

# EM-370(Z) / EM-37B(Z)

## High Tg / High Reliability / Halogen Free

- Applications include: automotive, power system, server and heavy copper PCB.
- Designed for high thermal reliability with excellent CAF resistance.
- Very Low Z-axis CTE: 1.8% (50~260°C)
- RoHS Compliant
- UL File: E150504
- Applicable IPC Slash Sheets: IPC-4101 /127, /128, /130; IPC-4103 /250, /550
- This material meets or exceeds the performance characteristics of IPC-4101/98, /99, /101, and /126

### Basic Laminate Property

Property	Item		Typical Value	Unit	Test Condition	IPC-TM-650
Thermal	Tg		190	°C	DSC	2.4.25
			180	°C	TMA	2.4.24
			210	°C	DMA	2.4.24.4
	CTE, X/Y-axis		11/13	ppm/°C	< Tg, TMA	2.4.24.5
	CTE, Z-axis		35~40	ppm/°C	< Tg, TMA	2.4.24
			140~160	ppm/°C	> Tg, TMA	
	Z-axis Expansion		1.8	%	50~260 °C	2.4.24
	Td		390	°C	TGA (5% W.L)	2.4.24.6
	T288		>60	min.	Clad	2.4.24.1
			>60	min.	Etched	
Thermal Conductivity		0.58	W/m.K	-	ASTM D5470	
Electrical	Dk (RC: 50/70%)	1 GHz	4.4/4.0	-	C-24/23/50	2.5.5.9
		10 GHz	4.2/3.8	-		Cavity Resonator
	Df (RC: 50/70%)	1 GHz	0.012/0.014	-	C-24/23/50	2.5.5.9
		10 GHz	0.015/0.019	-		Cavity Resonator
	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
	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		0.14	%	E-1/105+D-24/23	2.6.2.1
	Peel Strength (HTE)	H oz	6.0	lb/in	As Received	2.4.8
			6.0	lb/in	After Thermal Stress	
		1 oz	8.0	lb/in	As Received	
			8.0	lb/in	After Thermal Stress	
	Flexural Strength	Warp	570~630	MPa	As Received	2.4.4
Fill		500~550	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.