 50m

*1 180° peeling strength / substrate : stainless steel SUS304 (surface is polished by #280 sandpaper)

*2 180° peeling strength / substrate : stainless steel SUS304BA

Suitable use

- It is suitable for the material bonding usage of plastic such as nameplates and front panels of electricity and an electronic equipment (ABS, PS, and acrylic resin, etc.) and the metals (aluminum and stainless steel plate, etc.).



Technical data

[Remarks]

*The above values are sample observed values, not the guaranteed performance.

1. Bonding strength on various type of substrate (180° peeling)

<Test piece condition>

Tape width: 20mm

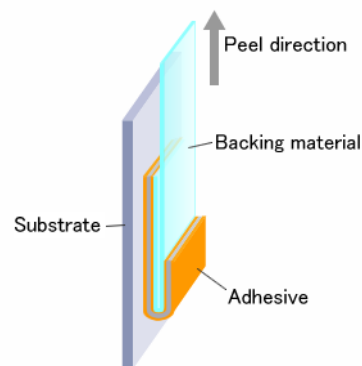
Bonding condition: One stroke with 2-kg roller

Measuring condition: 23°C±5°C 60%±20%RH

Peeling speed: 300mm/min

Backing material: 25μmPET

[Left at RT for one hour before measurement]



<180° peeling strength test>

<Results>

(N/20mm)

Substrate	AL	ABS	Acrylic	PS	PC	PP
180° peeling strength	8.8	11.6	12.4	11.5	11.9	5.1

Substrate	Soft PVC	Hard PVC	Glass	CR	NR	Slip and stick
180° peeling strength	12.6	13.2	12.9	3.4	4.0	

2. Holding power at different temperatures

<Test piece condition>

Substrate: Stainless steel SUS304

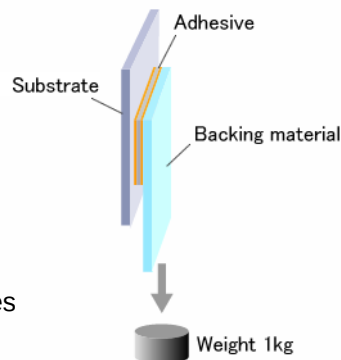
(surface is polished by #280 sandpaper)

Bonding area: 25mm × 25mm

Bonding condition: One stroke with 2-kg roller

[Left at RT for one hour and then at each temperature for 30 minutes before measurement]

[Creep length after one hour application of 1-kg load]



<Holding power test>

<Results>

Measurement temperature	40°C	60°C	80°C	100°C
Creep length (mm)	0.2	0.3	0.3	0.6

3. Bonding strength at different temperatures (180° peeling)

<Test piece condition>

Substrate: Stainless steel SUS304 (surface is polished by #280 sandpaper)

Tape width : 20mm

Bonding condition: One stroke with 2-kg roller

Peeling speed: 300mm/min

Backing material: 100μm Aluminum foil (-20°C to 5°C), 25μmPET (10°C to 100°C)

[Left at RT for one day and then at each temperature for 30 minutes before measurement]

<Results>

(N/20mm)

Measurement temperature	-20°C	0°C	5°C	10°C	23°C	40°C	60°C	80°C	100°C
180° peeling strength	*	32.4	28.3	25.5	17.4	14.4	11.9	10.8	9.3

* AF from backing material

4. Stable weight peeling

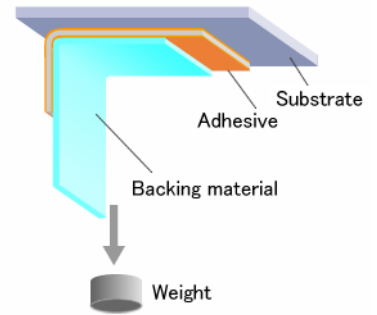
<Test piece condition>

Tape width: 20mm

Bonding condition: One stroke with 2-kg roller

Measurement condition: 23°C±5°C 60%±20%RH

[Left at RT for one hour, measure the peeled off distance by 100-g load]



< Stable weight peeling test >

<Results>

		SUS	AL	ABS	PS	Acrylic	PP
Peel off distance (mm)	1 hour	1.0	2.0	2.0	2.5	2.0	3.5
	3 hours	1.3	3.0	3.5	5.0	3.3	7.8
	5 hours	1.3	2.8	4.5	7.5	4.5	11.0
	24 hours	1.5	9.5	18.5	34.0	16.0	59.0

