Guangzhou Guangyou Electronics Co., Ltd.

Trust comes from professionalism and quality, and growth comes from development and win-win!

Professional copper clad laminate substrate manufacturer

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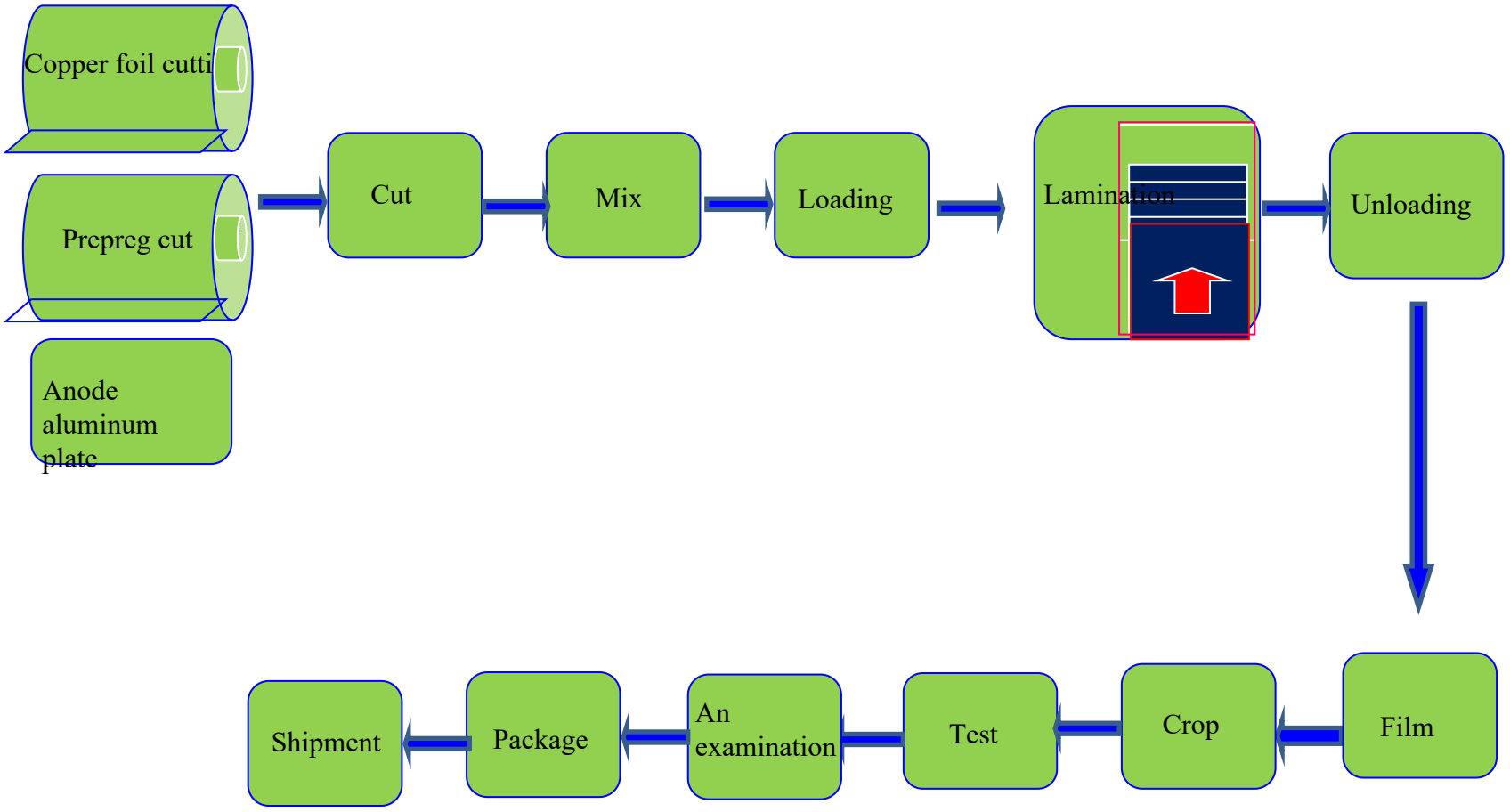
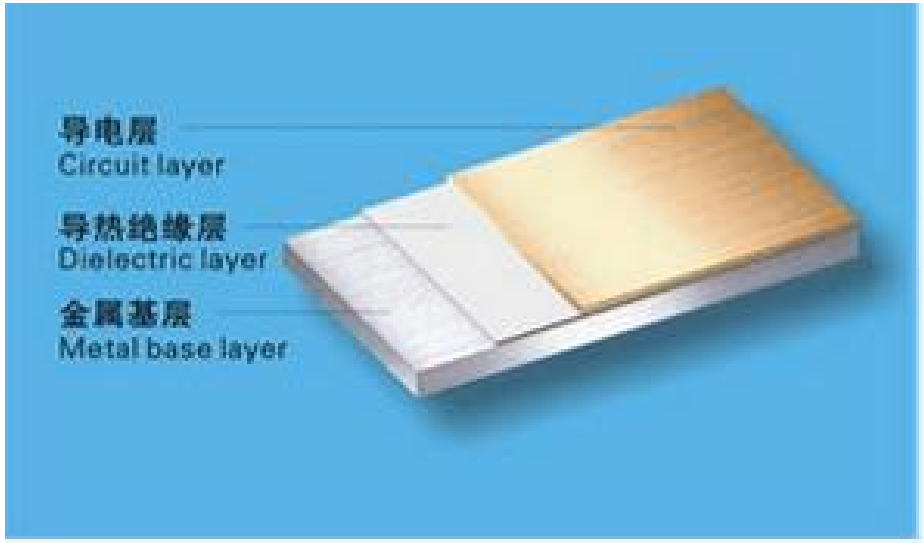
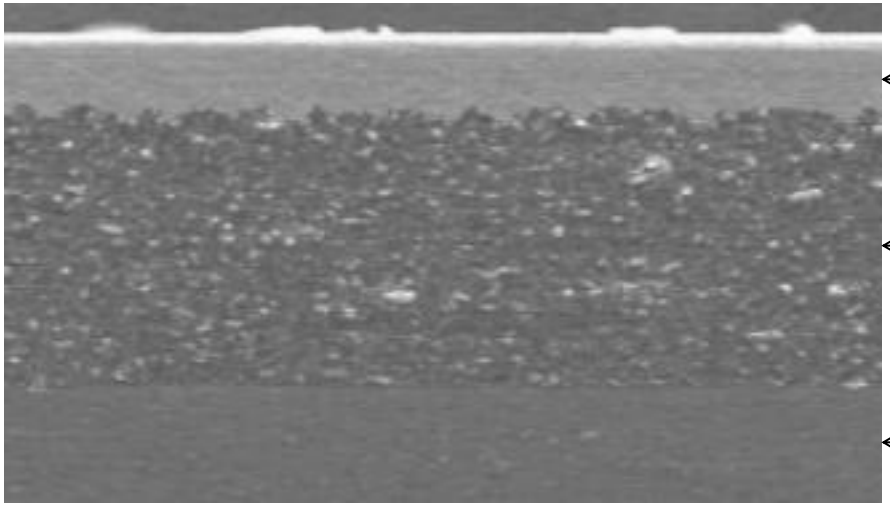
Guangzhou Guangyou Electronics Co., Ltd. was established on January 20, 2020. It is located at No. 106, Fengze East Road, Nansha District, China, Guangdong Province, Guangzhou City, and is close to Dongguan, Shenzhen, Zhongshan and the three major aluminum-based circuit boards. Production site, the company’ s designed production capacity is 100,000 pcs/month of substrates, production equipment and testing equipment are complete, product quality is stable, products are widely used in high-power discharge, photovoltaic projects, automotive electronics, medical equipment, communications electronics and other related industries, the products are far It is sold in Europe, America, Japan, Korea, Taiwan and other related regions, and has won unanimous praise from the industry. It is a professional manufacturer of heat-dissipating metal substrates in the industry.

