

亞 驪 企 業 股 份 有 限 公 司
ARISTOTLE ENTERPRISES

承 認 申 請 書

ROHS COMPLIANCE

客戶名稱: 晶睿通訊股份有限公司
Customer
廠商料號: RFA-02-JP585-70-140
Part No.
品名: 2.4GHz
Description
圖號: RFA-02-JP585-70-140
Drawing No.
客戶料號: 631444200G
Drawing No.

出廠簽章:

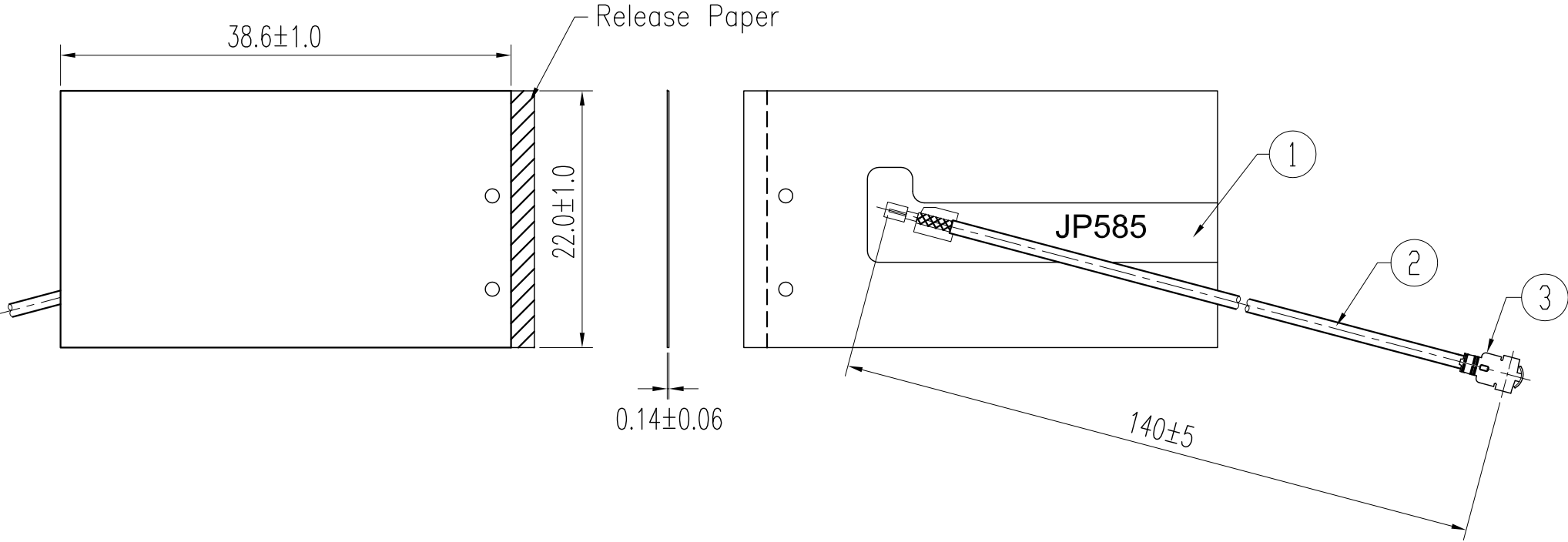
檢 查 TEST BY	核 對 CHECK BY	承 認 APPROVE BY
張家福	蔡銘中	廖煥文

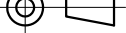
承認簽章:

檢 查 TEST BY	核 對 CHECK BY	承 認 APPROVE BY

地址:新北市中和區莒光路 63 號 8 樓
電話:02-2225-8209
傳真:02-2225-7523

NO.	NAME	FINSH	MAT'L	Q'TY	MEMO
1.	FPC	Black	PI	1	
2.	Cable	Gray	--	1	ø1.13
3.	I-PEX	Gold Plated	Brass	1	MHF1

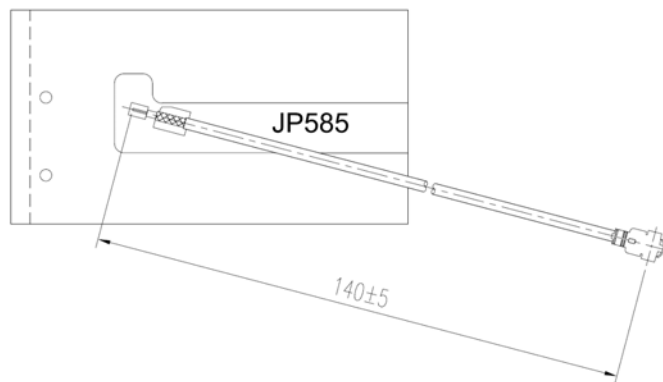


PROJECTION		TOLERANCE UNLESS OTHERWISE SPECIFIED			亞驪企業股份有限公司 <i>ARISTOTLE ENTERPRISES INC.</i>	
					TITLE	
UNITS		.X ±1.0	X' ± 5°		RFA-02-JP585-70-140	
MM		.XX ±0.5			DWG NO.	
		.XXX ±0.2			RFA-02-JP585-70-140	
REV.	B	APPD.				
SHEET	1/1	CHKD.				
SIZE	SCALE	DESIGN				
A4	1:1	DRAW	陸鴻隆	2022/03/17		

RFA-02-JP585-70-140

Specifications

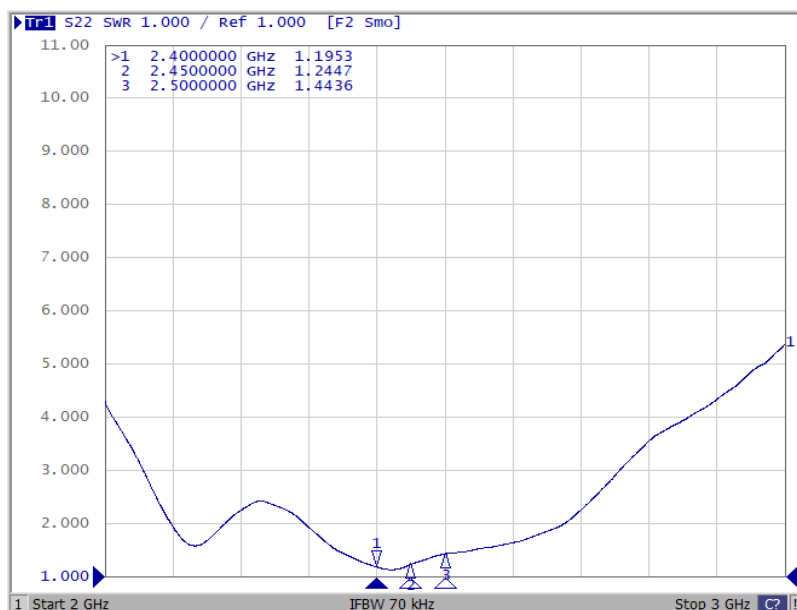
Frequency range	2400 - 2500 MHz
Peak gain	1.78 dBi
Average gain	-1.87 dBi
VSWR	2.0: 1 Max.
Polarization	Linear, vertical
Impedance	50 Ω
Connector	IPEX
Cable	$\varnothing 1.13$



Environment & Mechanical Characteristics

Temperature	- 10°C to +55°C
Humidity	95% @ 25°C

VSWR

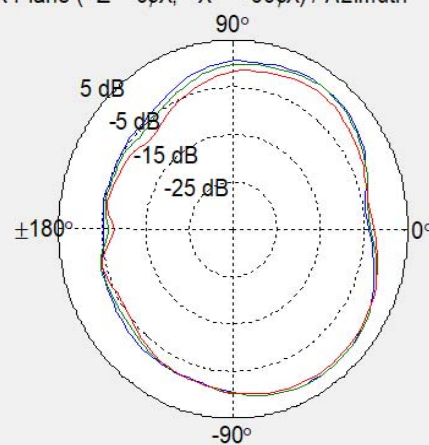
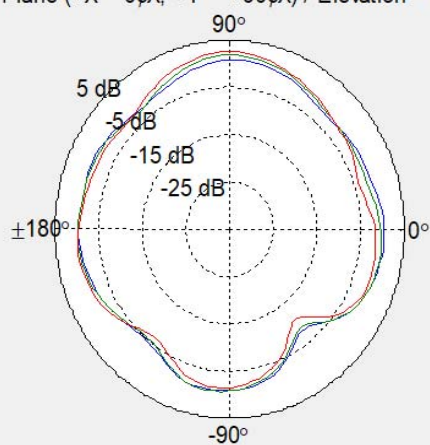
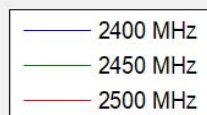


Radiation Pattern

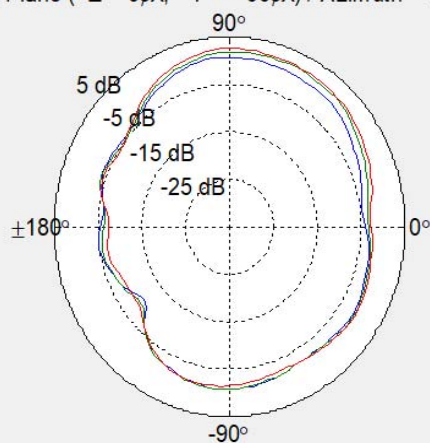
2G Band = 2400 - 2500 MHz % 2G BAND

XY Plane (+X = 0°X, +Y = +90°X) / Elevation = 90°X

ZX Plane (+Z = 0°X, +X = +90°X) / Azimuth = 0°X



YZ Plane (+Z = 0°X, +Y = +90°X) / Azimuth = 90°X



亞驪企業股份有限公司

文件 編號		文件 名稱	C774_ RFA-02-JP585-70-140				發行 版本	A	頁次	1/1
客戶代號：		C774				最小包裝	PCS	50		
客戶料號/品名：		631444200G				中包裝	PCS	200		
亞驪料號/品名：		RFA-02-JP585-70-140				大包裝	PCS	2000		
相關配件						備註				

1. 最小包裝(50PCS-夾鏈袋)



示意圖

2. 中包裝(200PCS-PE 袋)



示意圖

PN: 631444200G
 Name: RFA-02-JP585-70-140
 P/O: 1000117757
 Q'TY: 200
 Date: 2022/04/01

3. 大包裝(2000PCS-1 箱)



示意圖

4.

