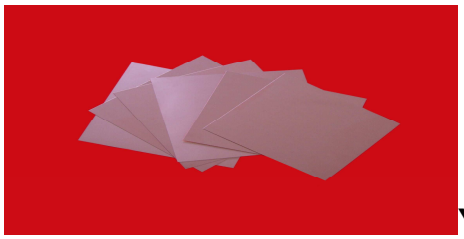


YGA-1 series Aluminum based CCL

Advantage: High Heat dissipation, Electromagnetic Shielding，High Mechanical Strength，Excellent processing performance。

Application:

Hybrid-Power IC

Audio Equipment :Input and output amplifier; A balance amplifier; Audio Amplifier; Preamplifier; Power Amplifier and so on.

Power Supplier :Switch power supplier, DC/DC Converters, SW Regulator and so on

Communication equipments: High-frequency increaser; Filter Circuit and Transmitter Circuit

Office automation Equipment: Motor Driver and so on.

Motor Car: Electronics Regulator; Ignition ; Power controller and so on.

Computer: CPU Board, Floppy disk Driver, Power supplier and so on.

Power Modules: Current Converter, Solid relays ; Power rectifier bridges.

LED Lighting: High-power LED Lights, LED Curtain Wall and So on.

Models: YGA-1-1 (Insulation layer of FR-4 UV)

YGA-1-2 (Insulation layer of FR-4)

YGA-1-3 (Insulation layer of high Tg FR-4)

YGA-1-4 (Insulation layer of PI)

Specification:

Metal Substrate Layer: 0.8mm；1.0mm；1.5mm；2.0mm；3.0mm

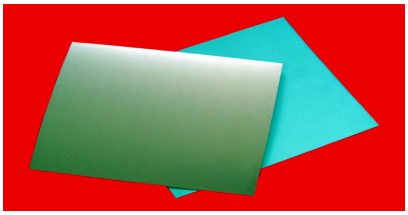
Copper foil: 1oz；2oz；3oz；4oz；6oz

Size: 1000x600mm; 500x600mm

The Performance 0f YGA-1 series Aluminum-based CCL

Item	Condition	Typical Value			
		YGA-1-1	YGA-1-2	YGA-1-3	YGA-1-4
Peel Strength (N/mm)	A	≥2.0	≥2.0	≥1.5	≥1.7
	After Thermal Stress	≥1.8	≥1.8	≥1.5	≥1.7
Surface Resistance (MΩ)	A	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$
	C-96/35/90	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$
Volume Resistivity ((MΩ.cm)	A	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$
	C-96/35/90	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$
Break-down Voltage (KV)	D-48/50+D-0.5/23	≥3.0	≥3.0	≥3.0	≥3.0
Dielectric Constant (1MHZ)	C-96/35/90	≤4.7	≤4.7	≤4.6	≤4.4
Dissipation Factor (1MHZ)	C-96/35/90	≤0.03	≤0.03	≤0.03	≤0.03
Thermal Stress	288℃ 2min	No Blistering, No Delaminating			
Flammability	A	V-0			
CTI (V)	A	400	400	400	400
Heat Resistance (℃/W)	(Internal TO-220 Test)	≤1.5	≤1.5	≤1.4	≤1.3
Thermal conductivity(W/mK)	(ASTM 5470)	0.3	0.3	0.35	0.4
Tg (℃)	(DSC)	130	130	170	250

*Heat resistance of 1.6mm substrate, the thickness of the copper foil under the 1oz measurements.



YGA-2 series Aluminum based CCL

Advantage: More high-conductivity and longer service time which compared to the normal and mainly be used for the high-power circuits which have high requirements of good heat dissipation.

Application:

Hybrid-Power IC

Audio Equipment :Input and output amplifier; A balance amplifier; Audio Amplifier; Preamplifier; Power Amplifier and so on.

Power Supplier: Switch power supplier, DC/DC Converters, SW Regulator and so on

Communication equipments: High-frequency increaser; Filter Circuit and Transmitter Circuit

Office automation Equipment: Motor Driver and so on.

Motor Car: Electronics Regulator; Ignition; Power controller and so on.

Computer: CPU Board, Floppy disk Driver, Power supplier and so on.

Power Modules: Current Converter, Solid relays; Power rectifier bridges.

LED Lighting: High-power LED Lights, LED Curtain Wall and So on.

