

# EM-827 / EM-827B

## High Tg / Low CTE / Lead Free

- Applications include: server, computer, consumer electronics
- Excellent thermal stability for lead-free process
- Low Z-axis CTE < 3.0% (50~260°C)
- RoHS Compliant
- UL File: E150504
- Applicable IPC Slash Sheets: IPC-4101 /98, /99, /101, /126; IPC-4103 /250, /550

### Basic Laminate Property

Property	Item		Typical Value	Unit	Test Condition	IPC-TM-650
Thermal	Tg		175	°C	DSC	2.4.25
			160	°C	TMA	2.4.24
			185	°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
			200~220	ppm/°C	> Tg, TMA	
	Z-axis Expansion		2.6	%	50~260 °C	2.4.24
	Td		350	°C	TGA (5% W.L)	2.4.24.6
	T288		>25	min.	Clad	2.4.24.1
			>30	min.	Etched	
Thermal Conductivity		0.44	W/m.K	-	ASTM D5470	
Electrical	Dk (R/C: 50%)	1 MHz	4.8	-	C-24/23/50	2.5.5.9
		1 GHz	4.3	-		
	Df (R/C: 50%)	1 MHz	0.018	-	C-24/23/50	2.5.5.9
		1 GHz	0.019	-		
	Volume Resistivity		>10 <sup>10</sup>	MΩ-cm	C-96/35/90	2.5.17.1
Surface Resistivity		>10 <sup>9</sup>	MΩ	C-96/35/90	2.5.17.1	
Physical	Water Absorption		0.15	%	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	-	A & E-24/125	UL-94	

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