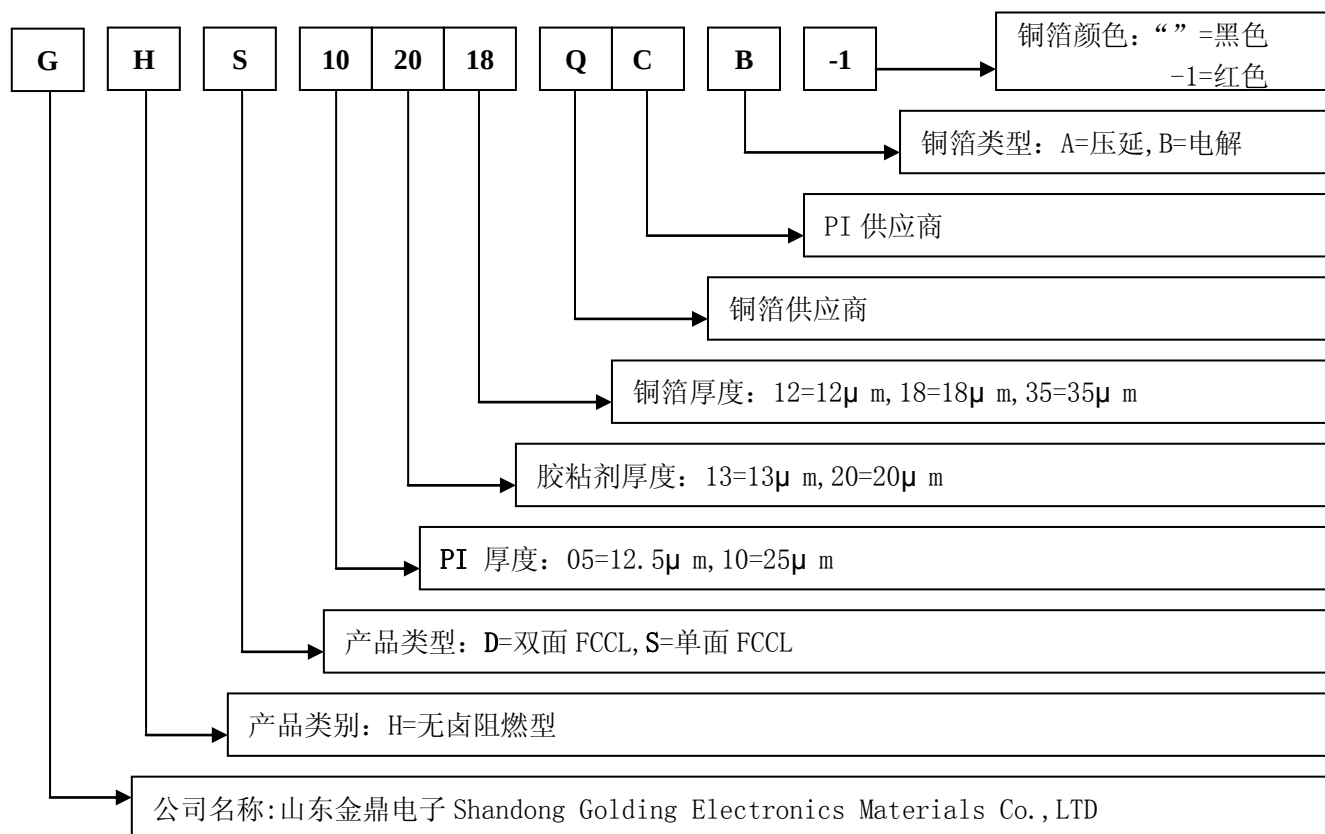
一、产品结构

产品规格	单位	厚度
总厚度	μm	63
Cu 厚度	μm	18
AD 厚度	μm	20
PI 厚度	μm	25



结构图

二、编码原则

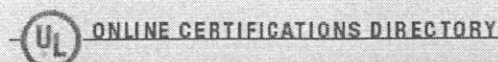


三、质量规格

项目	单位	质量规格	实测	测试方法
厚度	μm	63±5	63±3	JIS C 6471-1995 6.2
剥离强度	N/mm	≥1.0	≥1.0	IPC-TM-650 2.4.9
耐焊性	\	300°C×10sec	PASS	IPC-TM-650 2.4.13
尺寸稳定性	%	TD : ±0.15	PASS	IPC-TM-650 2.2.4
		MD : ±0.15	PASS	IPC-TM-650 2.2.4
体积电阻率	Ω.cm	≥1.0×10 ¹³	≥2.0*10 ¹³	JIS C 6471-1995 7.1
表面绝缘电阻	Ω	≥1.0×10 ¹¹	≥2.0*10 ¹¹	JIS C 6471-1995 7.2
表面耐电压 AC500V	\	无飞弧	PASS	JIS C 6471-1995 7.3
层间耐电压 AC500V	\	无绝缘层破坏	PASS	JIS C 6471-1995 7.4
介电常数	\	≤4.0	3.2-3.5	JIS C 6471-1995 7.5
耐酸 2mol/LHCl	\	10min	PASS	IPC-TM-650 2.3.2
耐碱 2mol/L NaOH	\	10min	PASS	IPC-TM-650 2.3.2
耐溶剂 (MEK、IPC)	\	10min	PASS	IPC-TM-650 2.3.2

四、保存环境及保存期限

- 1、保存环境：温度：(25±10) °C，湿度：(50±20) %，无化学腐蚀气体。
- 2、保存期限：一年



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QMTS2.E192337

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

For enhanced search functionality, please visit UL's iQ™ Family of Databases.

Click on a product designation for complete information.

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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

JIUJIANG FLEX CO LTD
1210 Qianjin Rd E
Jiujiang, Jiangxi 332006 CHINA

E192337

Base films (declad materials):

		Film		Adhesive				R.T.I.				H			
Mtl Dsg	Color	Min Thk (mm)	Max Thk (mm)	Min Thk (mic)	Max Thk (mic)	Flame Class	Elec (°C)	Mech (°C)	H W I	H A I	V T R	C T I	Meets 746E DSR		
Polyester Base films with A508 adhesive on one side only, furnished as sheets.															
LPET%/D-FR (##)															
	NC	0.050	0.050	30.5	30.5	V-0	105	105	5	3	0	4	-		
		0.075	0.075	30.5	30.5	V-0	105	105	-	-	-	-	-		
		0.100	0.100	30.5	30.5	V-0	105	105	-	-	-	-	-		
		0.125	0.125	30.5	30.5	V-0	105	105	-	-	-	-	-		
LPET%/S-FR (##)															
	NC	0.050	0.050	30.5	30.5	VTM-1	105	105	5	3	0	4	-		
		0.075	0.075	30.5	30.5	VTM-1	105	105	-	-	-	-	-		
		0.100	0.100	30.5	30.5	VTM-1	105	105	-	-	-	-	-		
		0.125	0.125	30.5	30.5	VTM-1	105	105	5	-	-	-	-		
Polyethylene Terephthalate (PET) Base films with Epoxy adhesive on one or both sides, furnished as sheets.															
LPET1\$/@-FR															
	NC	0.0234	0.0234	20	50	VTM-0	-	-	-	-	-	-	-		
Polyethylene Terephthalate (PET) Base films with Epoxy and Polyester adhesive on one or both sides, furnished as sheets or rolls.															
LPET##\$/@-HFR															
	NC	25	25	18	18	VTM-0	105	105	5	4	-	-	-		
		25	25	35	35	VTM-0	105	105	4	4	-	-	Yes		
		50	50	18	18	VTM-0	105	105	4	3	-	-	Yes		
		50	50	35	35	VTM-0	105	105	4	2	-	2	Yes		
Polyimide (PI) Base films with A398 adhesive on one side only, furnished as sheets.															

CPI(#)/A&-FR (##)													
NC	0.025	-	25.4	38.1	V-0	240	200	5	4	0	4	-	-
	0.050	-	25.4	38.1	V-0	240	200	-	-	-	-	-	-
Polyimide (PI) Base films with A508 adhesive on one or both sides, furnished as sheets.													
LPI(#)/@-FR (##)													
NC	0.013	0.013	18	18	V-0	240	200	0	3	-	4	Yes	-
	0.025	0.025	30.5	30.5	V-0	240	200	5	3	0	4	-	-
	0.050	0.050	30.5	30.5	V-0	240	200	-	-	-	-	-	-
Polyimide (PI) Base films with Acrylic adhesive on one side only, furnished as sheets.													
AFA1-FR													
NC	0.025	0.050	25	25	V-0	-	-	-	-	-	-	-	-
AFA1.5-FR													
NC	0.025	0.050	38	38	V-0	-	-	-	-	-	-	-	-
Polyimide (PI) Base films with Epoxy (EP) adhesive on one or both sides, furnished as sheets or rolls.													
LPI#\$/@-HF													
NC	0.0125	0.050	12	30	V-0	220	220	4	1	-	3	Yes	-
Polyimide (PI) Base films with TPX adhesive on one or both sides.													
2LTPI#\$/D													
NC	8.5	8.5	2	2	VTM-0	130	130	1	3	-	-	Yes	-
	12.5	12.5	2.8	2.8	VTM-0	130	130	1	2	-	-	Yes	-
	17	17	4	4	VTM-0	130	130	1	2	-	-	Yes	-
	38	38	6	6	V-0	130	130	1	2	-	3	Yes	-
Polyimide (PI) Base films with adhesive on one or both sides.													
LPI0.5\$/@-FR													
NT	0.013	0.013	-	-	V-0	240	200	0	3	-	4	Yes	-

Metal clad films:

			Film		Adhesive		Clad Cond Thk			Max		Max	Solder Lts	
Metal Clad Dsg	Laminate Dsg	Pre-preg Dsg	Min Thk (mm)	Max Thk (mm)	Min Thk (mic)	Max Thk (mic)	Min Ext (mic)	Max Ext (mic)	Max Int (mic)	Area Dia (mm)	Flame Class	Oper Temp (°C)	Temp (°C)	Time (sec)
Polyester with A508 adhesive Metal clad films for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets.														
LPET%/D-FR														
	LPET%/D-FR	-	0.050	0.125	30.5	30.5	17	68	-	50.8	V-0	105	248	10
Polyester with A508 adhesive Metal clad films for use in single layer printed wiring boards with copper on one side only, furnished as sheets.														
LPET%\$/S-FR														
	LPET%\$/S-FR	-	0.050	0.125	30.5	30.5	17	68	-	50.8	VTM-1	105	204	5
Polyethylene Terephthalate (PET) with Epoxy and Polyester adhesive Metal clad films for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets or rolls.														
LPET#\$/@-HFR														
	LPET#\$/@-HFR	-	25	50	18	35	17	70	-	50.8	VTM-0	105	204	5
Polyimide (PI) with A508 adhesive Metal clad films for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets.														
LPI(#)\$/@-FR														
	LPI(#)\$/@-FR	-	0.025	0.50	30.5	30.5	17	68	-	50.8	V-0	120	288	10

Polyimide (PI) with Epoxy (EP) adhesive Metal clad films for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets or rolls.														
LPI#\$/@-HF														
LPI#\$/@-HF	-	0.0125	0.050	12	30	12	70	-	50.8	V-0	105	288	10	
Polyimide (PI) with TPI adhesive Metal clad films for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets or rolls.														
2LTPI#\$/D														
2LTPI#\$/D	-	8.5	8.5	2	2	9	50	-	50.8	VTM-0	130	288	10	
		12.5	12.5	2.8	2.8	9	50	-	50.8	VTM-0	130	288	10	
		17	17	4	4	9	50	-	50.8	VTM-0	130	288	10	
		38	38	6	6	9	50	-	50.8	V-0	130	288	10	

Metal clad films (Flammability Only Recognition):

			Film		Adhesive		Clad Cond Thk			Max		Max	Solder Lts	
Metal Clad Dsg	Lam-inate Dsg	Pre-preg Dsg	Min Thk (mm)	Max Thk (mm)	Min Thk (mic)	Max Thk (mic)	Min Ext (mic)	Max Ext (mic)	Max Int (mic)	Area Dia (mm)	Flame Class	Oper Temp (°C)	Temp (°C)	Time (sec)
Polyethylene Terephthalate (PET) with Epoxy adhesive Metal clad films for use in single layer printed wiring boards with copper on one or both sides, furnished as sheets (Flammability Only Recognition).														
LPET1\$/@-FR														
	-	-	0.0234	0.0234	20	50	-	-	-	-	VTM-0	-	204	5

Coverlays:

		Film		Adhesive		
Mtl Dsg	Color	Min Thk (mm)	Max Thk (mm)	Min Thk (mic)	Max Thk (mic)	Flame Class
Polyethylene Terephthalate (PET) film with Epoxy adhesive Coverlays for use in flexible printed wiring boards, furnished as sheets.						
CPET-FR!	NC	0.023	0.050	25	50	VTM-0
Polyethylene Terephthalate (PET) film with Epoxy and Polyester adhesive Coverlays for use in flexible printed wiring boards, furnished as sheets or rolls.						
CPET#E&-HFR						
	WT	25	50	15	35	VTM-0
Polyimide (PI) film with Epoxy (EP) adhesive Coverlays for use in flexible printed wiring boards.						
CPI#E&-HF						
	NC	0.0125	0.050	15	35	VTM-0

! - The shipment of Coverlay Grade CPET-FR must always coated with one sided adhesive.

\$ - Denotes ED or RA copper foil

% - Denotes film thickness in mils (2, 3, 4, 5).

& - Denotes adhesive thickness in mils

(##) - The temperature index applies to polyimide film component only.

(#) - Denotes film thickness in mils

@ - Denotes S for single-sided or D for double-sided.

Marking: Company name and material designation on container or wrapper.

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467MP Transfer Tape

Product Data Sheet

Updated : February 1999

Supersedes : February 1996

Product Description

A-30 is a firm acrylic pressure-sensitive adhesive system. It features high ultimate bond strength with excellent high temperature performance and excellent

solvent resistance. Bond strength increases substantially with natural ageing.

467 is a long ageing resistant product used extensively by the nameplate industry.

