

## ISOLA LAMINATE SYSTEMS

### Product and Solutions Offering

Isola Laminate Systems' broad range of laminate, prepreg and foil products and solutions includes:

- **PWB Substrates**
  - FR-4s
  - Composites
- **Advanced PWB Substrates**
  - BT/Epoxy
    - G200
  - Polyimide
  - Specialty Prepregs
- **HDI Materials**
- **Signal Integrity Substrates**
- **Packaging Substrates**

### G200

#### BT/Epoxy Laminate and Prepreg

Isola Laminate Systems' G200 is a fully proven laminate and prepreg system designed to meet today's high reliability printed wiring board requirements. Blending bismaleimide/triazine and epoxy resin provides G200 with enhanced thermal, mechanical and electrical performance over most epoxy materials. G200 possesses performance characteristics that make it an excellent selection for large panel size, high layer count printed wiring boards.

#### Performance and Processing Advantages

- **High Tg - 185°C (DSC)**
  - Superior performance through multiple thermal excursions
  - Superior chemical and thermal resistance
- **Lower CTE from Ambient to 288°C**
- **Excellent Electrical Insulation in High Humidity and High Temperatures (CAF Resistance)**
- **Very Consistent Dimensional Stability**
  - Excellent layer-to-layer registration

#### Purchasing Information

- **Industry Approvals**
  - IPC 4101/30
  - UL Recognized - UL File Number E41625
- **Standard Availability**
  - Thicknesses:** 0.002" [.05 mm] to 0.125" [3.2 mm]
  - Available in sheet or panel form
  - Copper Foil Cladding:** 1/8 to 3 oz.
  - Options - HTE, Double-Treat
  - Prepregs:** Available in roll or panel form
  - Glass Styles - 106, 1080, 2313, 2116, 1652, 7628

## Ordering Information

Contact your local sales representative or the Inside Sales Department in La Crosse, WI.

Phone: 1-800-845-2904 or  
608-784-6070  
Fax: 1-800-344-1825 or  
608-791-2428

Isola Laminate Systems Corp.  
230 North Front Street  
La Crosse, WI 54601

For further information visit  
[www.isolalaminatesystems.com](http://www.isolalaminatesystems.com)

## G200 Typical Laminate Properties, 0.008" [0.20mm]

<u>PROPERTY</u>	<u>UNITS</u>	<u>IPC 4101</u>	<u>G200 VALUE</u>	<u>CONDITIONING</u>
Thickness	inches	<0.030	0.008	—
	mm	[<0.78]	[0.20]	—
Construction	—	—	2313/2116	—
Retained Resin	%	—	48	—
<b><u>Thermal</u></b>				
Tg, range (DSC)	°C	170-220	185	E-2/105
CTE - x-axis	ppm/°C	—	15	Ambient to Tg
y-axis	ppm/°C	—	15	Ambient to Tg
z-axis	ppm/°C	—	140	Ambient to 288°C
Solder Float, 288°C	seconds	10	>1200	E-2/105
<b><u>Electrical</u></b>				
Permittivity (Dk), max. @				
1 MHz (2 Fluid Cell)	—	4.8	4.1	C-24/23/50
500 MHz (HP 4291)	—	—	3.9	C-24/23/50
1 GHz (HP 4291)	—	—	3.9	C-24/23/50
Loss Tangent (DF), max. @				
1 MHz	—	0.020	0.013	C-24/23/50
500 MHz (HP 4291)	—	—	0.009	C-24/23/50
1 GHz (HP 4291)	—	—	0.009	C-24/23/50
Surface Resistivity, min.	megohms	1×10 <sup>6</sup>	1×10 <sup>8</sup>	C-96/35/90
	megohms	1×10 <sup>5</sup>	1×10 <sup>5</sup>	E-24/125
Volume Resistivity, min.	megohms-cm	1×10 <sup>6</sup>	1×10 <sup>7</sup>	C-96/35/90
	megohms-cm	1×10 <sup>5</sup>	1×10 <sup>7</sup>	E-24/125
Electric Strength, min.	volts/mil	737	1175	D-48/50
	[volts/mm]	[2.90×10 <sup>4</sup> ]	[4.6×10 <sup>4</sup> ]	D-48/50
Arc Resistance, min.	seconds	115	115	D-48/50
<b><u>Physical</u></b>				
Peel Strength, min. - 1 oz.	lb/in	—	7.0	Condition A
	[Kg/M]	—	[125]	Condition A
	lb/in	5.0	7.0	After Thermal Stress
	[Kg/M]	[90]	[125]	After Thermal Stress
	lb/in	1.9	5.0	E-1/150
	[Kg/M]	[35]	[90]	E-1/150
Flammability	—	V-0	V-0	UL94
Moisture Absorption, max.	%	≤0.80	0.14*	D-24/23

\*Material Thickness Tested - 0.028"

"The data, while believed to be accurate and based on analytical methods considered to be reliable, is for information purposes only. Any sales of these products will be governed by the terms and conditions of the agreement under which they are sold."