

## Технологические параметры FR-4

### Features

- UVB and AOI (automatic optical inspection) compatible, so as to increase productivity and accuracy.
- Excellent heat resistance and mechanical properties
- IPC-4101B/21 specification is applicable.

### General Properties

Test Item	Unit	Test Method (IPC-TM-650)	Test Condition	Specification (IPC-4101B)	Typical Value
Peel Strength (1 oz.)	N/mm	2.4.8	125 C	>0.70	1.70
			Float 288 C / 10 Sec	>1.05	1.75
Thermal Stress	Sec	2.4.13.1	Float288C/unetched	>10	180
Bow / Twist	%	2.4.22.1	A	< 1.0	0.17 / 0.35
Flexural Strength	N/mm <sup>2</sup>	2.4.4	Warp	>415	565
			Fill	>345	416
Flammability	Rating	UL94	UL94	UL94 V-0	V-0
Glass Transition (Tg)	C	2.4.25	E-2/105 DSC	>130	135
Surface Resistivity	MD	2.5.17.1	C-96/35/90	t>1.0:	По 1.0x10 <sup>6</sup>
Volume Resistivity	MD-cm	2.5.17.1	C-96/35/90		C10 1.0x10 <sup>8</sup>
Dielectric Constant	—	2.5.5.2	Etched/@1 MHZ	<5.4	4.58
Loss Tangent	—	2.5.5.2	Etched/@1 MHZ	<0.035	0.022
Arc Resistance	Sec	2.5.1	D-48/50+D-0.5/23	>60	125
Moisture Absorption	%	2.6.2.1	D-24/23	<0.35(min0.51 mm)	0.21
				<0.80(max0.51 mm)	0.19
Z-Axis Expansion	ppm/C	2.4.24	E-2/105 TMA	—	58/286
TD	C	2.4.24.6	TGA		305
T-260	min	2.4.24.1	TMA		20
T-288	min	2.4.24.1	TMA		3

**Remarks:** Specimen Thickness: 1.6 mm 1/1

A = Keep the specimen originally without any process

C = Temperature and humidity conditioning

D = Temperature conditioning immersion in distilled water.

### Purchasing Information

Base Color	Thickness	Copper Cladding	Regular Size (mm)	CTI Value
(yellow)	0.05mm ~ 3.5mm	12µm, 18µm, 35µm, 70µm, 105µm	940*1245mm (37"*49")	KB-6160:150V
			1042*1245mm (41"*49")	KB-6160A:175V
			1093*1245mm (43"*49")	KB-6160C: 300V/600V

**Note:** Other sheet size and thickness could be available upon request.