Physical Properties

Not for specification purposes

Adhesive Type	Firm Acrylic	3M ref : A-30
Thickness (ASTM D-3652) Tape Liner Total	50 µm 2 Thou 100 µm 150 µm	
Release Liner	Tan printed polycoated paper.	
Tape Colour	Clear	
Shelf Life	12 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

Performance

Characteristics

Not for specification purposes

Adhesion to Stainless Steel ASTM D-3330	5.5 N/10mm	
Shear Resistance	High	
Temperature Performance Max : Minutes / Hours Max : Days / Weeks Minimum	204 °C 149 °C -30 °C	
Solvent Resistance	Excellent. When the adhesive is properly applied to impervious materials, it will resist solvent attack and adhesive softening through edge contact with mild acids and alkalines, oils, grease, gasoline kerosene, JP-4 fuel, and many other standard aromatic and aliphatic solvents. However, it is not recommended for uses where continuous immersion is required.	

Date : February 1999
467MP Transfer Tape

Performance Characteristics (Cont..) Not for specification purposes	UV Light Resistance	Excellent. Will not oxidise when exposed to air or sunlight UV.
	Water Resistance	Excellent. There are no evident adverse effects on the bond of properly applied materials after immersion in 21°C water for about 100 hours.
Additional Product Information	The legend Hi Performance No. 467 is imprinted on the release liner.	467MP is designed with a moisture resistant release liner which resists cockling or wrinkling from high humidity. The 50 micron thick adhesive is ideally suited for joining materials that are relatively smooth, thin and have low residual stress. If rough or thick materials with a small degree of residual stress are to be joined, then the 130 micron thick adhesive should be considered
Application Techniques	1. Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure develops better adhesive contact & thus improves bond strength. 2. To obtain optimum adhesion, the bonding	surfaces must be clean dry and well unified. A typical surface cleaning solvent is isopropyl alcohol & water. Use proper safety precautions for handling solvents. 3. Ideal tape application temperature range is 21°C to 38°C (70°F to 100°F). Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended because the adhesive becomes too firm to adhere readily. However once properly applied low temperature holding is generally satisfactory.
Applications	467MP is well suited for bonding together a wide variety of similar and dissimilar materials such as metals, paints, wood, glass and some plastics.	An excellent adhesive for mounting nameplates and decorative trim. Automotive Industry.
Specifications	This tape meets the requirements of U.S. Government specification MIL-P-19834, Amendment 1, Type 1.	467MP is a UL and AGA recognised product.

3M is a trademark of the 3M Company.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.



Specialty Tapes & Adhesives

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Tel (01) 280 3555
Fax (01) 280 3509



PGGU2.MH26206
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

3M COMPANY INDUSTRIAL ADHESIVES & TAPES DIV
 3M CENTER
 BLDG 230-3G-07
 ST PAUL, MN 55144 USA

MH26206

Face stocks with pressure-sensitive laminating adhesives:

Model No.	Application Surface	Max Temp (°C)	Min Temp (°C)	Indoor Use	Outdoor Use	Additional Conditions
"3M® Face Stock".						
#8049 with laminating adhesive #9453, #9471, #9472						
	Acrylic paint	150	-40	X	X	-
	Polyester paint	150	-40	X	X	-
	Alkyd paint	100	-40	X	X	-
	Aluminum	100	-40	X	X	-
	Galvanized steel	100	-40	X	X	-
	Nylon - Polyamide	100	-	X	-	-
	Phenolic - Phenol Formaldehyde	100	-40	X	X	-
	Polycarbonate	100	-	X	-	-
	Porcelain	100	-40	X	X	-
	Stainless steel	100	-40	X	X	-
	Polypropylene	80	-	X	-	-
	Polystyrene	80	-40	X	X	-
	Acrylonitrile butadiene styrene	60	-40	X	X	-
#8049 with laminating adhesive #9459W						
	Aluminum	150	-40	X	-	-
	Stainless steel	150	-40	X	-	-
	Polycarbonate	100	-40	X	-	-
	Polypropylene	80	-40	X	-	-
#8053 with laminating adhesive #467, #468						
	Alkyd paint	150	-40	X	X	-
	Aluminum	150	-40	X	X	-
	Galvanized steel	150	-40	X	X	-
	Porcelain	150	-40	X	X	-
	Stainless steel	150	-40	X	X	-
	Polycarbonate	100	-40	X	X	-
	Acrylonitrile butadiene styrene	80	-40	X	X	-
	Nylon - Polyamide	80	-40	X	X	-
#8053 with laminating adhesive #941, #966, #9462						
	Alkyd paint	150	-40	X	X	-

Aluminum	150	-40	X	X	-
Galvanized steel	150	-40	X	X	-
Porcelain	150	-40	X	X	-
Stainless steel	150	-40	X	X	-
Polycarbonate	100	-40	X	X	-
Acrylonitrile butadiene styrene	80	-40	X	X	-
#8053 with laminating adhesive #9489					
Aluminum	150	-40	X	X	-
Stainless steel	150	-40	X	X	-
Polycarbonate	100	-40	X	X	-
Polypropylene	80	-40	X	X	-
#8053, #8050 with laminating adhesive #9453, #9471, #9472					
Acrylic paint	150	-40	X	X	-
Alkyd paint	150	-40	X	X	-
Aluminum	150	-40	X	X	-
Galvanized steel	150	-40	X	X	-
Polyester paint	150	-40	X	X	-
Porcelain	150	-40	X	X	-
Stainless steel	150	-40	X	X	-
Nylon - Polyamide	100	-	X	-	-
Phenolic - Phenol Formaldehyde	100	-40	X	X	-
Polycarbonate	100	-	X	-	-
Polypropylene	80	-	X	-	-
Polystyrene	80	-40	X	X	-
Acrylonitrile butadiene styrene	60	-40	X	X	-
8039\$, 8044\$					
Alkyd paint	60	-40	X	X	FE
Polyester paint	60	-40	X	X	FE
8039@, 8044@					
Alkyd paint	60	-40	X	X	FE
Polyester paint	60	-40	X	X	FE
Stainless steel	60	-40	X	X	FE
8044&					
Alkyd paint	150	-40	X	-	-
Aluminum	150	-40	X	-	-
Galvanized steel	150	-40	X	-	-
8049@					
Alkyd paint	60	-40	X	X	-
Polyester paint	60	-40	X	X	-
Stainless steel	60	-40	X	X	-

Heat-activated laminating adhesives:

Model No.	Face Stock	Face Stock Thk(mm)	Application Surface	Max Temp (°C)	Min Temp (°C)	Indoor Use	Outdoor Use	Additional Conditions
"3M® Laminating Adhesive".								
# 583								
	Aluminum	0.051 - 0.813	Alkyd paint	150	-40	X	X	-

0.051 - 0.813	Aluminum	150	-40	X	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	X	-
0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-

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
"3M Brand".								
449								
	Aluminum	0.051 - 0.813	Acrylonitrile butadiene styrene	60	-40	X	X	-
		0.051 - 0.813	Alkyd paint	60	-40	X	X	-
		0.051 - 0.813	Aluminum	60	-40	X	X	-
		0.051 - 0.813	Galvanized steel	60	-40	X	X	-
		0.051 - 0.813	Polycarbonate	60	-40	X	X	-
		0.051 - 0.813	Polypropylene	60	-40	X	X	-
		0.051 - 0.813	Porcelain	60	-40	X	X	-
		0.051 - 0.813	Stainless steel	60	-40	X	X	-
"3M STAMARK® Laminating Adhesive".								
#9502, #9502HL, #9505, #9505HL								
	Aluminum	0.051 - 0.813	Aluminum	150	-40	X	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	X	-
		0.051 - 0.813	Alkyd paint	100	-40	X	X	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
#9522, #9525								
	Aluminum	0.051 - 0.813	Aluminum	150	-40	X	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	X	-
		0.051 - 0.813	Alkyd paint	125	-40	X	X	-

	0.051 - 0.813	Polycarbonate	100	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
#9552, #9553, #9555, #9557, #9559, #9561, #9563							
Aluminum	0.051 - 0.813	Acrylic paint	150	-40	X	X	-
	0.051 - 0.813	Aluminum	150	-40	X	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	X	-
	0.051 - 0.813	Alkyd paint	125	-40	X	X	-
	0.051 - 0.813	Polycarbonate	100	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Epoxy	80	-40	X	X	-
	0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
Polycarbonate	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
	0.178 - 0.762	Epoxy	100	-40	X	X	-
	0.178 - 0.762	Acrylic paint	80	-40	X	X	-
	0.178 - 0.762	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.178 - 0.762	Alkyd paint	80	-40	X	X	-
	0.178 - 0.762	Aluminum	80	-40	X	X	-
	0.178 - 0.762	Galvanized steel	80	-40	X	X	-
	0.178 - 0.762	Nylon - Polyamide	80	-40	X	X	-
	0.178 - 0.762	Polycarbonate	80	-40	X	X	-
	0.178 - 0.762	Polyphenylene oxide/ether	80	-40	X	X	-
Polyester	0.127 - 0.254	Porcelain	80	-40	X	X	-
	0.127 - 0.254	Stainless steel	80	-40	X	X	-
	0.127 - 0.254	Acrylic paint	80	-40	X	X	-
	0.127 - 0.254	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.127 - 0.254	Alkyd paint	80	-40	X	X	-
	0.127 - 0.254	Aluminum	80	-40	X	X	-

	0.127 - 0.254	Epoxy	80	-40	X	X	-
	0.127 - 0.254	Galvanized steel	80	-40	X	X	-
	0.127 - 0.254	Nylon - Polyamide	80	-40	X	X	-
	0.127 - 0.254	Polycarbonate	80	-40	X	X	-
	0.127 - 0.254	Polyphenylene oxide/ether	80	-40	X	X	-
	0.127 - 0.254	Porcelain	80	-40	X	X	-
	0.127 - 0.254	Stainless steel	80	-40	X	X	-
2059							
Aluminum	0.051 - 0.813	Aluminum	150	-40	X	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	X	-
	0.051 - 0.813	Alkyd paint	100	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
"3M® Double Coated Tape".							
55336, 55334A, 55799A							
Aluminum	0.051 - 0.102	Aluminum	150	-40	X	-	-
	0.051 - 0.102	Epoxy	150	-40	X	-	-
	0.051 - 0.102	Stainless steel	150	-40	X	-	-
Polyester	0.127	Aluminum	150	-40	X	-	-
	0.025 - 0.127	Aluminum	150	-29	X	-	-
	0.127	Epoxy	150	-40	X	-	-
	0.025 - 0.127	Epoxy	150	-29	X	-	-
	0.127	Stainless steel	150	-40	X	-	-
	0.025 - 0.127	Stainless steel	150	-29	X	-	-
"3M® Laminating Adhesive".							
#467, #467MS, #468, #468MS, #9180							
Aluminum	0.051 - 0.813	Alkyd paint	150	-40	X	X	-
	0.051 - 0.813	Aluminum	150	-40	X	X	-
	0.051 - 0.813	Galvanized steel	150	-40	X	X	-
	0.051 - 0.813	Porcelain	150	-40	X	X	-
	0.051 -	Stainless steel	150	-40	X	X	-

		0.813					
		0.051 - 0.813	Polycarbonate	100	-40	X	X -
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X -
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X -
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X -
# 7951							
Aluminum		0.051 - 0.813	Aluminum	150	-40	X	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	X -
		0.051 - 0.813	Alkyd paint	125	-40	X	X -
		0.051 - 0.813	Polycarbonate	100	-40	X	X -
		0.051 - 0.813	Acrylic paint	80	-40	X	X -
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X -
		0.051 - 0.813	Epoxy	80	-40	X	X -
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X -
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X -
		0.051 - 0.813					
Polycarbonate		0.127 - 0.762	Acrylic paint	80	-40	X	X -
		0.127 - 0.762	Acrylonitrile butadiene styrene	80	-40	X	X -
		0.127 - 0.762	Alkyd paint	80	-40	X	X -
		0.127 - 0.762	Aluminum	80	-40	X	X -
		0.127 - 0.762	Epoxy	80	-40	X	X -
		0.127 - 0.762	Galvanized steel	80	-40	X	X -
		0.127 - 0.762	Nylon - Polyamide	80	-40	X	X -
		0.127 - 0.762	Polycarbonate	80	-40	X	X -
		0.127 - 0.762	Polyphenylene oxide/ether	80	-40	X	X -
		0.127 - 0.762	Porcelain	80	-40	X	X -
		0.127 - 0.762	Stainless steel	80	-40	X	X -
		0.127 - 0.762					
Polyester		0.127 - 0.254	Acrylic paint	80	-40	X	X -
		0.127 - 0.254	Acrylonitrile butadiene styrene	80	-40	X	X -
		0.127 - 0.254	Alkyd paint	80	-40	X	X -

