



# High Tg / Ultra Low Loss / Halogen Free

## EM-528K / EM-528BK

- Very Low Df, excellent electrical performance
- Low CTE for Z -axis direction
- Multiple lamination and high thermal reliability applications
- For high speed sever, network and telecom applications

### 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	220	
		2.4.24.4	DMA	°C	250	
	CTE, X/Y-axis	2.4.24.5	< Tg, TMA	ppm/°C	9/10	
	CTE, Z-axis	2.4.24	< Tg, TMA	ppm/°C	25~30	
			> Tg, TMA	ppm/°C	130~150	
	Z-axis Expansion	2.4.24	50~260°C	%	1.4	
	Td	2.4.24.6	TGA (5%W.L)	°C	420	
T288	2.4.24.1	Clad	Min	> 60		
		Etched	Min	> 60		
Electrical	Dk (R/C:50/70%)	1GHz	2.5.5.9	C-24/23/50	-	3.5/3.3
		10GHz	Cavity Resonator		-	3.4/3.2
		10GHz	SPC method		-	3.4/3.2
	Df (R/C:50/70%)	1GHz	2.5.5.9	C-24/23/50	-	0.0031/0.0032
		10GHz	Cavity Resonator			0.0041/0.0042
		10GHz	SPC method			0.0031/0.0032
	Volume Resistivity	2.5.17.1	C-96/35/90	MΩ-cm	> 10 <sup>10</sup>	
Surface Resistivity	MΩ			> 10 <sup>9</sup>		
Physical	Water Absorption	2.6.2.1	E-1/105+D-24/23	%	0.11	
	Peel Strength(RTF)	0.5 oz	2.4.8	As Received	lb/in	5.0
	Peel Strength(HVLP)	0.5 oz				4.0
	Flexural Modulus	Warp	2.4.4	As Received	GPa	24-26
		Fill				23-25
Flame Resistance	UL-94	A & E-4/125	-	V-0		