

## 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

## Designation Introduction

MTC-97(CF)	Single or double side PCB and thin core for multi-layer PCB	ANSI grade: FR-4
MPP-97(CF)	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	$6.3 \times 10^8$	$\geq 10^6$
Surface Resistivity		MΩ	C-96/35/90	$1.5 \times 10^7$	$\geq 10^4$
Permittivity (RC42.5%)	At 1MHz	-	C-24/23/50	4.67	$\leq 5.4$
Loss Tangent (RC42.5%)	At 1MHz	-	C-24/23/50	0.0145	$\leq 0.035$
Arc Resistance		Sec	D-48/50+D-0.5/23	120	$\geq 60$
Dielectric Breakdown		KV	D-48/50	40	$\geq 40$
Moisture Absorption		%	D-24/23	0.150	$\leq 0.8$
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(1.58)	$\geq 6(1.05)$
Thermal Stress Test		-	288°C × 10Sec × 6cycle floating	Pass	Pass
Flexural Strength	LW	N/mm <sup>2</sup>	A	679	$\geq 415$
	CW	N/mm <sup>2</sup>	A	624	$\geq 345$
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

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

## 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
0.2	7628	52 ± 3	34 ± 5	140±20	≤ 0.75	0.170±0.013	6.7 ± 0.5
0.2	7628	50 ± 3	31 ± 5			0.168±0.013	6.6 ± 0.5
0.2	7628	48 ± 3	30 ± 5			0.165±0.013	6.5 ± 0.5
0.2	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
0.1	2116	53 ± 3	33 ± 5			0.102±0.010	4.0 ± 0.4
0.1	2116	50 ± 3	29 ± 5			0.097±0.010	3.8 ± 0.4
0.1	2116	48 ± 3	27 ± 5			0.094±0.010	3.7 ± 0.4
0.05	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

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

## Prepreg Storage Requirement

IPC-4101 3.17

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

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

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.

## Recommended Press Parameter

1. Heating rate suggestions when material temperature range is 90~130°C  
Heating rate: 1.2~2.5°C/min for 350~400psi pressure (24.1~27.6 Bar)  
Heating rate: 3.2~5.5°C/min for 250~300psi pressure (17.2~20.7 Bar)
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.