	0.127 - 0.254	Aluminum	80	-40	X	X	-
	0.127 - 0.254	Epoxy	80	-40	X	X	-
	0.127 - 0.254	Galvanized steel	80	-40	X	X	-
	0.127 - 0.254	Nylon - Polyamide	80	-40	X	X	-
	0.127 - 0.254	Polycarbonate	80	-40	X	X	-
	0.127 - 0.254	Polyphenylene oxide/ether	80	-40	X	X	-
	0.127 - 0.254	Porcelain	80	-40	X	X	-
	0.127 - 0.254	Stainless steel	80	-40	X	X	-
#912, #9567, #9568							
Aluminum	0.051 - 0.813	Alkyd paint	150	-40	X	X	-
	0.051 - 0.813	Aluminum	150	-40	X	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	X	-
	0.051 - 0.813	Polycarbonate	100	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
#919							
Aluminum	0.051 - 0.254	Polycarbonate	100	-40	X	X	-
	0.051 - 0.254	Polyphenylene oxide/ether	80	-40	X	X	-
	0.051 - 0.254	Acrylonitrile butadiene styrene	60	-40	X	X	-
	0.051 - 0.254	Alkyd paint	60	-40	X	X	-
	0.051 - 0.254	Aluminum	60	-40	X	X	-
	0.051 - 0.254	Galvanized steel	60	-40	X	X	-
	0.051 - 0.254	Porcelain	60	-40	X	X	-
	0.051 - 0.254	Stainless steel	60	-40	X	X	-
#9470, #9571, #9572							
Aluminum	0.051 - 0.813	Aluminum	125	-40	X	X	-
	0.051 - 0.813	Galvanized steel	125	-40	X	X	-
	0.051 - 0.813	Porcelain	125	-40	X	X	-
	0.051 - 0.813	Stainless steel	125	-40	X	X	-
	0.051 -	Nylon - Polyamide	100	-40	X	X	-

		0.813						
		0.051 - 0.813	Polycarbonate	100	-40	X	X	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Alkyd paint	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
		0.051 - 0.813	Polypropylene	80	-40	X	X	-
		0.051 - 0.813	Polystyrene	80	-40	X	X	-
#9475								
	Aluminum	0.051 - 0.813	Aluminum	125	-40	X	X	-
		0.051 - 0.813	Galvanized steel	125	-40	X	X	-
		0.051 - 0.813	Polyester paint	125	-40	X	X	FE
		0.051 - 0.813	Porcelain	125	-40	X	X	-
		0.051 - 0.813	Stainless steel	125	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	100	-40	X	X	-
		0.051 - 0.813	Polycarbonate	100	-40	X	X	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Alkyd paint	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
		0.051 - 0.813	Polypropylene	80	-40	X	X	-
		0.051 - 0.813	Polystyrene	80	-40	X	X	-
#9495LE								
	Aluminum	0.051 - 0.813	Acrylic powder paint (smooth)	125	-40	X	-	-
		0.051 - 0.813	Alkyd paint	125	-40	X	X	-
		0.051 - 0.813	Aluminum	125	-40	X	X	-
		0.051 - 0.813	Epoxy powder paint	125	-40	X	X	-
		0.051 - 0.813	Galvanized steel	125	-40	X	X	-
		0.051 - 0.813	Polyester powder paint	125	-40	X	X	-
		0.051 - 0.813	Polyurethane powder paint	125	-40	X	X	-
		0.051 - 0.813	Porcelain	125	-40	X	-	-
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
		0.051 - 0.813	Polypropylene	80	-40	X	X	-

		0.813						
		0.051 - 0.813	Acrylonitrile butadiene styrene	60	-40	X	X	-
		0.051 - 0.813	High density polyethylene	60	-40	X	-	-
		0.051 - 0.813	Polycarbonate	60	-40	X	X	-
		0.051 - 0.813	Low density polyethylene	40	-40	X	X	-
		0.051 - 0.813	Polystyrene	40	-40	X	X	-
#950								
	Aluminum	0.051 - 0.813	Alkyd paint	125	-40	X	X	-
		0.051 - 0.813	Aluminum	125	-40	X	X	-
		0.051 - 0.813	Galvanized steel	125	-40	X	X	-
		0.051 - 0.813	Porcelain	125	-40	X	X	-
		0.051 - 0.813	Stainless steel	125	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	100	-40	X	X	-
		0.051 - 0.813	Polycarbonate	100	-40	X	X	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
		0.051 - 0.813	Polypropylene	80	-40	X	X	-
		0.051 - 0.813	Polystyrene	80	-40	X	X	-
#966, #941, #9462, #9462P								
	Aluminum	0.051 - 0.813	Alkyd paint	175	-40	X	X	-
		0.051 - 0.813	Aluminum	175	-40	X	X	-
		0.051 - 0.813	Galvanized steel	175	-40	X	X	-
		0.051 - 0.813	Porcelain	175	-40	X	X	-
		0.051 - 0.813	Stainless steel	175	-40	X	X	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
#967, #968								
	Aluminum	0.051 - 0.813	Alkyd paint	150	-40	X	X	-
		0.051 - 0.813	Aluminum	150	-40	X	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	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
	0.051 - 0.813	Polycarbonate	60	-40	X	X	-
#973, #992, #995, #9453, #9471, #9472, #9653, #9671, #9672							
Aluminum	0.051 - 0.813	Alkyd paint	125	-40	X	X	-
	0.051 - 0.813	Aluminum	125	-40	X	X	-
	0.051 - 0.813	Galvanized steel	125	-40	X	X	-
	0.051 - 0.813	Porcelain	125	-40	X	X	-
	0.051 - 0.813	Stainless steel	125	-40	X	X	-
	0.051 - 0.813	Nylon - Polyamide	100	-40	X	X	-
	0.051 - 0.813	Polycarbonate	100	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
	0.051 - 0.813	Polypropylene	80	-40	X	X	-
	0.051 - 0.813	Polystyrene	80	-40	X	X	-
1151FL, 1152FL, 1154FL							
Aluminum	0.051 - 0.813	Alkyd paint	150	-40	X	-	-
	0.051 - 0.813	Aluminum	150	-40	X	-	-
	0.051 - 0.813	Galvanized steel	150	-40	X	-	-
	0.051 - 0.813	Porcelain	150	-40	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	-	-
	0.051 - 0.813	Nylon - Polyamide	80	-40	X	-	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	-	-
467MP, 467MPF, 467MPL, 467MPR, 468MP, 468MPF, 468MPL, 468MPR, 7952MP, 7952MPL, 7955MP, 7955MPL, 7962MP, 7962MPL, 7965MP, 7965MPL, 9172MP, 918MP, 9185MP, 9188MP, 9437MP, 9667MP, 9676MP, 9668MP, 9668MPL							
Aluminum	0.051 - 0.813	Aluminum	150	-40	X	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	X	-

	0.051 - 0.813	Alkyd paint	125	-40	X	X	-
	0.051 - 0.813	Polyester paint	100	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
Polycarbonate	0.127 - 0.508	Epoxy	100	-40	X	X	-
	0.127 - 0.508	Polyester paint	100	-40	X	X	-
	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.127 - 0.508	Alkyd paint	80	-40	X	X	-
	0.127 - 0.508	Aluminum	80	-40	X	X	-
	0.127 - 0.508	Galvanized steel	80	-40	X	X	-
	0.127 - 0.508	Nylon - Polyamide	80	-40	X	X	-
	0.127 - 0.508	Polyphenylene oxide/ether	80	-40	X	X	-
	0.127 - 0.508	Polycarbonate	60	-40	X	X	-
	0.127 - 0.508	Polyurethane paint	60	-40	X	X	-
	0.127 - 0.508	Porcelain	60	-40	X	X	-
	0.127 - 0.508	Stainless steel	60	-40	X	-	-
	0.127 - 0.508	Polyethylene terephthalate	40	-40	X	X	-
Polyester	0.076 - 0.178	Polyester paint	100	-40	X	X	-
	0.076 - 0.178	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.076 - 0.178	Alkyd paint	80	-40	X	X	-
	0.076 - 0.178	Aluminum	80	-40	X	X	-
	0.076 - 0.178	Epoxy	80	-40	X	X	-
	0.076 - 0.178	Galvanized steel	80	-40	X	X	-
	0.076 - 0.178	Nylon - Polyamide	80	-40	X	X	-
	0.076 - 0.178	Polyethylene terephthalate	80	-40	X	X	-
	0.076 - 0.178	Polyphenylene oxide/ether	80	-40	X	X	-
	0.076 - 0.178	Polyurethane paint	60	-40	X	X	-
	0.076 - 0.178	Porcelain	60	-40	X	X	-
	0.076 - 0.178	Stainless steel	60	-40	X	-	-
	0.076 - 0.178	Polycarbonate	40	-40	X	X	-

		0.178					
468MP, 468MPF, 468MPL, 468MPR, 7955MP, 7955MPL, 7965MP, 7965MPL, 918MP, 9185MP, 9188MP, 9668MP, 9668MPL							
Aluminum	0.051 - 0.813	Acrylic paint	150	-40	X	X	-
	0.051 - 0.813	Acrylic paint (textured)	150	-40	X	X	-
Stainless steel	0.381 - 0.457	Phenolic - Phenol Formaldehyde	60	-	X	-	-
7945MP, 7953MP, 7953MPP, 7956MP, 7956MWS, 7956WDL, 7957MP, 7959MP, 7961MP, 7966MWS, 7966WDL, 9045MP, 9056MP, 9057MP, 9057MPW, 9059MP, 9061MP, 9495B, 9495BF, 9495FL, 9495MP, 9495MPF, 7945MPL, 7953MPL, 7956MPL, 7957MPL, 7959MPL, 7961MP							
Aluminum	0.051 - 0.813	Aluminum	150	-40	X	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	X	-
	0.051 - 0.813	Alkyd paint	125	-40	X	X	-
	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
Polycarbonate	0.127 - 0.508	Epoxy	100	-40	X	X	-
	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.127 - 0.508	Alkyd paint	80	-40	X	X	-
	0.127 - 0.508	Aluminum	80	-40	X	X	-
	0.127 - 0.508	Galvanized steel	80	-40	X	X	-
	0.127 - 0.508	Nylon - Polyamide	80	-40	X	X	-
	0.127 - 0.508	Polyphenylene oxide/ether	80	-40	X	X	-
	0.127 - 0.508	Polycarbonate	60	-40	X	X	-
	0.127 - 0.508	Polyurethane paint	60	-40	X	X	-
	0.127 - 0.508	Porcelain	60	-40	X	X	-
	0.127 - 0.508	Stainless steel	60	-40	X	-	-
	0.127 - 0.508	Polyethylene terephthalate	40	-40	X	X	-
Polyester	0.076 - 0.178	Epoxy	100	-40	X	X	-
	0.076 - 0.178	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.076 - 0.178	Alkyd paint	80	-40	X	X	-
	0.076 - 0.178	Aluminum	80	-40	X	X	-
	0.076 -	Galvanized steel	80	-40	X	X	-