5. Amount of VOC diffusion

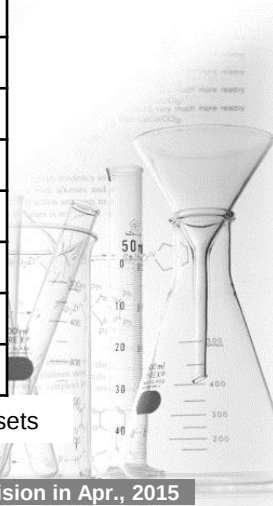
<Methods of analysis>

JIS A-1901: Small chamber method

<Results>

(Volatile organic compound)	The indoor density indicator value ※	G9000-SY
formaldehyde	100µg/m3	<2.5
toluene	260µg/m3	<0.5
Xylene	870µg/m3	<0.5
para-dichlorobenzene	240µg/m3	<0.5
Ethylbenzene	3800µg/m3	<0.5
styrene	220µg/m3	<0.5
Chlorpyrifos	1µg/m3	<0.02
Dibutyl phthalate	220µg/m3	<0.02
tetradecane	330µg/m3	0.7
Bis-(2-ethylhexyl)phthalate	120µg/m3	<0.02
DIAZINON	0.29µg/m3	<0.02
acetaldehyde	48µg/m3	<2.5
FENOBUCARB	33µg/m3	<0.02

※ The indoor density indicator value that the Ministry of Health, Labour and Welfare in Japan sets



Revision in Apr., 2015

Note on the characteristic data given— Data on the characteristics of the products described in this catalog are based on the results of evaluations carried out by the company. This does not guarantee that the characteristics of the product conform with your usage environment. Before use, review the usage conditions based on evaluation data obtained from the equipment and substrates actually used.

Dexerials Corporation

URL : <http://www.dexerials.jp/en/>

Head Office: Gate City Osaki, East Tower 8th floor,1-11-2 Osaki, Shinagawa-ku, Tokyo, JAPAN 141-0032

Chemical Products Sales Dept. TEL : +81-3-5435-3946



PGGU2.MH15431 Marking and Labeling System Materials - Component

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Marking and Labeling System Materials - Component

[See General Information for Marking and Labeling System Materials - Component](#)

DEXERIALS CORP

MH15431

1078 KAMIISHIKAWA

KANUMA-SHI, TOCHIGI-KEN 322-8503 JAPAN

Pressure-sensitive laminating adhesives:

Model No.	Face Stock	Face Stock Thk(mm)	Application Surface	Max Temp (°C)	Min Temp (°C)	Indoor Use	Outdoor Use	Additional Conditions
G4000								
	Acrylic	0.483 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.483 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-

G9000, G9000R, G9000-SY, G9000W, G9000RW, G9000T, G9010, G9011, G9050, G9050W, G9051, G9052, G9052W								
	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.483 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
G9050, G9050W, G9051, G9052, G9052W								
	Acrylic	0.483 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
G9100, G9100W, G9120								
	Acrylic	0.508 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Aluminum	0.203 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.508 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
G9900, G9900W, G9900T, G9953RP								
	Acrylic	0.508 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.508 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
NP203, NP203W								
	Acrylic	0.48 - 2	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.48 - 2	Acrylonitrile butadiene styrene	80	-40	X	-	-
NP303, NP303W								
	Acrylic	0.48 - 2	Acrylonitrile butadiene styrene	80	-40	X	-	-

	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.48 - 2	Acrylonitrile butadiene styrene	80	-40	X	-	-
T4000, T4000W								
	Acrylic	0.483 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.483 - 2.007	Acrylonitrile butadiene styrene	80	-40	X	-	-
T4000B, T4000BW								
	Acrylic	0.48 - 2	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Aluminum	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	-
	Polycarbonate	0.48 - 2	Acrylonitrile butadiene styrene	80	-40	X	-	-
T4411, T4411W, T4900, T4900W								
	Aluminum	0.051 - 0.813	Alkyd paint	150	-40	X	X	-
		0.051 - 0.813	Aluminum	150	-40	X	-	-
		0.051 - 0.813	Galvanized steel	150	-40	X	X	-
		0.051 - 0.813	Porcelain	150	-40	X	X	-
		0.051 - 0.813	Stainless steel	150	-40	X	-	-
		0.051 - 0.813	Polycarbonate	100	-40	X	-	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	-	-

	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	-	-
T4720							
Aluminum	0.051 - 0.813	Aluminum	150	-40	X	-	-
	0.051 - 0.813	Galvanized steel	150	-40	X	-	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	-	-
	0.051 - 0.813	Polypropylene	80	-40	X	-	-
	0.051 - 0.813	Polystyrene	60	-40	X	-	-

Note: Application surfaces are smooth, flat, and rigid unless otherwise specified. Labels suitable for application to two or more plastic or painted surfaces are considered suitable for blends of those plastics or paints, with Conditions of Acceptability common to the individual components in the blend.

Marking: Company name and model designation.

Last Updated on 2012-11-28

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