EM-825 / EM-825B

Middle Tg / Low CTE / Lead Free

- Applications include: computer and consumer electronics.
- Excellent thermal stability for lead-free process.
- Low Z-axis CTE: < 3.5% (50~260 °C)
- RoHS Compliant
- UL File: E150504
- Applicable IPC Slash Sheets: IPC-4101 /98, /99, /101; IPC-4103 /250, /550

Basic Laminate Property

Property	Item		Typical Value	Unit	Test Condition	IPC-TM-650
Thermal	Tg		150	°C	DSC	2.4.25
			140	°C	TMA	2.4.24
			160	°C	DMA	2.4.24.4
	CTE, X/Y-axis		12/15	ppm/ °C	< Tg, TMA	2.4.24.5
	CTE, Z-axis		40~45	ppm/ °C	< Tg, TMA	2.4.24
			240~250	ppm/ °C	> Tg, TMA	
	Z-axis Expansion		3.2	%	50~260 °C	2.4.24
	Td		340	°C	TGA (5% W.L)	2.4.24.6
	T288		>20	min.	Clad	2.4.24.1
			>25	min.	Etched	
	Thermal Conductivity		0.46	W/m.K	-	ASTM D5470
Electrical	Dk (R/C: 50%)	1 MHz	4.9	-	C-24/23/50	2.5.5.9
		1 GHz	4.4	-		
	Df (R/C: 50%)	1 MHz	0.015	-	C-24/23/50	2.5.5.9
		1 GHz	0.016	-		
	Volume Resistivity		$>10^{10}$	MΩ-cm	C-96/35/90	2.5.17.1
	Surface Resistivity		$>10^{9}$	MΩ	C-96/35/90	2.5.17.1
	Electric Strength		>40	kV/mm	D-48/50+D-0.5/23	2.5.6.2
	Dielectric Breakdown		>45	kV	D-48/50+D-0.5/23	2.5.6
Physical	Water Absorption		0.11	%	E-1/105+D-24/23	2.6.2.1
	Peel Strength (HTE)	H oz	6.5	lb/in	As Received	2.4.8
			6.5	lb/in	After Thermal Stress	
		1 oz	8.5	lb/in	As Received	
			8.5	lb/in	After Thermal Stress	
	Flexural Strength	Warp	510~570	MPa	As Received	2.4.4
		Fill	450~500	MPa	As Received	
	Flame Resistance		V-0	-	C-48/23/50	UL-94

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