		0.178					
		0.076 - 0.178	Nylon - Polyamide	80	-40	X	X -
		0.076 - 0.178	Polyethylene terephthalate	80	-40	X	X -
		0.076 - 0.178	Polyphenylene oxide/ether	80	-40	X	X -
		0.076 - 0.178	Polyurethane paint	60	-40	X	X -
		0.076 - 0.178	Porcelain	60	-40	X	X -
		0.076 - 0.178	Stainless steel	60	-40	X	- -
		0.076 - 0.178	Polycarbonate	40	-40	X	X -
8132LE, 8135LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472FL, 9472LE, 9653LE, 9671LE, 9672LE							
Aluminum		0.051 - 0.813	Acrylic powder paint	125	-40	X	- -
		0.051 - 0.813	Alkyd paint	125	-40	X	X -
		0.051 - 0.813	Aluminum	125	-40	X	X -
		0.051 - 0.813	Epoxy powder paint	125	-40	X	X -
		0.051 - 0.813	Epoxy powder paint (textured)	125	-40	X	X -
		0.051 - 0.813	Galvanized steel	125	-40	X	X -
		0.051 - 0.813	Polyester powder paint (textured)	125	-40	X	X -
		0.051 - 0.813	Polyester powder paint	125	-40	X	X -
		0.051 - 0.813	Porcelain	125	-40	X	- -
		0.051 - 0.813	Urethane powder paint	125	-40	X	X -
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X -
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X -
		0.051 - 0.813	Polypropylene	80	-40	X	X -
		0.051 - 0.813	Acrylonitrile butadiene styrene	60	-40	X	X -
		0.051 - 0.813	High density polyethylene	60	-40	X	- -
		0.051 - 0.813	Polycarbonate	60	-40	X	X -
		0.051 - 0.813	Low density polyethylene	40	-40	X	X -
		0.051 - 0.813	Polystyrene	40	-40	X	X -
Polycarbonate		0.127 - 0.508	Acrylic powder paint	125	-40	X	- -
		0.127 - 0.508	Alkyd paint	125	-40	X	- -
		0.127 - 0.508	Aluminum	125	-40	X	- -
		0.127 - 0.508	Epoxy powder paint (textured)	125	-40	X	- -

	0.127 - 0.508	Epoxy powder paint	125	-40	X	-	-
	0.127 - 0.508	Galvanized steel	125	-40	X	-	-
	0.127 - 0.508	Polyester powder paint	125	-40	X	-	-
	0.127 - 0.508	Polyester powder paint (textured)	125	-40	X	-	-
	0.127 - 0.508	Porcelain	125	-40	X	-	-
	0.127 - 0.508	Urethane powder paint	125	-40	X	-	-
	0.127 - 0.508	Nylon - Polyamide	80	-40	X	-	-
	0.127 - 0.508	Polyphenylene oxide/ether	80	-40	X	-	-
	0.127 - 0.508	Polypropylene	80	-40	X	-	-
	0.127 - 0.508	Acrylonitrile butadiene styrene	60	-40	X	-	-
	0.127 - 0.508	High density polyethylene	60	-40	X	-	-
	0.127 - 0.508	Polycarbonate	60	-40	X	-	-
	0.127 - 0.508	Low density polyethylene	40	-40	X	-	-
	0.127 - 0.508	Polystyrene	40	-40	X	-	-
Polyester	0.076 - 0.178	Acrylic powder paint	125	-40	X	-	-
	0.076 - 0.178	Alkyd paint	125	-40	X	X	-
	0.076 - 0.178	Aluminum	125	-40	X	X	-
	0.076 - 0.178	Epoxy powder paint (textured)	125	-40	X	X	-
	0.076 - 0.178	Epoxy powder paint	125	-40	X	X	-
	0.076 - 0.178	Galvanized steel	125	-40	X	X	-
	0.076 - 0.178	Polyester powder paint	125	-40	X	X	-
	0.076 - 0.178	Polyester powder paint (textured)	125	-40	X	X	-
	0.076 - 0.178	Porcelain	125	-40	X	-	-
	0.076 - 0.178	Urethane powder paint	125	-40	X	X	-
	0.076 - 0.178	Nylon - Polyamide	80	-40	X	X	-
	0.076 - 0.178	Polyphenylene oxide/ether	80	-40	X	X	-
	0.076 - 0.178	Polypropylene	80	-40	X	X	-
	0.076 - 0.178	Acrylonitrile butadiene styrene	60	-40	X	X	-
	0.076 - 0.178	High density polyethylene	60	-40	X	-	-
	0.076 - 0.178	Polycarbonate	60	-40	X	X	-
	0.076 -	Low density	40	-40	X	X	-

		0.178	polyethylene					
		0.076 - 0.178	Polystyrene	40	-40	X	X	-
8135LE, 9472FL, 9472LE, 9672LE								
	Polycarbonate	0.508	Acrylic powder paint	125	-40	X	-	-
		0.508	Alkyd paint	125	-40	X	X	-
		0.508	Aluminum	125	-40	X	X	-
		0.508	Epoxy powder paint	125	-40	X	X	-
		0.508	Epoxy powder paint (textured)	125	-40	X	X	-
		0.508	Galvanized steel	125	-40	X	X	-
		0.508	Polyester powder paint	125	-40	X	X	-
		0.508	Polyester powder paint (textured)	125	-40	X	X	-
		0.508	Porcelain	125	-40	X	-	-
		0.508	Urethane powder paint	125	-40	X	X	-
		0.508	Nylon - Polyamide	80	-40	X	X	-
		0.508	Polyphenylene oxide/ether	80	-40	X	X	-
		0.508	Polypropylene	80	-40	X	X	-
		0.508	Acrylonitrile butadiene styrene	60	-40	X	X	-
		0.508	High density polyethylene	60	-40	X	-	-
		0.508	Polycarbonate	60	-40	X	X	-
		0.508	Low density polyethylene	40	-40	X	X	-
		0.508	Polystyrene	40	-40	X	X	-
9070								
	Aluminum	0.127 - 0.508	Galvanized steel	150	-40	X	X	-
		0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.127 - 0.508	Polypropylene	80	-40	X	X	-
		0.127 - 0.508	Polystyrene	60	-40	X	X	-
	Polycarbonate	0.127 - 0.254	Galvanized steel	100	-40	X	X	-
		0.127 - 0.254	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.127 - 0.254	Polypropylene	80	-40	X	X	-
		0.127 - 0.254	Polystyrene	60	-40	X	X	-
9075								
	Aluminum	0.127 - 0.508	Galvanized steel	150	-40	X	X	-
		0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.127 - 0.508	Polypropylene	80	-40	X	X	-
		0.127 - 0.508	Polystyrene	60	-40	X	X	-
	Polycarbonate	0.127 - 0.254	Galvanized steel	100	-40	X	X	-

	0.127 - 0.254	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.127 - 0.254	Polypropylene	60	-40	X	X	-
	0.127 - 0.254	Polystyrene	60	-40	X	X	-
9252							
Aluminum	0.127 - 0.508	Galvanized steel	150	-40	X	X	-
	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.127 - 0.508	Polypropylene	80	-40	X	X	-
	0.127 - 0.508	Polystyrene	60	-40	X	X	-
Polycarbonate	0.127 - 0.254	Galvanized steel	100	-40	X	X	-
	0.127 - 0.254	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.127 - 0.254	Polypropylene	80	-40	X	X	-
	0.127 - 0.254	Polystyrene	60	-40	X	X	-
9394							
Aluminum	0.203 - 0.508	Aluminum	150	-40	X	X	-
	0.203 - 0.508	Galvanized steel	150	-40	X	X	-
	0.203 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.203 - 0.508	Polypropylene	80	-40	X	X	-
	0.203 - 0.508	Polystyrene	60	-40	X	X	-
Polycarbonate	0.508 - 1.981	Aluminum	100	-40	X	X	-
	0.508 - 1.981	Galvanized steel	100	-40	X	X	-
	0.508 - 1.981	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.508 - 1.981	Polypropylene	80	-40	X	X	-
	0.508 - 1.981	Polystyrene	60	-40	X	X	-
9770, 9692, 9774, 9774HL, 9695, 9786 Double Coated Tape							
Aluminum	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.178 - 0.508	Polypropylene	80	-29	X	X	-
	0.051 - 0.813	Polypropylene	80	-29	X	X	-
	0.178 - 0.508	Polycarbonate	60	-40	X	X	-
	0.051 - 0.813	Polycarbonate	60	-40	X	X	-
Polycarbonate	0.178 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	-
Polyester	0.025 - 0.127	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.025 -	Polypropylene	80	-29	X	X	-

		0.127						
		0.025 - 0.127	Polycarbonate	60	-40	X	X	-
EAD-718								
	Aluminum	0.051 - 0.813	Aluminum	175	-40	X	X	-
		- 0.813	Aluminum	175	-40	X	X	-
		0.051 - 0.813	Galvanized steel	175	-40	X	X	-
		0.051 - 0.813	Porcelain	175	-40	X	X	-
		0.051 - 0.813	Stainless steel	175	-40	X	X	-
		0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	80	-40	X	X	-
		0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
"Scotch TM Double Coated Tape".								
926, 9442, 9445, 9482PC, 9485PC, 9485EK, 9675								
	Aluminum	0.051 - 0.813	Acrylic paint	150	-40	X	X	-
		0.051 - 0.813	Acrylic powder paint	150	-40	X	X	-
		0.051 - 0.813	Alkyd paint	150	-40	X	X	-
		0.051 - 0.813	Aluminum	150	-40	X	X	-
		0.051 - 0.813	Epoxy paint	150	-40	X	X	-
		0.051 - 0.813	Epoxy powder paint (textured)	150	-40	X	X	-
		0.051 - 0.813	Epoxy powder paint	150	-40	X	X	-
		0.051 - 0.813	Galvanized steel	150	-40	X	X	-
		0.051 - 0.813	Polyester paint	150	-40	X	X	-
		0.051 - 0.813	Polyester powder paint	150	-40	X	X	-
		0.051 - 0.813	Polyester powder paint (textured)	150	-40	X	X	-
		0.051 - 0.813	Porcelain	150	-40	X	X	-
		0.051 - 0.813	Stainless steel	150	-40	X	X	-
		0.051 - 0.813	Urethane powder paint	150	-40	X	X	-
		0.051 - 0.813	Nylon - Polyamide	100	-	X	-	-
		0.051 - 0.813	Phenolic - Phenol Formaldehyde	100	-40	X	X	-
		0.051 - 0.813	Polycarbonate	100	-	X	-	-
		0.051 - 0.813	Urethane powder paint (textured)	100	-40	X	X	-
		0.051 - 0.813	Urethane powder paint	100	-40	X	X	-

	0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
	0.051 - 0.813	Polyphenylene oxide/ether	80	-40	X	X	-
	0.051 - 0.813	Polypropylene	80	-40	X	X	-
	0.051 - 0.813	Polystyrene	80	-40	X	X	-
9626							
Aluminum	0.051 - 0.812	Aluminum	150	-40	X	X	C,O,DL,DD
	0.051 - 0.812	Epoxy powder paint	150	-40	X	X	O, DL,DD
	0.051 - 0.812	Stainless steel	150	-40	X	X	C,O
Polycarbonate	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	O, DL,DD
	0.127 - 0.508	Aluminum	80	-40	X	-	O, DL,DD
	0.127 - 0.508	Polycarbonate	80	-40	X	X	O
	0.127 - 0.508	Polypropylene	60	-40	X	-	O, DL,DD
9627							
Aluminum	0.051 - 0.812	Aluminum	150	-40	X	X	C,O,DL,DD
	0.051 - 0.812	Epoxy powder paint	150	-40	X	X	O, DL,DD
	0.051 - 0.812	Stainless steel	150	-40	X	X	C,O
Polycarbonate	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	O, DL,DD
	0.127 - 0.508	Aluminum	80	-40	X	X	O, DL,DD
	0.127 - 0.508	Polycarbonate	80	-40	X	X	O
	0.127 - 0.508	Polypropylene	80	-40	X	X	O, DL,DD
9628B, 9628FL							
Aluminum	0.051 - 0.812	Aluminum	150	-40	X	X	C,O,DL,DD
	0.051 - 0.812	Epoxy powder paint	150	-40	X	X	O, DL,DD
	0.051 - 0.812	Stainless steel	150	-40	X	X	C,O
Polycarbonate	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	O, DL,DD
	0.127 - 0.508	Aluminum	80	-40	X	X	O, DL,DD
	0.127 - 0.508	Polycarbonate	80	-40	X	X	O
9629B, 9629FL, 9629PC, EAD-700							
Aluminum	0.051 - 0.812	Aluminum	150	-40	X	X	C,O,DL,DD
	0.051 - 0.812	Epoxy powder paint	150	-40	X	X	O, DL,DD
	0.051 - 0.812	Stainless steel	150	-40	X	X	C,O
Polycarbonate	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	X	O, DL,DD