Production flow chart



Laminated structure





Copper foil

Dielectric layer

Aluminum plate

Application field

1. All lighting;
2. LCD backlight;
3. Audio equipment input and output amplifiers, balanced amplifiers, audio amplifiers, pre-amplifiers;
4. Power switch regulators, converters, regulators;
5. High-frequency amplifiers, filter appliances, and reporting circuits for communication electronic equipment;
6. Office automation motor driver, etc.;
7. Automotive electronic regulators, igniters, power controllers, front and rear lights;
8. Computer CPU board, power supply device, etc.;
9. Power converters, solid state relays, rectifier bridges, etc.

Working principle

The metal substrate is a copper clad laminate with good heat dissipation function, which consists of a unique three-layer structure group

It is composed of a circuit layer, a thermally conductive insulating layer and an aluminum base layer.

The working principle of the metal substrate is: the surface of the power device is inserted into the circuit layer, and the heat generated by the device

The amount is conducted through the insulating layer to the metal base layer, and then through the thermal interface material to the radiator, so that

It can diffuse most of the heat generated by the LED into the surrounding air through convection.

The heat dissipation principle of the original device is now.

Manufacturing process

Copper substrate, aluminum substrate, iron substrate, FR-4, plug hole board, plywood, double-sided aluminum substrate, super long substrate.

Process range:

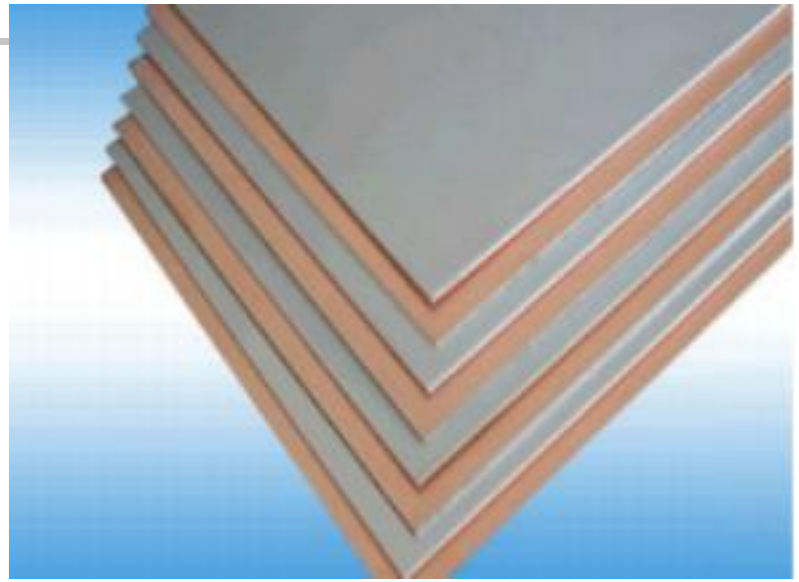
Thickness: 0.4-5.0mm;

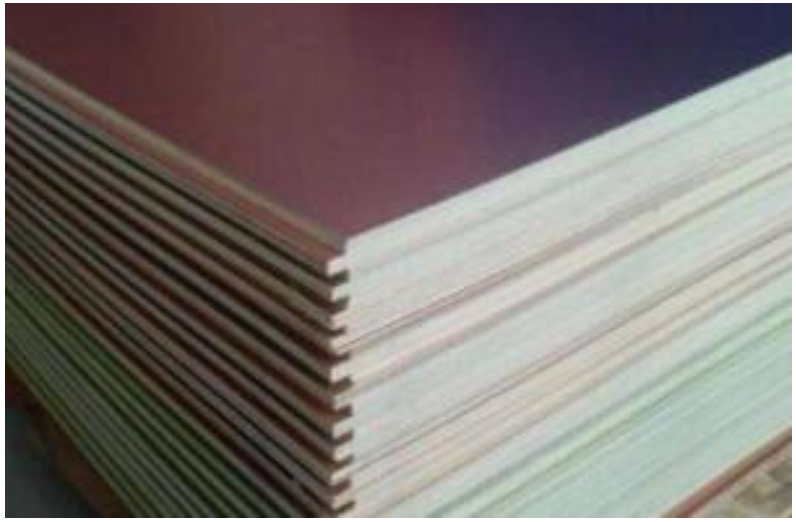
Length: Maximum size 1200*1500mm;

