

產品特點

- 耐陽離子遷移性能
- 良好的電性能，耐化學性能及耐熱性能
- 通過 UV 型阻焊劑，可雙面同時曝光增加產量
- 成型加工性与 MTC-97 相似

Features

- CAF resistance
- Excellent electrical, chemical and heat resistance properties
- General UV Solder mask may be applied simultaneously to both sides increasing productivity
- Processability is similar to MTC-97

名稱說明 Designation Introduction

MTC-97(CF)	單雙面板及多層線路板用芯板 Single or double side PCB and thin core for multi-layer PCB	ANSI 等級: FR-4 ANSI grade: FR-4
MPP-97(CF)	多層線路板用半固化片 Prepreg for multi-layer PCB	

Performance List for Laminate (Specification sheet IPC-4101/21)

Characteristic		Unit	Condition	Typical Values	SPEC.
Volume Resistivity		MΩ-cm	C-96/35/90	6.3×10 ⁸	≥ 10 ⁶
Surface Resistivity		MΩ	C-96/35/90	1.5×10 ⁷	≥ 10 ⁴
Permittivity (RC42.5%)	At 1MHz	-	C-24/23/50	4.67	≤ 5.4
Loss Tangent (RC42.5%)	At 1MHz	-	C-24/23/50	0.0145	≤ 0.035
Arc Resistance		Sec	D-48/50+D-0.5/23	120	≥ 60
Dielectric Breakdown		KV	D-48/50	40	≥ 40
Moisture Absorption		%	D-24/23	0.150	≤ 0.8
Flammability		-	C-24/23/50+E-24/125	94 V-0	94 V-0
Peel Strength (HTE 1OZ)		Lb/in(N/mm)	After thermal stress 288°C×10Sec solder floating	11(1.93)	≥ 6(1.05)
Thermal Stress Test		-	288°C×10Sec×6cycle floating	Pass	Pass
Flexural Strength	LW	N/mm ²	A	679	≥ 415
	CW	N/mm ²	A	624	≥ 345
CTE-X		PPM/°C	TMA	16	-
CTE-Y		PPM/°C		18	-
Z-Axis CTE	Alpha 1	PPM/°C	TMA	55	-
	Alpha 2	PPM/°C		300	-
Z-Axis CTE (50~260°C)		%		4.5	-
Time to Delaminate (Copper removed)	T260	Min	TMA	10	-
Td (5% Weight loss)		°C	TGA	305	-
Glass Transition Temperature		°C	DSC	141	140±5

注:測試樣品規格為 62mil 1/1(無特殊說明情況下).

Note: Test sample is 62mil 1/1(without special remark).

半固化片性能表 Performance List for prepreg

Nominal thickness (mm)	Glass Style	Resin Content (%)	Resin Flow (%)	Gel Time (sec)	Volatile Content (%)	Scaled Flow Thickness (per ply)	
						mm	mil
0.20	7628	52 ± 3	34 ± 5	140±20	≤ 0.75	0.170±0.013	6.7 ± 0.5
0.20	7628	50 ± 3	31 ± 5			0.168±0.013	6.6 ± 0.5
0.20	7628	48 ± 3	30 ± 5			0.165±0.013	6.5 ± 0.5
0.20	7628	43 ± 3	22 ± 5			0.160±0.013	6.3 ± 0.5
0.15	1506	50 ± 3	30 ± 5			0.147±0.010	5.8 ± 0.4
0.10	2116	53 ± 3	33 ± 5			0.102±0.010	4.0 ± 0.4
0.10	2116	50 ± 3	29 ± 5			0.097±0.010	3.8 ± 0.4
0.10	2116	48 ± 3	27 ± 5			0.094±0.010	3.7 ± 0.4
0.06	1080	61 ± 3	39 ± 5			0.058±0.010	2.3 ± 0.4
0.03	106	68 ± 3	43 ± 5			0.046±0.010	1.8 ± 0.4

注:針對客戶要求,我司可提供特殊的規格.

Note: Grace can provide special specifications to meet customers' requirement.

半固化片儲存要求 Prepreg Storage Requirement

IPC-4101 3.17

儲存條件 1: 從生產日期起在低於 5°C 環境中保存 6 個月

Condition 1: Six months when stored at <5°C

儲存條件 2 : <23°C, <50%RH 3 個月

Condition 2: Three months when stored at <23°C and <50 % RH

注:

1. PP 必須避免儲存在接觸 UV 光和有輻射的外部環境
2. PP 超過儲存期, 當使用時必須重新測試各項物性, 確認合格方可使用。

Note:

1. Prepreg should be stored in the absence of a catalytic environment such as UV light or excessive radiation.
2. Prepreg exceeding the shelf life requirements prior to shipment to the user must be retested and recertified to agree upon specifications.

建議壓合參數 Recommended Press Parameter

1. 材料實際溫度為 90~130°C 升溫速率建議:
低升溫速率:1.2~2.5°C/min,高壓壓力:350~400psi
高升溫速率:3.2~5.5°C/min,高壓壓力:250~300psi
2. 材料實際溫度升至 170°C 后,需保持 40 分鐘以上,使環氧樹脂固化完全
3. 冷卻過程中材料溫度高于 100°C 時,降溫速率建議控制在 1.5°C/min 以下以避免引起板翹
注:以上設定僅供參考,具體程式須依熱壓機及排版狀況作相應調整.

1. Heating rate suggestions when material temperature range is 90~130°C
Heating rate: 1.2~2.5°C/min for 350~400psi pressure
Heating rate: 3.2~5.5°C/min for 250~300psi pressure
2. Temperature of material reach 170°C must is held for at least 40min to allow epoxy resin to cure fully.
3. In order to avoid warpage and twist issue, cooling rate of material suggest to be kept under 1.5°C/min, when the temperature of material is still above 100°C

Note: All values mentioned above are just for reference, clients can modify relative parameters according to the machines and designs.