EM-528 / EM-528B
High Tg / Very Low Loss / Halogen Free

- Applications include: high-speed server, network and telecom.
- Low Df for excellent electrical performance.
- Low CTE for X/ Y/ Z-axis direction.
- Multiple lamination and high thermal reliability applications.
- RoHS Compliant
- UL File: E150504
- Applicable IPC Slash Sheets: IPC-4103 /240, /540

Basic Laminate Property

Property	Item		Typical Value	Unit	Test Condition	IPC-TM-650
Thermal	Tg		N/A	°C	DSC	2.4.25
			220	°C	TMA	2.4.24
			250	°C	DMA	2.4.24.4
	CTE, X/Y-axis		9/10	ppm/°C	< Tg, TMA	2.4.24.5
	CTE, Z-axis		25~30	ppm/°C	< Tg, TMA	2.4.24
			130~150	ppm/°C	> Tg, TMA	
	Z-axis Expansion		1.4	%	50~260 °C	2.4.24
	Td		420	°C	TGA (5%W.L)	2.4.24.6
	T288		> 60	min.	Clad	2.4.24.1
			> 60	min.	Etched	
	Thermal Conductivity		0.6	W/m.K	-	ASTM D5470
Electrical	Dk (R/C:50/70%)	1GHz	4.0/3.6	-	C-24/23/50	2.5.5.9
		10GHz	3.9/3.5	-		Cavity Resonator
		10GHz	3.9/3.5	-		SPC method
	Df (R/C:50/70%)	1GHz	0.0047/0.0044	-	C-24/23/50	2.5.5.9
		10GHz	0.0061/0.0058	-		Cavity Resonator
		10GHz	0.0050/0.0046	-		SPC method
	Volume Resistivity		> 10^{10}	MΩ-cm	C-96/35/90	2.5.17.1
	Surface Resistivity		> 10^{9}	MΩ		2.5.17.1
Physical	Water Absorption		0.11	%	E-1/105+D-24/23	2.6.2.1
	Peel Strength	RTF, H oz	5.0	lb/in	As Received	2.4.8
		HVLP, H oz	4.0	lb/in	As Received	
	Flexural Modulus	Warp	24~26	GPa	As Received	2.4.4
		Fill	23~25	GPa	As Received	
	Flame Resistance		V-0	-	A & E-4/125	UL-94

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

Rev: 2022 Nov.