Thermal conductivity: 1-8W;

Withstand voltage: AC up to 9000V.

Products Show





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Product Show (General Guide)

No	Item	Unit	Test Condition	Specification Value			Actual Value
1	Visuals	-	A	CLASS A			PASS
			IPC-TM-6502.1.5.2.1.9	IPC-4101C 3.8.3.1			
2	Peel Strength	N/mm	288℃,10s	0.5oz	1.0oz	2.0oz	1.4-1.8
				≥0.8	≥1.2	≥1.40	
			IPC-TM-6502.4.8	IPC-4101C 3.9.1.1			
3	Thermal stress	-	288℃*10s	288℃*10s*3x			280-300
			IPC-TM-6502.4.13.1	IPC-4101C 3.10.1.2			
4	Thermal Conductivity	W/m.K	(ASTM E1461)	>0.3			0.3-0.5
5	Dielectric Breakdown	KV/mm	A	≥2			≥2
			IPC-TM-6502.5.6.2	IPC-4101C 3.11.1.7			
6	Dielectric Layer Thickness	UM	A	≥120			120-130
			Microscope				
7	CTI	V	IEC-60112	≥600			600
8	Flammability	-	E24/125	UL94V-0			V-0
			IPC-TM-6502.3.10				
9	Surface Resistivity	Ω	A	$\geq 1.0*10^4$			1.6×10^4
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.4			
10	Volume Resistivity	Ω	A	$\geq 1.0*10^6$			1.5×10^6
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.3			

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Product display (1W)

No	Item	Unit	Test Condition	Specification Value			Actual Value
1	Visuals	-	A	CLASS A			PASS
			IPC-TM-6502.1.5.2.1.9	IPC-4101C 3.8.3.1			
2	Peel Strength	N/mm	288℃,10s	0.5oz	1.0oz	2.0oz	1.4-1.8
				≥0.8	≥1.2	≥1.40	
			IPC-TM-6502.4.8	IPC-4101C 3.9.1.1			
3	Thermal stress	-	288℃*10s	288℃*10s*3x			280-300
			IPC-TM-6502.4.13.1	IPC-4101C 3.10.1.2			
4	Thermal Conductivity	W/m.K	(ASTM E1461)	1.0			0.8-1.0
5	Dielectric Breakdown	KV/mm	A	≥2			3
			IPC-TM-6502.5.6.2	IPC-4101C 3.11.1.7			
6	Dielectric Layer Thickness	UM	A	≥120			120-130
			Microscope				
7	CTI	V	IEC-60112	≥600			600
8	Flammability	-	E24/125	UL94V-0			V-0
			IPC-TM-6502.3.10				
9	Surface Resistivity	Ω	A	$\geq 1.0*10^4$			1.6×10^4
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.4			
10	Volume Resistivity	Ω	A	$\geq 1.0*10^6$			1.5×10^6
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.3			

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Product display (1.5W)

