



## Middle Tg / Lead Free / Halogen Free

### EM-285 / EM-285B

- Superior thermal resistance for lead-free process
- FR-4 process friendly and suitable for sequential lamination
- Low Df with low moisture absorption, and excellent CAF resistance
- Halogen, antimony and red phosphorus free
- For LCD, memory module and mobile device application
- Applicable IPC Slash Sheets: IPC-4101/127, /128

#### Basic Laminate Property

Property	Item		IPC-TM-650	Test Condition	Unit	Typical Value
Thermal	Tg		2.4.25	DSC	°C	N/A
			2.4.24	TMA	°C	150
			2.4.24.4	DMA	°C	175
	CTE, X/Y-axis		2.4.24.5	< Tg, TMA	ppm/°C	12/15
	CTE, Z-axis		2.4.24	< Tg, TMA	ppm/°C	40~45
				> Tg, TMA	ppm/°C	200~220
	Z-axis Expansion		2.4.24	50~260°C	%	2.8
	Td		2.4.24.6	TGA (5% W.L)	°C	360
	T288		2.4.24.1	Clad	Min	>15
Etched				Min	>60	
Electrical	Dk (R/C: 50%)	1 MHz	2.5.5.9	C-24/23/50	-	4.8
		1 GHz			-	4.2
	Df (R/C: 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 <sup>10</sup>
	Surface Resistivity		2.5.17.1	C-96/35/90	MΩ	>10 <sup>9</sup>
Physical	Water Absorption		2.6.2.1	E-1/105+D-24/23	%	0.11
	Peel Strength (HTE)	0.5 oz	2.4.8	As Received	lb/in	6.5
				After Thermal Stress	lb/in	6.5
	Flexural Strength	Warp	2.4.4	As Received	MPa	510~570
		Fill		As Received	MPa	450~500
	Flame Resistance		UL-94	A & E-24/125	-	V-0

Above typical values are tested under specified constructions and not intended for specification.