

EM-A30 / EM-A3B

High Tg / High Voltage / Halogen Free

- Applications Include: Automotive ECU, Power System, Heavy Copper
- Designed for High Thermal Reliability with Excellent CAF Resistance (1500V)
- Very Low Z-axis CTE: 1.7% (50~260°C)
- FR-15.1, MOT: 150°C; CTI PLC1
- RoHS Compliant
- UL File: E150504
- Applicable IPC Slash Sheets: IPC-4101 /153, /154; IPC-4103 /250, /550

Basic Laminate Property

Property	Item		Typical Value	Unit	Test Condition	IPC-TM-650
Thermal	Tg		190	°C	DSC	2.4.25
			185	°C	TMA	2.4.24
			220	°C	DMA	2.4.24.4
	CTE, X/Y-axis		11/13	ppm/°C	< Tg, TMA	2.4.24.5
	CTE, Z-axis		30~35	ppm/°C	< Tg, TMA	2.4.24
			140~160	ppm/°C	> Tg, TMA	
	Z-axis Expansion		1.7	%	50~260°C	2.4.24
	Td		405	°C	TGA (5% W.L)	2.4.24.6
	T288		>120	Min	Clad	2.4.24.1
			>120	Min	Etched	
	Thermal Conductivity		0.58	W/m.K	-	ASTM D5470
Electrical	Dk (R/C: 50/70%)	1GHz	4.3/ 3.8	-	C-24/23/50	2.5.5.9
		10GHz	4.1/ 3.7	-		Cavity Resonator
	Df (R/C: 50/70%)	1GHz	0.010/ 0.011	-	C-24/23/50	2.5.5.9
		10GHz	0.013/ 0.015	-		Cavity Resonator
	Volume Resistivity		>10 ¹⁰	MΩ-cm	C-96/35/90	2.5.17.1
	Surface Resistivity		>10 ⁹	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		0.16	%	E-1/105+D-24/23	2.6.2.1
	Peel Strength (RTF)	1.0 oz	4.5	lb/in	As Received	2.4.8
	Flexural Strength	Warp	450~510	MPa	As Received	2.4.4
		Fill	450~500	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.