	0.127 - 0.508	Aluminum	80	-40	X	X	O, DL,DD
	0.127 - 0.508	Polycarbonate	80	-40	X	X	O
	0.127 - 0.508	Polypropylene	80	-40	X	X	O, DL,DD
EAD-699							
Aluminum	0.051 - 0.812	Aluminum	150	-40	X	X	C,O,DL,DD
	0.051 - 0.812	Stainless steel	150	-40	X	X	C,O
Polycarbonate	0.127 - 0.508	Acrylonitrile butadiene styrene	80	-40	X	-	O, DL,DD
	0.127 - 0.508	Aluminum	80	-40	X	X	O, DL,DD
	0.127 - 0.508	Polycarbonate	80	-40	X	X	O
	0.127 - 0.508	Polypropylene	60	-40	X	-	DD,DL,O

Pressure-sensitive unprinted label stocks:

Model No.	Application Surface	Max Temp (°C)	Min Temp (°C)	Indoor Use	Outdoor Use	Additional Conditions
"3M Brand".						
7990MPW, 7991MOW, 7992MPW, 7993MP, 7994MP, 7995MP, 7997MP						
	Aluminum	100	-40	X	X	-
	Epoxy	100	-40	X	X	-
	Acrylonitrile butadiene styrene	80	-40	X	X	-
	Alkyd paint	80	-40	X	X	-
	Galvanized steel	80	-40	X	X	-
	Nylon - Polyamide	80	-40	X	X	-
	Polyethylene terephthalate	80	-40	X	X	-
	Polyphenylene oxide/ether	80	-40	X	X	-
	Polyurethane paint	60	-40	X	X	-
	Porcelain	60	-40	X	X	-
	Stainless steel	60	-40	X	-	-
	Polycarbonate	40	-40	X	X	-
"3M Polyester Seal Tape".						
6692						
	Aluminum	100	-	X	-	-

Solvent-activated laminating adhesives:

Model No.	Face Stock	Face Stock Thk(mm)	Application Surface	Max Temp (°C)	Min Temp (°C)	Indoor Use	Outdoor Use	Additional Conditions
"3M® Laminating Adhesive".								
#583								
	Aluminum	0.051 - 0.813	Alkyd paint	100	-40	X	X	-
		0.051 - 0.813	Aluminum	100	-40	X	X	-
		0.051 - 0.813	Galvanized steel	100	-40	X	X	-
		0.051 - 0.813	Porcelain	100	-40	X	X	-
		0.051 - 0.813	Stainless steel	100	-40	X	X	-

0.051 - 0.813	Acrylonitrile butadiene styrene	80	-40	X	X	-
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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.

C - Occasional exposure to Cooking Oil (room temp).

DL - Occasional exposure to Laundry Detergents.

DD - Occasional exposure to Dishwashing Detergents.

O - Occasional exposure to Lubricating Oil.

\$ - With 3M® Y110 release solution, proprietary ink and 3M® Laminating Adhesive 9452 for use in producing subsurface printed labels

& - With 3M® Y110 release solution, proprietary ink and 3M® Laminating Adhesive 9457, 9458 for use in producing subsurface printed labels.

@ - With 3M® Y110 release solution, proprietary ink and 3M® Laminating Adhesive 9458, 9459S for use in producing subsurface printed labels.

Marking: Company name or tradename "3M" , "STAMARK" , "Scotch" and model designation.

Last Updated on 2012-02-08

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SPECIFICATION FOR APPROVAL

DOCUMENT: A3132TS001

STYLE : COAXIAL CABLE
105°C 30V

SIZE: 32AWG×1C
BRAID : TD

RECOGNIZED: UL 1979
MEET VW-1



WONDERFUL HI-TECH CO.,LTD.

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

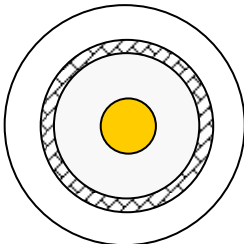
TEL : (02)22988033
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FACTORY : 17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

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: Mar/16/2005
STANDARD :		
Conductor	Size	AWG 32
	Material	---- Silver Cover Copper
	Conductors No.	---- 7
	Conductors Size	mm 0.085
	O.D.	mm 0.26
Insulation	Average Thickness	mm 0.22
	Diameter	mm 0.70 ± 0.03
	Material	---- FEP
	Color	---- Clear
Braid	Material	---- Tinned Copper
	Construction	mm 16 / 4 / 0.050
	Coverage	% 89.4
Jacket	Average Thickness	mm 0.12
	Diameter	mm 1.13 ± 0.05
	Material	---- FEP
	Color	---- According to customer
Marking	Non	
Drawing		

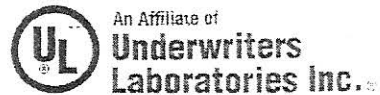


WONDERFUL HI-TECH CO., LTD.

SPECIFICATION

Electrical & Physical Properties						
Item			32AWG			
Rating Temp Voltage			105°C 30V			
Conductor Resistance			497 OHM/KM/20°C MAX.			
Insulation Resistance			3000 MEGA OHM-KM MIN.			
Dielectric Strength			AC 1000 V/Minute			
Spark Test			2 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			96 ± 3 pF/m			
Nom. Vel. of Prop.			69%			
Storage Temperature			-40°C ~+80°C			
VSWR Test (0 – 6 GHZ)			Max 1.3			
Flame Test			VW-1 OK			
Attenuation (dB/1m)		2.0GHZ	2.4GHZ	2.5GHZ	5.0GHZ	6.0 GHZ
		2.90	3.20	3.28	5.05	5.40

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MR S N WONG
WONDERFUL HI-TECH CO LTD
CHUNG LI INDUSTRIAL PARK
17 PEI YUAN RD
CHUNG-LI, FU SHING LEE
TAOYUAN HSIEN TAIWAN

Date: 2003/09/22
Subscriber: 699947002
File No: E77981
Project No: 03CA21293
PD No: 03015304
Type: L
PO Number: S WONG

Subject: Procedure And/Or Report Material

The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
1981/04/09	1	1	Revised Title of Authorized Styles H, J	2003/09/18
1981/04/09	1	1	New Facing Pages 1745, 1979	2003/09/18

Inspections at your plant will be conducted under the supervision of Mr. Hank Su, Field Supervisor, 4th Fl. 260 Da-Yeh Road, Pei Tou District, Taipei 112 Taiwan, PHONE: 886 2 28938008 ext. 108, FAX: 886 2 28978628.

Marks as needed may be obtained from: UL International Service Ltd., 4th Fl., 260 Da-Yeh Road, Peitou, Taipei City, Taiwan 112, PHONE: 886 2 28967790, FAX: 886 2 28917644, ATTN: Iris Tseng.

Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

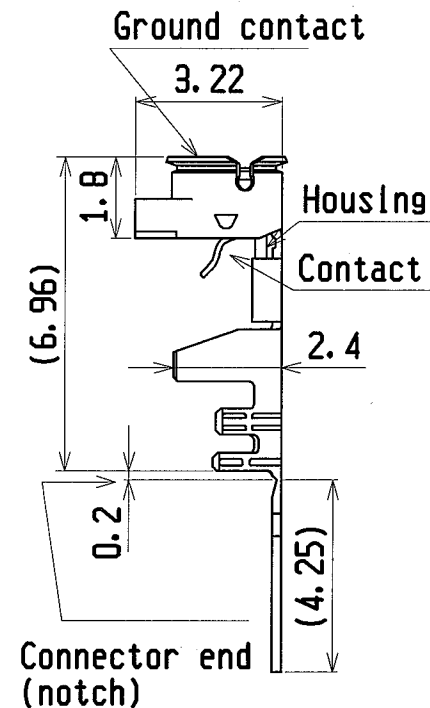
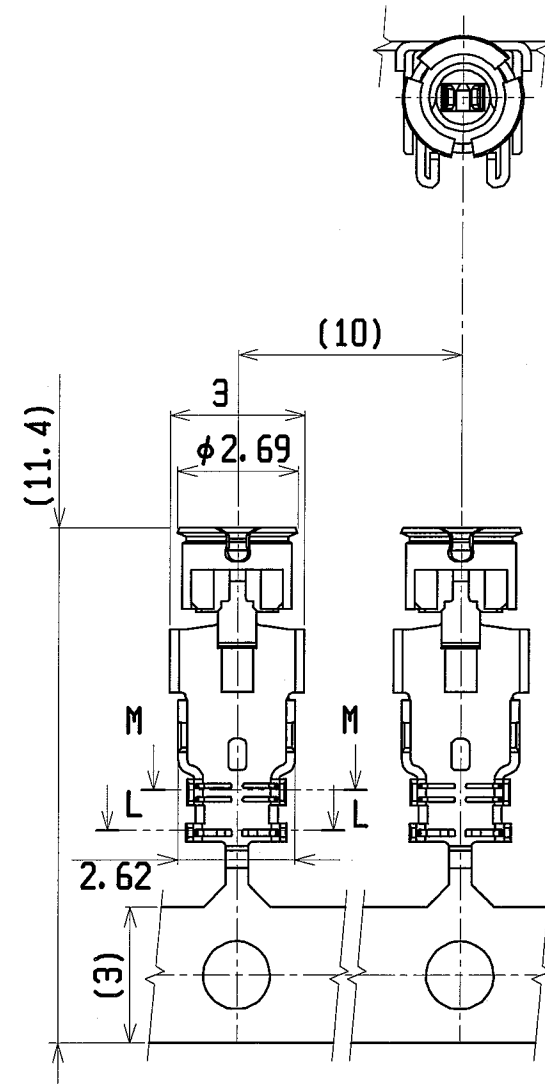
NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

Please review this material and report any inaccuracies to LAURA CHANG (886-2-2896-7790), referring to the above Project and/or PD Numbers.

c: TPI File

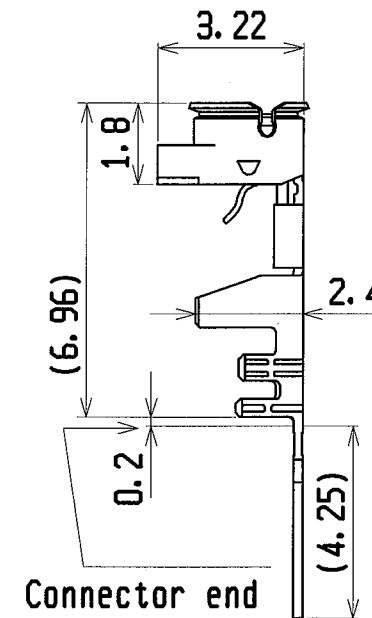
UL INSPECTION CENTER 408

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



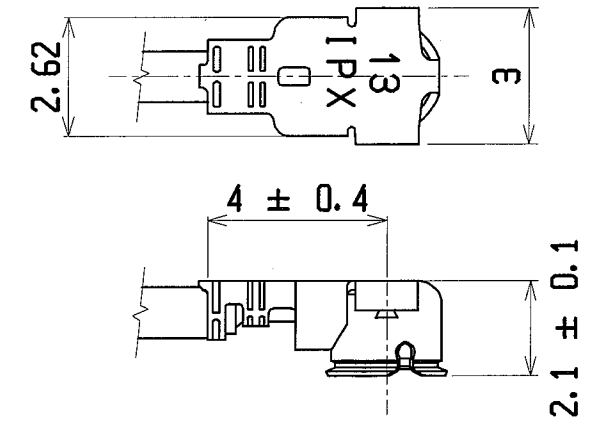
Part No. 20278-101R-08
20278-102R-08
20278-101R-13
20278-102R-13
20278-101R-32
20278-102R-32

For hand tool
(with notch)



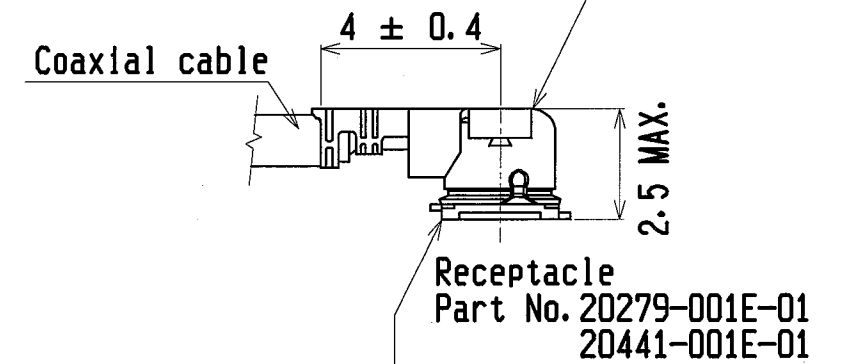
Part No. 20278-111R-08
20278-112R-08
20278-111R-13
20278-112R-13
20278-111R-32
20278-112R-32

