

Aluminum Substrate Datasheet

Material data sheet - OPT112.01.AI5215.4.0030

	Treatment Condition	Value	Unit	Remark
Thermal Properties				
Thermal Conductivity (Dielectric layer)		3.0	W/m-k	
Thermal Resistance (Dielectric layer)		0.052	^o C-in ² /W	
Maximum Operating	UL 746	125	^o C	
Glass Transition Temp (Tg)	DSC	130	^o C	
Coefficient of Thermal Expansion (CTE)	< Tg	20~30	x10 ⁻⁶ / ^o C	
	> Tg	20~30		
Electrical Properties				
Dielectric constant	1kHz/1MHz	4.2	—	
Dissipation Factor	1kHz/1MHz	0.02	—	
Volume Resistivity	C-96/40/90	1x10 ⁸	MΩ·cm	
Surface Resistivity	C-96/40/90	1x10 ⁷	MΩ	
Dielectric Breakdown Voltage	A	30	KV/mm	
Mechanical Properties				
Dielectric Thickness	A	100	μm	
Peel Strength	A	1.05	N/mm	
Chemical Properties				
Water absorption	D-24/23	0.09	%	
Ratings and Durability				
UL Flammability		94 V-0	—	
Comparative Tracking Index	IEC60112	600	V	
Thermal stress	10 sec @ 288 ^o C, 3 cycles	Pass (120 sec @ 288 ^o C)	—	
Time to delamination	5min @ 260 ^o C	Pass	—	

* Non-mentioned PCB information based on: Aluminum thk 1.5mm, Al type 5052; Copper foil 1oz

* The data is based on typical values of standard production and should be considered as general information. Our company reserves the right to future changes. It is the responsibility of the user to ensure that the product complies with his requirements.

Aluminum Substrate Datasheet

Material Datasheet - **OPT111.01.AI5215.4.0018**

	Treatment Condition	Value	Unit
Thermal Properties			
Thermal Conductivity (Dielectric layer)		1.8	W/m-k
Thermal Resistance (Dielectric layer)		0.086	°C-in ² /W
Maximum Operating Temperature	UL 746	125	°C
Glass Transition Temp (Tg)	DSC	130	°C
Coefficient of Thermal Expansion (CTE)	< Tg	21.5	x10 ⁻⁶ /°C
	> Tg	22.0	
Electrical Properties			
Dielectric constant	1kHz/1MHz	4.2	—
Dissipation Factor	1kHz/1MHz	0.02	—
Volume Resistivity	C-96/40/90	1×10 ⁸	MΩ·cm
Surface Resistivity	C-96/40/90	1×10 ⁷	MΩ
Dielectric Breakdown Voltage	A	30	KV/mm
Mechanical Properties			
Dielectric Thickness	A	100	μm
Peel Strength	A	1.05	N/mm
Chemical Properties			
Water absorption	D-24/23	0.09	%
Ratings and Durability			
UL Flammability		94 V-0	—
Comparative Tracking Index	IEC60112	600	V
Thermal stress	10 sec @ 288 °C, 3 cycles	Pass	—
Time to delamination	5min @ 260 °C	Pass	—

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Material Datasheet - OPU101.01.AI5215.4.0010			
	Treatment Condition	Value	Unit
Thermal Properties			
Thermal Conductivity (Dielectric layer)		1.0	W/m-k
Thermal Resistance (Dielectric layer)		0.155	°C-in ² /W
Maximum Operating Temperature	UL 746	110	°C
Glass Transition Temp (Tg)	DSC	135	°C
Coefficient of Thermal Expansion (CTE)	< Tg	65	x10 ⁻⁶ /°C
	> Tg	310	
Electrical Properties			
Dielectric constant	1kHz/1MHz	4.2	—
Dissipation Factor	1kHz/1MHz	0.02	—
Volume Resistivity	C-96/40/90	1×10 ⁸	MΩ·cm
Surface Resistivity	C-96/40/90	1×10 ⁷	MΩ
Dielectric Breakdown Voltage	A	30	KV/mm
Mechanical Properties			
Dielectric Thickness	A	100	μm
Peel Strength	A	1.05	N/mm
Chemical Properties			
Water absorption	D-24/23	0.09	%
Ratings and Durability			
UL Flammability		94 V-0	—
Comparative Tracking Index	IEC60112	400~600	V
Thermal stress	10 sec @ 288 °C, 3 cycles	Pass	—
Time to delamination	5min @ 260 °C	Pass	—

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