Models: YGA-2-1 (Insulation layer of high thermal conductivity resin, Thickness 80±10um)

YGA-2-2 (Insulation layer of high thermal conductivity resin, Thickness 100±10um)

YGA-2-3 (Insulation layer of high thermal conductivity resin, Thickness 120±10um)

YGA-2-4 (Insulation layer of high thermal conductivity resin, Thickness 150±10um)

YGA-2-5 (Insulation layer of high thermal conductivity resin, Thickness 180±10um)

YGA-2-6 (Insulation layer of high thermal conductivity resin, Thickness 210±10um)

Specification:

Metal Substrate Layer: 0.8mm；1.0mm；1.5mm；2.0mm；3.0mm

Copper foil: 1oz；2oz；3oz；4oz；6oz

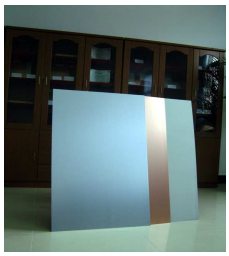
Size: 1000x600mm; 500x600mm

The Performance 0f YGA-2 series Aluminum-based CCL

Item	Condition	Typical Value					
		YGA-2-1	YGA-2-2	YGA-2-3	YGA-2-4	YGA-2-5	YGA-2-6
Peel Strength (N/mm)	A	≥1.7	≥1.7	≥1.7	≥1.7	≥1.7	≥1.7
	After Thermal Stress	≥1.7	≥1.7	≥1.7	≥1.7	≥1.7	≥1.7
Surface Resistance (MΩ)	A	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$
	C-96/35/90	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$
Volume Resistivity ((MΩ.cm)	A	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$
	C-96-35/90	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$
Break-Down Voltage (KV)	D-48/50+D-0.5	≥3	≥4	≥5	≥8	≥10	≥12

	/23						
Dielectric Constant (1MHz)	C-96/35/90+Recovery	≤6.5	≤6.5	≤6.5	≤6.5	≤6.5	≤6.5
Dissipation Factor(1MHz)	C-96/35/90+Recovery	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03
Thermal Stress	288℃ 2min	No Blistering , No delaminating					
Flammability	A	V-0					
CTI (V)	A	600	600	600	600	600	600
Heat Resistance (℃/W)	(Internal TO-220 Test)	≤0.65	≤0.8	≤0.95	≤1.1	≤1.3	≤1.5
Thermal conductivity(W/mK)	(ASTM 5470)	1.3	1.3	1.3	1.3	1.3	1.3
Tg (℃)	(DSC)	130	130	130	130	130	130

*Heat resistance of 1.6mm substrate, the thickness of the copper foil under the 1oz measurements.



YGA-3 series Aluminum based CCL

Advantage: More high-conductivity and longer service time which compared to the normal and mainly be used for the high-power circuits which have high requirements of good heat dissipation.

Application:

Hybrid-Power IC

Audio Equipment :Input and output amplifier; A balance amplifier; Audio Amplifier; Preamplifier; Power Amplifier and so on.

Power Supplier: Switch power supplier, DC/DC Converters, SW Regulator and so on

Communication equipments: High-frequency increaser; Filter Circuit and Transmitter Circuit

Office automation Equipment: Motor Driver and so on.

Motor Car: Electronics Regulator; Ignition; Power controller and so on.

Computer: CPU Board, Floppy disk Driver, Power supplier and so on.

Power Modules: Current Converter, Solid relays; Power rectifier bridges.

LED Lighting: High-power LED Lights, LED Curtain Wall and So on.

Models: YGA-3-1 (Insulation layer of high thermal conductivity resin, Thickness 80±10um)

YGA-3-2 (Insulation layer of high thermal conductivity resin, Thickness 100±10um)

YGA-3-3 (Insulation layer of high thermal conductivity resin, Thickness 120±10um)

YGA-3-4 (Insulation layer of high thermal conductivity resin, Thickness 150±10um)

YGA-3-5 (Insulation layer of high thermal conductivity resin, Thickness 180±10um)

YGA-3-6 (Insulation layer of high thermal conductivity resin, Thickness 210±10um)

Specification:

Metal Substrate Layer: 0.8mm；1.0mm；1.5mm；2.0mm；3.0mm

Copper foil: 1oz；2oz；3oz；4oz；6oz

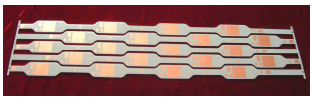
Size: 1000x600mm; 500x600mm

The Performance 0f YGA-3 series Aluminum-based CCL

Item	Condition	Typical Value					
		YGA-3-1	YGA-3-2	YGA-3-3	YGA-3-4	YGA-3-5	YGA-3-6
Peel Strength (N/mm)	A	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5
	After Thermal Stress	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5
Surface Resistance (MΩ)	A	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$
	C-96/35/90	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$
Volume Resistivity ((MΩ.cm)	A	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$
	C-96-35/90	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$
Break-Down Voltage (KV)	D-48/50+D-0.5 /23	≥3	≥4	≥5	≥8	≥10	≥12
Dielectric Constant (1MHz)	C-96/35/90+R ecovery	≤7	≤7	≤7	≤7	≤7	≤7
Dissipation Factor(1MHz)	C-96/35/90+R ecovery	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03
Thermal Stress	288℃ 2min	No Blistering , No delaminating					
Flammability	A	V-0					
CTI (V)	A	600	600	600	600	600	600
Heat Resistance (℃/W)	(Internal TO-220 Test)	≤0.55	≤0.65	≤075	≤0.85	≤1.0	≤1.2
Thermal	(ASTM 5470)	1.8	1.8	1.8	1.8	1.8	1.8

conductivity(W/mK)							
Tg （℃）	(DSC)	130	130	130	130	130	130

*Heat resistance of 1.6mm substrate, the thickness of the copper foil under the 1oz measurements.



YGA-4 series Aluminum based CCL

Advantage: More high-conductivity and longer service time which compared to the normal and mainly be used for the high-power circuits which have high requirements of good heat dissipation.

Application:

Hybrid-Power IC

Audio Equipment :Input and output amplifier; A balance amplifier; Audio Amplifier; Preamplifier; Power Amplifier and so on.

Power Supplier: Switch power supplier, DC/DC Converters, SW Regulator and so on

Communication equipments: High-frequency increaser; Filter Circuit and Transmitter Circuit

Office automation Equipment: Motor Driver and so on.

Motor Car: Electronics Regulator; Ignition; Power controller and so on.

Computer: CPU Board, Floppy disk Driver, Power supplier and so on.

Power Modules: Current Converter, Solid relays; Power rectifier bridges.

LED Lighting: High-power LED Lights, LED Curtain Wall and So on.

Models: YGA-4-1

YGA-4-2

YGA-4-3

YGA-4-4

YGA-4-5

YGA-4-6

Specification:

Metal Substrate Layer: 0.8mm；1.0mm；1.5mm；2.0mm；3.0mm

Copper foil: 1oz；2oz；3oz；4oz；6oz

Size: 1000x600mm; 500x600mm

The Performance 0f YGA-4 series Aluminum-based CCL

Item	Condition	Typical Value					
		YGA-4-1	YGA-4-2	YGA-4-3	YGA-4-4	YGA-4-5	YGA-4-6
Peel Strength (N/mm)	A	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5
	After Thermal Stress	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5	≥1.5
Surface Resistance (MΩ)	A	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$	$\geq 10^6$
	C-96/35/90	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$	$\geq 10^5$
Volume Resistivity ((MΩ.cm)	A	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$	$\geq 10^9$
	C-96-35/90	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$	$\geq 10^8$
Break-Down Voltage (KV)	D-48/50+D-0.5 /23	≥3	≥4	≥5	≥8	≥10	≥12
Dielectric Constant (1MHz)	C-96/35/90+R ecovery	≤8	≤8	≤8	≤8	≤8	≤8
Dissipation Factor(1MHz)	C-96/35/90+R ecovery	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03
Thermal Stress	288℃ 2min	No Blistering , No delaminating					
Flammability	A	V-0					
CTI (V)	A	600	600	600	600	600	600
Heat Resistance (℃/W)	(Internal TO-220 Test)	≤0.45	≤0.60	≤070	≤0.80	≤0.95	≤1.1
Thermal conductivity(W/mK)	(ASTM 5470)	2.2	2.2	2.2	2.2	2.2	2.2
Tg (℃)	(DSC)	130	130	130	130	130	130

*Heat resistance of 1.6mm substrate, the thickness of the copper foil under the 1oz measurements.