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



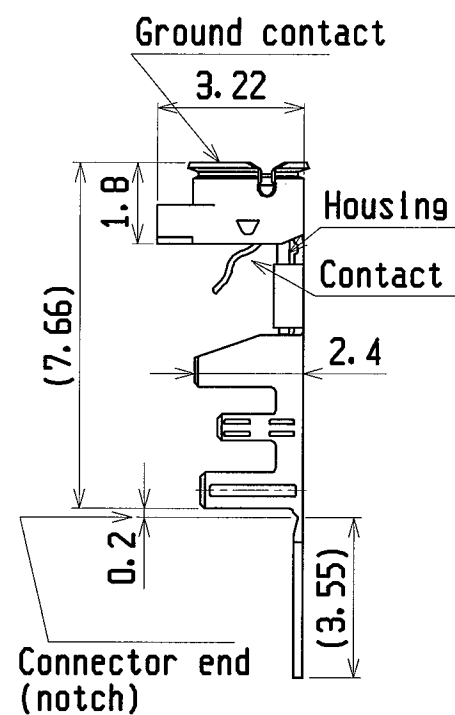
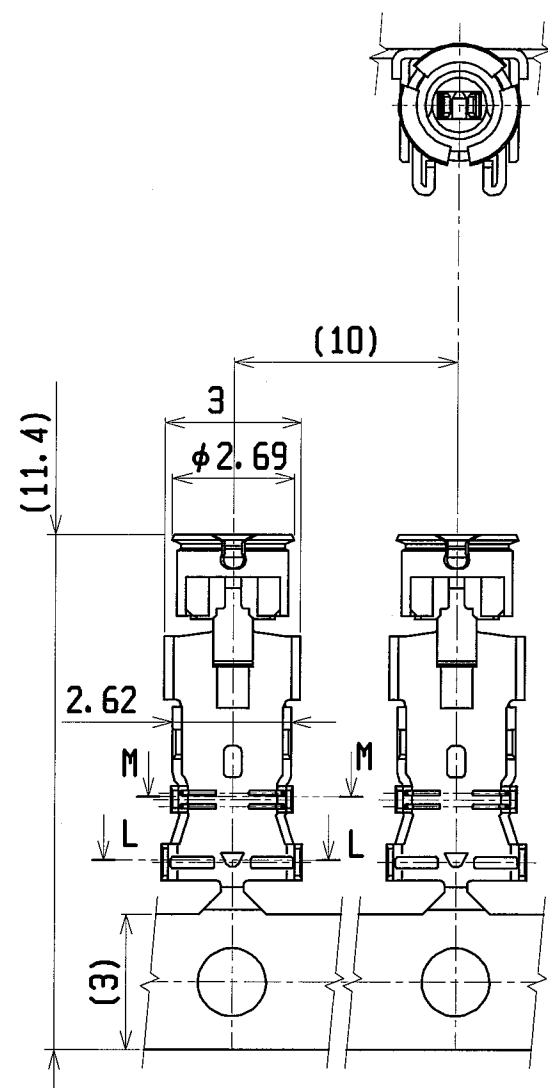
MATING

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

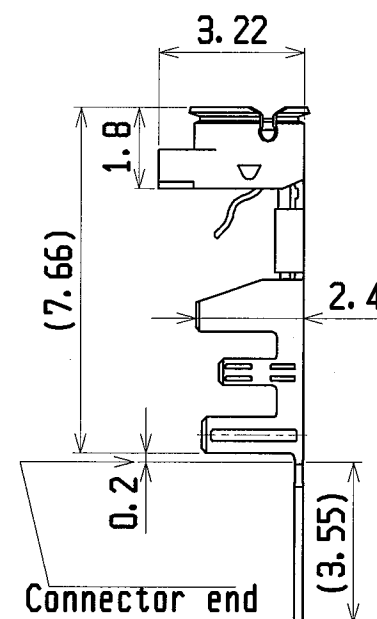
GENERAL TOLERANCE		
6 MAX.	±0.2	
6 OVER MAX. 30	±0.3	
30 OVER MAX. 120	±0.5	
ANGLE	±2°	

19C	Z08056	K.O	Feb/04/08	EK	DESIGN'D BY	DATE	I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN	
18C	Z07346	K.O	Jul/10/08	E.K	K. Ohbayashi	JUN/13/01		
17C	Z05233	K.O	May/18/05	T.H	CHK'D BY	DATE	TITLE MHF series micro coaxial connector plug vertical (ground contact : gold plating)	
16C	Z05024	K.O	Jan/20/05	T.H				
15C	Z04398	K.O	Nov/12/04	T.H	APP'D BY	DATE	General	
REV	ECN	BY	DATE	APP	K. Katabuchi	JUN/13/01		
REV. RECORD					CUSTOMER	PROJECTION	SCALE	UNIT
SERIES No. 2814					COPY	①	6/1	mm
							DWG. No.	SHEET
							20278	REV.
								1/4 19C

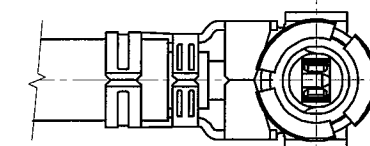
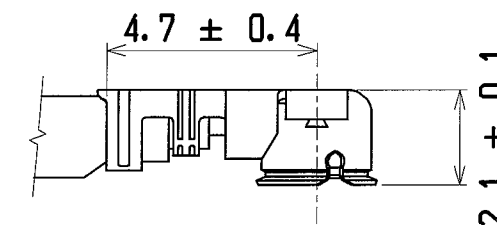
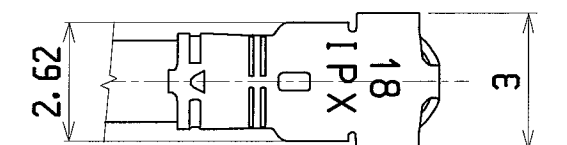
PART NO.
20278-***R-**



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

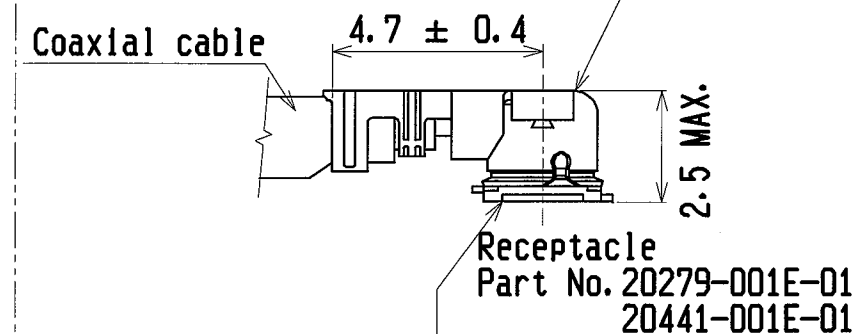


Part No. 20278-111R-18
20278-112R-18
For semi auto
termination machine
(without notch)



Cable Ass'y

Plug
P/N 20278-1**R-18



MATING

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

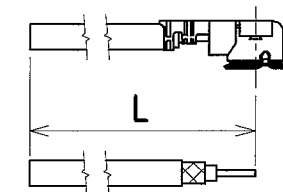
<table border="1"> <tr> <td>REV</td><td>ECN</td><td>BY</td><td>DATE</td><td>APP</td></tr> <tr> <td colspan="5">REV. RECORD</td></tr> <tr> <td colspan="2">SERIES No.</td><td colspan="3">2814</td></tr> </table>					REV	ECN	BY	DATE	APP	REV. RECORD					SERIES No.		2814			DESIGN'D BY		DATE	
					REV	ECN	BY	DATE	APP														
					REV. RECORD																		
					SERIES No.		2814																
CHK'D BY		DATE																					
APP'D BY		DATE																					
CUSTOMER COPY					PROJECTION		SCALE		UNIT		DWG. No.		SHEET		REV.								
					6/1		mm		20278		2/4		19C										

I-PEX Interconnect
and Packaging Electronics
TOKYO, JAPAN

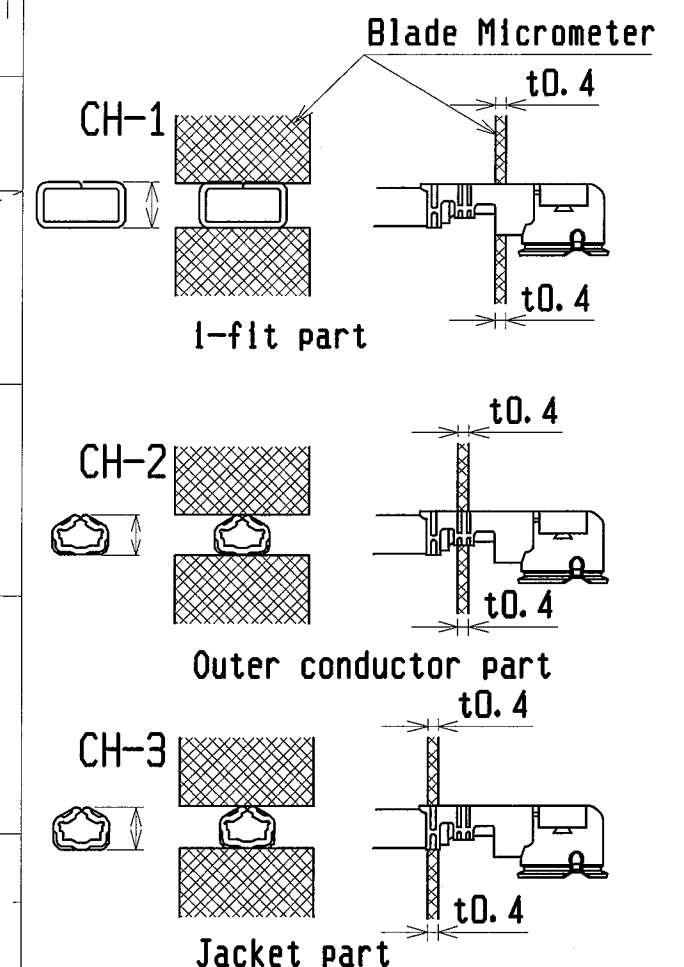
TITLE
MHF series micro coaxial connector plug
vertical (ground contact : gold plating)
General

Part No. of non halogen free type		20278-101R-08 20278-111R-08	20278-101R-13 20278-111R-13	20278-101R-32 20278-111R-32	20278-101R-18 20278-111R-18
Part No. of halogen free type		20278-102R-08 20278-112R-08	20278-102R-13 20278-112R-13	20278-102R-32 20278-112R-32	20278-102R-18 20278-112R-18
Housing color		White	Black	Black	White
Applicable cable nominal dimension					
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 semi 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	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

Cable cut length



Crimp Height



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.

REV ECN BY DATE APP REV. RECORD SERIES No. 2814 DESIGN'D BY DATE CHK'D BY DATE APP'D BY DATE CUSTOMER COPY PROJECTION					I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN			
							TITLE	
							MHF series micro coaxial connector plug vertical (ground contact : gold plating)	
							General	
SCALE UNIT DWG. No. -/- mm 20278 SHEET REV. 3/4 19C								

Notes

1. Material

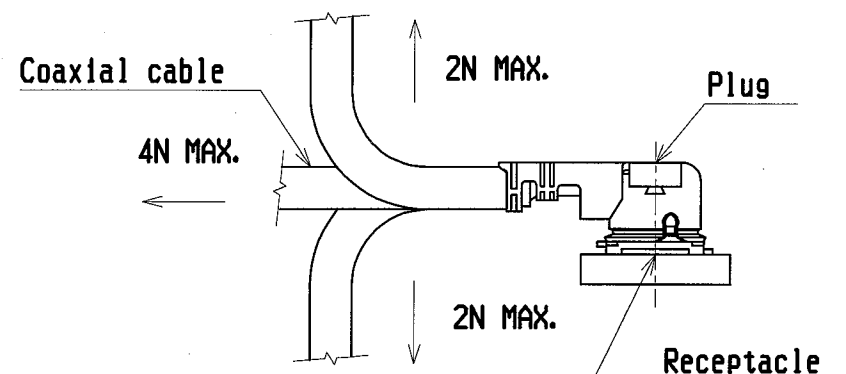
- (1) Housing : PBT , UL94V-0
- (2) Contact
phosphor bronze
gold plating 0.1 μ m MIN.
over nickel 1.27 μ m MIN.
- (3) Ground contact
phosphor bronze
gold plating 0.05 μ m MIN.
over nickel 1.27 μ m MIN.

