



Lead-free , Halogen-free Material

EM-285 / EM-285B

- Superior thermal resistance for lead-free process
- FR-4 process friendly and suitable for sequential lamination
- Lower Df
- Low moisture absorption and excellent CAF resistance
- Halogen, antimony and red phosphorus free
- For LCD, memory module and mobile device application

Basic Laminate Property

Item	IPC-TM-650	Test condition	Unit	Typical Value	
Glass transition temp.	2.4.24	TMA	°C	150	
CTE, X-, Y-axis	2.4.24	Pre-Tg, TMA	ppm/°C	16/ 16	
CTE, Z-axis	2.4.24	Alpha 1, TMA	ppm/°C	50	
		Alpha 2, TMA	ppm/°C	250	
Z-axis Expansion	2.4.24	50~260°C, TMA	%	3.0	
Decomposition temp.	2.4.24.26	TGA	°C	360	
Thermal stress 10sec 288°C	2.4.13.1	Clad	—	Pass Visual	
		Etched	—	Pass Visual	
Water absorption	2.6.2.1	E-1/105+D-24/23	%	0.08	
Peel strength	0.5 oz	2.4.8	as received	lb/in	6.5
		2.4.8	after thermal stress	lb/in	6.5
	1.0 oz	2.4.8	as received	lb/in	8.5
		2.4.8	after thermal stress	lb/in	8.5
Permittivity (RC 50%)	1 MHz	2.5.5.9	C-24/23/50	—	4.8
	1 GHz			—	4.3
Loss tangent (RC 50%)	1 MHz	2.5.5.9	C-24/23/50	—	0.007
	1 GHz			—	0.011
Volume resistivity	2.5.17.1	C-96/35/90	MΩ-cm	>10 ¹⁰	
Surface resistivity	2.5.17.1	C-96/35/90	MΩ	>10 ⁹	
Flexural strength	Warp Fill	2.4.4	as received	MPa	640~680
			as received	MPa	460~500
Flame resistance	UL-94	A&E-24/125	—	V-0	

Specification Sheet : IPC-4101C / 128