

SM730-4

SM730-4 Laminate

SM730B-4 Prepreg

(IPC-4101C/21)

UL FILE : E199230

updated : A Version 03/07/2011

General Specification:

Thickness		Copper Cladding		Standard Size		Special large (on Request)	
<u>inch</u>	<u>(mm)</u>	<u>oz</u>	<u>(μm)</u>	<u>inch</u>	<u>(mm)</u>	<u>inch</u>	<u>(mm)</u>
0.003	(0.08)	3/8	(12)	36.8 x 48.8	(935 x 1240)	37.0 x 49.0	(941 x 1246)
to		to		40.8 x 48.8	(1035 x 1240)	41.0 x 49.0	(1043 x 1246)
0.125	(3.14)	12	(410)	42.8 x 48.8	(1085 x 1240)	43.0 x 49.0	(1093 x 1246)

Characteristics:

- Tetra-functional Epoxy
- E-woven Glass
- HTE Copper Foil

Features:

- UV Blocking and AOI Performance
- Excellent dimensional stability and thickness uniformity
- Superior thermal and chemical resistance
- Excellent electrical and mechanical properties
- $T_g \geq 135 \pm 5^\circ\text{C}$ (DSC)

Applications:

- Computer & Peripheral
- Communications Telecom
- Consumer Electronics
- Instrumentation / Industry / Medical
- OA Equipment / printer etc

Remarks : Not recommended for Lead-free process.

SM730-4 Laminate Properties:

Based on 1.6 mm^t, 1/1

Test Items		Units Metric (English)	Test Condition	IPC Spec.	Typical Value	Test Method
						IPC-TM-650
Electrical	Dielectric Constant (1MHz)	---	C-96/23/50	< 5.4	4.4 - 4.8	2.5.5
	Loss Tangent (1MHz)	---	C-96/23/50	< 0.035	0.018 - 0.025	2.5.5
	Volume Resistivity	MΩ -cm	C-96/23/50	> 10 ⁶	> 10 ⁷	2.5.17.1
	Surface Resistivity	MΩ	C-96/23/50	> 10 ⁴	> 10 ⁶	2.5.17.1
Physical	Warp & Twist	%	—	< 1.0	< 0.5	2.4.4
	Moisture absorption	%	E-24/50+d-24/23	< 0.8	< 0.15	2.6.2.1
	Peel strength	N / mm (1b/in)	As Received	0.7 (4.0)	1.75 – 2.10 (10 – 12)	2.4.8
			After Solder	0.7 (4.0)	1.40 -1.75 (8 – 10)	2.4.8
Thermal	Glass Transition Temp	°C	TMA	By DSC > 110	124 - 130	2.4.24
			DSC		130 - 136	2.4.25
	CTE (Z axis)	ppm/°C	> Tg	—	> 300	2.4.24
	Thermal stress	sec	288°C Solder	> 10	> 120	2.4.13.1
	Flammability	---	A	UL 94 V-0	Min 94 V-0	UL 94 V-0

※Specification Sheet : IPC-4101C/21

SM730B -4 Prepreg Parameters :

	<u>7628</u>	<u>2116</u>	<u>1080</u>
R/C : Resin Content (%)	42 ± 3	53 ± 3	62 ± 4
R/F : Resin Flow (%)	18 ± 5	30 ± 5	34 ± 5
P/G : Gel Time (sec)	130 ± 20	130 ± 20	130 ± 20
After Pressed Thickness (mil)	7.0 ± 0.5	5.0 ± 0.5	3.0 ± 0.4
VC : Volatile Content (%)	Max 1.0	Max 1.0	Max 1.0

* Other fabric types are available upon request.

* Above value can be adjusted to fit customer's processing condition.

Storage and Shelf Life:

Storage condition

20 ± 2°C , 50 ± 10%RH // Refrigeration

5 ± 2°C , 50 ± 10%RH // Frozen

Shelf life

< 3 months

< 6 months

- Excessive humidity will result in high press flow & possible quality defects.

SM730-4 Prepreg Recommended Press Cycle:

● Temperature Profile:

Heating Rise:

Heating rate of material between 60°C and 140°C, 1 – 3°C/min. is acceptable, 1.5 – 2.5°C/min. would be better.

Curing Window:

> 170°C/35 min.

Cooling Down:

Hold cooling rate to less than 2.5°C/min down to below 120°C to minimize the accumulated stress, then cool down to 45°C as fast as possible.

● Pressure Profile:

Load press hot, close quickly, use kiss pressure 8 – 12 Kg/cm² for 15 – 20 minutes then apply full pressure 15 - 25 Kg/cm² (laminating pressure).

Increase pressure by 10% for non-vacuum press system.

● Vacuum:

Min. 70 mmHg