2. Packing : reel

3. Mating partner part No.

: 20279-001E-01, 20441-001E-01

4. 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.

1. 材料

- (1) ハウジング : PBT, UL94V-0
- (2) コンタクト
りん青銅
金メッキ0.1 μ m MIN.
下地 ニッケル1.27 μ m MIN.
- (3) グランドコンタクト
りん青銅
金メッキ0.05 μ m MIN.
下地 ニッケル1.27 μ m MIN.

2. 梱包 : リール

3. かん合相手 part No.

: 20279-001E-01, 20441-001E-01

4. コネクタかん合後のケーブルに対する荷重

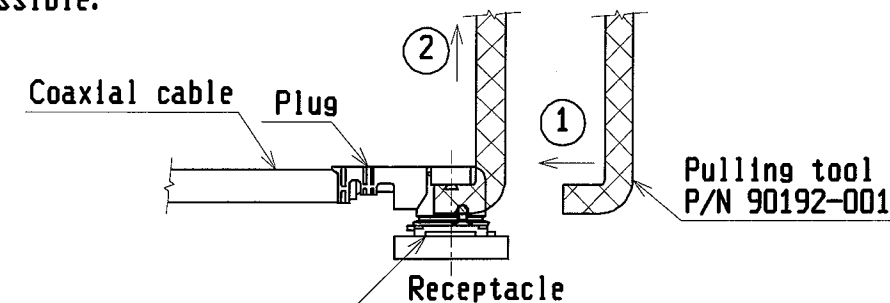
5. コネクタかん合時および抜去時の注意

5-1 コネクタ挿入時

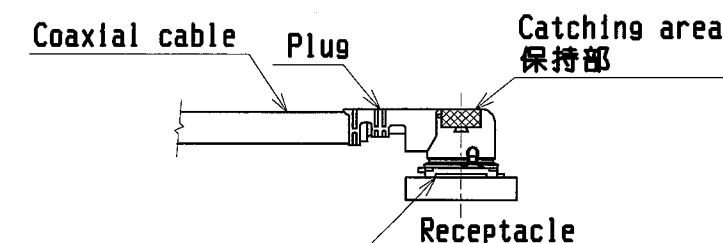
PlugとReceptacleのかん合軸を合わせ、できるだけ垂直に挿入して下さい。極端な斜め挿入は行わないで下さい。コネクタ破損の原因となりますので、過度なこじり挿抜は行わないで下さい。

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
(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.

5-2 コネクタ抜去時

- (1) 抜去ジグを用いる場合
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
下図の保持部をつかみ、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規定
: 外部導体トータル本数の10%以下
(外部導体パレルの外にはみ出し量)

5-4 熱収縮チューブについての注意

熱収縮チューブで外部導体を覆う場合は、導通不良の原因となりますので、熱によりハウジングを溶融させないよう注意してください。

6. 本コネクタは'Pb-free'である

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

					DESIGN' D BY		DATE		I-PEX Interconnect and Packaging Electronics TOKYO, JAPAN					
					CHK' D BY		DATE							
					APP' D BY		DATE							
REV	ECN	BY	DATE	APP	TITLE						General			
					MF series micro coaxial connector plug vertical (ground contact : gold plating)									
REV. RECORD					CUSTOMER COPY		PROJECTION		SCALE	UNIT	DWG. No.		SHEET	REV.
SERIES No.		2814							-/-	mm	20278		4/4	19C

XFR 4840 GF10 (w), 310NF (w) - PLASTICS - COMPONENT

PLASTICS - COMPONENT

File Number: E213445

Yellow Card® 

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		
0.75 mm, Color: ALL	V-0	ANSI/UL 94, IEC 60695-11-10
1.5 mm, Color: ALL	V-0	ANSI/UL 94, IEC 60695-11-10
3.0 mm, Color: ALL	5VA V-0	ANSI/UL 94
3.0 mm, Color: ALL	V-0	IEC 60695-11-10
3.0, 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	

Report Date: 2006-07-24
Revision Date: 2012-11-27

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RoHS REPORT INDEX

	NAME	供應商	RoHS report
1	FPC	SHANDONG GOLDING ELECTRONICS MATERIAL CO.,LTD .	TAOEC2107771001
2	背膠	3M CHINA LIMITED .	ETR20C05995
3	Cable		
3-1	外被	WONDERFUL HI-TECH CO., LTD.	TWNC01046253
3-2	金屬線	WONDERFUL HI-TECH CO., LTD.	TWNC01046255
3-3	FEP	大金氟化工(中國)有限公司.	SHAEC212717850313234567
4	IPEX		
4-1	HOUSING	POLYPLASTICS TAIWAN CO.,LTD.	EKR21402246
4-2	CONTACT	HARADA METAL INDUSTRY CO., LTD.	ETR21803361M01
4-3	GROUND CONTACT	HARADA METAL INDUSTRY CO., LTD.	ETR21803360M01



中国认可
国际互认
检测
TESTING
CNAS L0604

Test Report

No. TAOEC2107771001

Date: 07 Jan 2022

Page 1 of 8

SHANDONG GOLDING ELECTRONICS MATERIAL CO.,LTD

SOUTH OF KEJI ROAD, HI-TECH DEVELOPMENT ZONE, GANGCHENG DISTRICT, JINAN CITY,
SHANDONG PROVINCE

The following sample(s) was/were submitted and identified on behalf of the clients as : FCCL

SGS Job No. : QP21-005027 - QD
Client Ref. Information : GHD,GHS
Date of Sample Received : 30 Dec 2021
Testing Period : 30 Dec 2021 - 07 Jan 2022
Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).
Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP) , Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) , and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Qingdao) Co., Ltd.

Wang Bo, Claire
Approved Signatory

scan to see the report



92F799C9



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t (86-532) 68999888

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sgs.china@sgs.com

Member of the SGS Group (SGS SA)

Test Report

No. TAOEC2107771001

Date: 07 Jan 2022

Page 2 of 8

Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	TAO21-077710.001	coppery board

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-5:2013, IEC 62321-4:2013+AMD1:2017, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	001
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	8	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND



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Test Report

No. TAOEC2107771001

Date: 07 Jan 2022

Page 3 of 8

Test Item(s)	Limit	Unit	MDL	001
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series
https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.



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Test Report

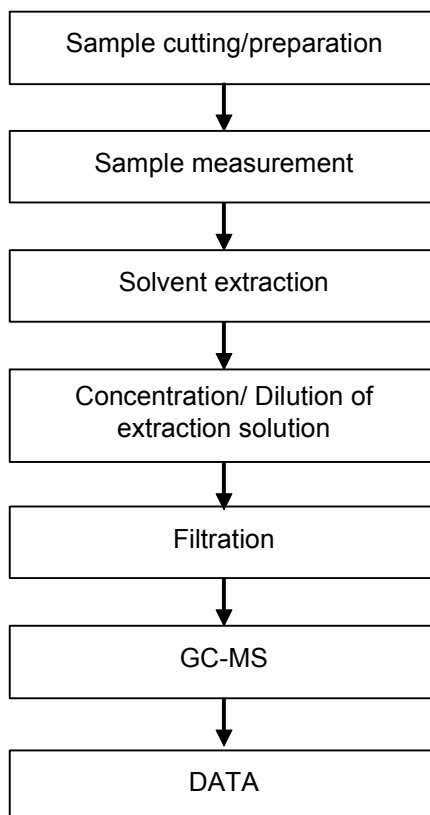
No. TAOEC2107771001

Date: 07 Jan 2022

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ATTACHMENTS

PBBs/PBDEs Testing Flow Chart



Test Report

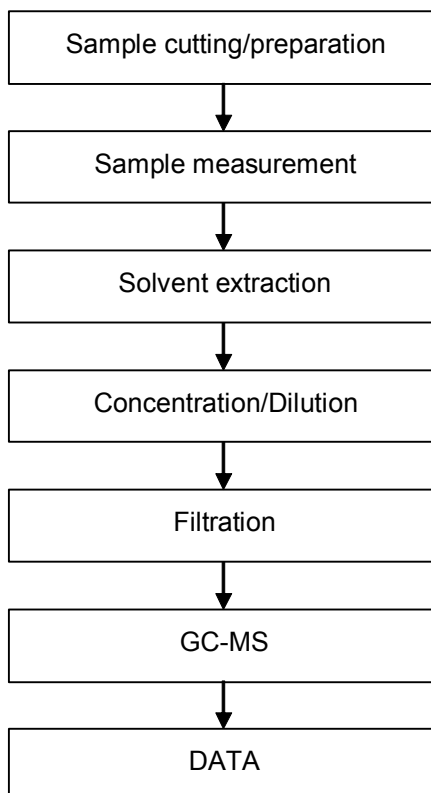
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Date: 07 Jan 2022

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ATTACHMENTS

Phthalates Testing Flow Chart



Test Report

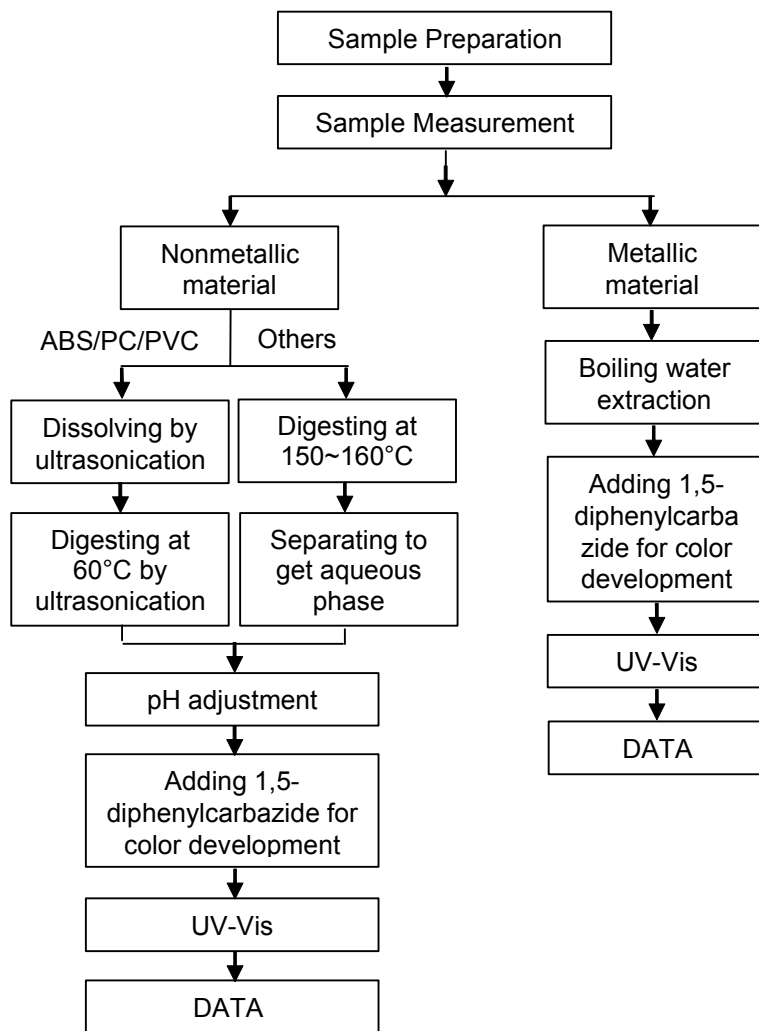
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ATTACHMENTS

Hexavalent Chromium (Cr(VI)) Testing Flow Chart



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Elements (IEC62321) Testing Flow Chart

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.