No	Item	Unit	Test Condition	Specification Value			Actual Value
1	Visuals	-	A	CLASS A			PASS
			IPC-TM-6502.1.5.2.1.9	IPC-4101C 3.8.3.1			
2	Peel Strength	N/mm	288℃,10s	0.5oz	1.0oz	2.0oz	1.4-1.8
				≥0.8	≥1.2	≥1.40	
			IPC-TM-6502.4.8	IPC-4101C 3.9.1.1			
3	Thermal stress	-	288℃*10s	288℃*10s*3x			280-300
			IPC-TM-6502.4.13.1	IPC-4101C 3.10.1.2			
4	Thermal Conductivity	W/m.K	(ASTM E1461)	1.5			1.2-1.3
5	Dielectric Breakdown	KV/mm	A	≥2			4
			IPC-TM-6502.5.6.2	IPC-4101C 3.11.1.7			
6	Dielectric Layer Thickness	UM	A	≥120			120-130
			Microscope				
7	CTI	V	IEC-60112	≥600			600
8	Flammability	-	E24/125	UL94V-0			V-0
			IPC-TM-6502.3.10				
9	Surface Resistivity	Ω	A	$\geq 1.0*10^4$			1.6×10^4
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.4			
10	Volume Resistivity	Ω	A	$\geq 1.0*10^6$			1.5×10^6
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.3			

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Product display (2.0W)

No	Item	Unit	Test Condition	Specification Value			Actual Value
1	Visuals	-	A	CLASS A			PASS
			IPC-TM-6502.1.5.2.1.9	IPC-4101C 3.8.3.1			
2	Peel Strength	N/mm	288℃,10s	0.5oz	1.0oz	2.0oz	1.4-1.8
				≥0.8	≥1.2	≥1.40	
			IPC-TM-6502.4.8	IPC-4101C 3.9.1.1			
3	Thermal stress	-	288℃*10s	288℃*10s*3x			280-300
			IPC-TM-6502.4.13.1	IPC-4101C 3.10.1.2			
4	Thermal Conductivity	W/m.K	(ASTM E1461)	2.0			1.6-1.8
5	Dielectric Breakdown	KV/mm	A	≥2			3
			IPC-TM-6502.5.6.2	IPC-4101C 3.11.1.7			
6	Dielectric Layer Thickness	UM	A	≥120			120-130
			Microscope				
7	CTI	V	IEC-60112	≥600			600
8	Flammability	-	E24/125	UL94V-0			V-0
			IPC-TM-6502.3.10				
9	Surface Resistivity	Ω	A	$\geq 1.0*10^4$			1.6×10^4
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.4			
10	Volume Resistivity	Ω	A	$\geq 1.0*10^6$			1.5×10^6
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.3			

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Product display (3.0W)

No	Item	Unit	Test Condition	Specification Value			Actual Value
1	Visuals	-	A	CLASS A			PASS
			IPC-TM-6502.1.5.2.1.9	IPC-4101C 3.8.3.1			
2	Peel Strength	N/mm	288℃,10s	0.5oz	1.0oz	2.0oz	1.4-1.8
				≥0.8	≥1.2	≥1.40	
			IPC-TM-6502.4.8	IPC-4101C 3.9.1.1			
3	Thermal stress	-	288℃*10s	288℃*10s*3x			280-300
			IPC-TM-6502.4.13.1	IPC-4101C 3.10.1.2			
4	Thermal Conductivity	W/m.K	(ASTM E1461)	3.0			2.2-2.5
5	Dielectric Breakdown	KV/mm	A	≥2			3
			IPC-TM-6502.5.6.2	IPC-4101C 3.11.1.7			
6	Dielectric Layer Thickness	UM	A	≥120			120-130
			Microscope				
7	CTI	V	IEC-60112	≥600			600
8	Flammability	-	E24/125	UL94V-0			V-0
			IPC-TM-6502.3.10				
9	Surface Resistivity	Ω	A	$\geq 1.0*10^4$			1.6×10^4
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.4			
10	Volume Resistivity	Ω	A	$\geq 1.0*10^6$			1.5×10^6
			IPC-TM-6502.5.17.1	IPC-4101C 3.11.1.3			

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Storage conditions

Metal substrate storage requirements:

1. Metal-based copper clad laminates should be stored in a dry and ventilated environment to avoid direct sunlight and rain;

2. Avoid contact with chemical corrosive gases and drugs;

3. Storage conditions: temperature: ≤30° C relative humidity: <60% valid period of use: 180 days.