

# EM-825(I) / EM-825B(I)

## Middle Tg / CAF Resistance / Lead Free

- Applications include: automotive, computer and consumer electronics.
- Designed for high thermal reliability with excellent CAF resistance.
- 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 <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		0.11	%	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	-	A & E-24/125	UL-94	

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