



Autolad3G

(UL ANSI:FR-15.1) Halogen-free, High-performance, Automotive-grade laminate

FEATURES

- Lead-free compatible.
- Very low Z-axis CTE: 1.8% (50°C~260°C).
- Excellent CAF resistance and thermal cycling reliability.
- High thermal resistance.

APPLICATIONS

- Designed for automotive electronics, including junction box, engine ECU, and body ECU.

GENERAL PROPERTIES

Property	Test Items		Test Method	Test Condition	Unit	Typical Value	
Thermal	Tg	DMA	2.4.24.4	E-1/105	°C	200	
		TMA	2.4.24	E-2/105		180	
		DSC	2.4.25	E-2/105		190	
	CTE	X-axis	2.4.24.5	E-1/105 (30°C ~ 120°C)		ppm/°C	11 ~ 13
		Y-axis	2.4.24.5	E-1/105 (30°C ~ 120°C)		ppm/°C	11 ~ 13
		Z-axis	2.4.24	E-2/105, Before Tg		ppm/°C	35
		Z-axis	2.4.24	E-2/105, After Tg		ppm/°C	180
		Z-axis	2.4.24	E-2/105 (50°C ~ 260°C)		%	1.8
	Td (5% wt. loss)		2.4.24.6	E-24/110		°C	408
	T300		2.4.24.1	E-2/105		min	> 60
Thermal Stress		2.4.13.1	288°C/10s, solder dipping		-	Pass	
Electrical	Dk	1GHz	2.5.5.9	C-24/23/50		-	4.3
		10GHz	2.5.5.5	C-24/23/50		-	4.1
	Df	1GHz	2.5.5.9	C-24/23/50		-	0.011
		10GHz	2.5.5.5	C-24/23/50		-	0.012
	Volume Resistivity		2.5.17.1	C-96/35/90		MΩ·cm	5.0×10 ¹⁰
			2.5.17.1	After moisture resistance		MΩ·cm	4.0×10 ⁹
	Surface Resistivity		2.5.17.1	C-96/35/90		MΩ	2.0×10 ⁹
			2.5.17.1	After moisture resistance		MΩ	8.0×10 ⁸
	Arc Resistance		2.5.1	D-48/50+D-0.5/23		s	181
	Dielectric Breakdown		2.5.6	D-48/50+D-0.5/23		kV	> 45 (No Breakdown)
Electric Strength		2.5.6.2	D-48/50+D-0.5/23		kV/mm	69	
CTI		ASTM D3638	C-40/23/50		PLC [Volts]	PLC3	
Physical	Peel Strength (HTE 1oz)		2.4.8	288°C/10s		N/mm [lb/in]	1.3 [7.43]
	Water Absorption		2.6.2.1	E-1/105+D-24/23		%	0.11
	Thermal Conductivity		ASTM D5470	As Received		W/m·K	0.46
	Young's Modulus	Length	ASTM D882	As received		GPa	26.2
		Cross	ASTM D882	As received		GPa	24.0
	Poisson's Ratio	Length	ISO 527	As received		-	0.17
		Cross	ISO 527	As received		-	0.14
	Flexural Strength	Length	2.4.4	As Received		MPa	560
Cross		2.4.4	As Received		MPa	450	
Chemical	Flammability		UL94	C-48/23/50, E-24/125		Rating	V-0

Remarks:

1. Applicable IPC slash sheet: IPC-4101/130. Unless otherwise specified, all test methods follow IPC-TM-650.
2. All typical value is based on the 1.60mm (8×7628) specimen, but not guarantee data. Electric Strength is based on the 0.127mm (1×2116) specimen.
3. All typical values listed above are for your reference only and not intended for specification.
4. Please refer to lineup document for more specification and parameters, or contact Shengyi Technology Co., Ltd. for detailed information.