



## G200 Epoxy Laminate and Prepreg

Isola's **G200** product is a fully proven laminate and prepreg system designed to meet today's high reliability printed circuit board requirements. Blending Bismaleimide/Triazine (BT) 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 (PWB).

[www.isola-group.com/products/G200](http://www.isola-group.com/products/G200)

### ORDERING INFORMATION:

Contact your local sales representative or visit [www.isola-group.com](http://www.isola-group.com) for further information.

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High Performance

# G200

## Data Sheet

Tg 180, Td 325  
Dk 3.70, Df 0.013  
/30

### Features

- High Thermal Performance
  - ▶ Tg: 180°C (DSC)
  - ▶ Superior performance through multiple thermal excursions
  - ▶ Superior chemical and thermal resistance
- T260: 60 minutes
- T288: >10 minutes
- RoHS Compliant
- Low CTE from Ambient to 288°C
- Excellent Electrical Insulation in High Humidity and High Temperatures (CAF Resistance)
- Core Material Standard Availability
  - ▶ Thickness: 0.002" (0.05 mm) to 0.125" (3.2 mm)
  - ▶ Available in full size sheet or panel form
- Prepreg Standard Availability
  - ▶ Roll or panel form
  - ▶ Tooling of prepreg panels available
- Copper Foil Type Availability
  - ▶ Standard HTE Grade 3
  - ▶ RTF (Reverse Treat Foil)
  - ▶ VLP-2 (2 micron)
- Copper Weights
  - ▶ ½, 1 and 2 oz (18, 35 and 70 µm) available
  - ▶ Heavier copper available upon request
  - ▶ Thinner copper foil available upon request
- Glass Fabric Availability
  - ▶ Standard E-glass
  - ▶ Square weave glass fabric available
- Industry Approvals
  - ▶ IPC-4101D WAM1 /30
  - ▶ UL - File Number E41625

# G200 Specifications

Property		Typical Values			
				Units	Test Method
		Typical Value	Specification	Metric (English)	IPC-TM-650 (or as noted)
<b>Glass Transition Temperature (Tg) by DSC</b>		180	150-200	°C	2.4.25
<b>Decomposition Temperature (Td) by TGA @ 5% weight loss</b>		325	–	°C	ASTM D3850
<b>T260</b>		60	–	Minutes	ASTM D3850
<b>T288</b>		>10	–	Minutes	ASTM D3850
<b>CTE, Z-axis</b>	A. Pre-Tg	55	AABUS	ppm/°C	2.4.24
	B. Post-Tg	275	–		
<b>CTE, X-, Y-axes</b>	A. Pre-Tg	13/14	AABUS	ppm/°C	2.4.24
	B. Post-Tg	14/17	–		
<b>Z-axis Expansion (50-260°C)</b>		3.30	–	%	2.4.24
<b>Thermal Conductivity</b>		0.35	–	W/mK	ASTM D5930
<b>Thermal Stress 10 sec @ 288°C (550.4°F)</b>	A. Unetched	Pass	Pass Visual	Rating	2.4.13.1
	B. Etched				
<b>Dk, Permittivity (Laminate &amp; prepreg as laminated) Tested at 50% resin</b>	A. @ 100 MHz (HP4285A)	3.80	5.4	–	2.5.5.3
	B. @ 1 GHz (HP4291A)	3.70	–		2.5.5.9
	C. @ 2 GHz (Bereskin Stripline)	3.70	–		2.5.5.5
	D. @ 5 GHz (Bereskin Stripline)	3.65	–		2.5.5.5
	E. @ 10 GHz (Bereskin Stripline)	3.65	–		2.5.5.5
<b>Df, Loss Tangent (Laminate &amp; prepreg as laminated) Tested at 50% resin</b>	A. @ 100 MHz (HP4285A)	0.0150	0.035	–	2.5.5.3
	B. @ 1 GHz (HP4291A)	0.0150	–		2.5.5.9
	C. @ 2 GHz (Bereskin Stripline)	0.0130	–		2.5.5.5
	D. @ 5 GHz (Bereskin Stripline)	0.0150	–		2.5.5.5
	E. @ 10 GHz (Bereskin Stripline)	0.0150	–		2.5.5.5
<b>Volume Resistivity</b>	A. 96/35/90	–	1.0x10 <sup>6</sup>	MΩ-cm	2.5.17.1
	B. After moisture resistance	8.9x10 <sup>9</sup>	–		
	C. At elevated temperature	6.5x10 <sup>9</sup>	1.0x10 <sup>3</sup>		
<b>Surface Resistivity</b>	A. 96/35/90	–	1.0x10 <sup>4</sup>	MΩ	2.5.17.1
	B. After moisture resistance	2.21x10 <sup>6</sup>	–		
	C. At elevated temperature	4.4x10 <sup>9</sup>	1.0x10 <sup>3</sup>		
<b>Dielectric Breakdown</b>		>60	–	kV	2.5.6
<b>Arc Resistance</b>		130	60	Seconds	2.5.1
<b>Electric Strength (Laminate &amp; prepreg as laminated)</b>		45 (1175)	30 (750)	kV/mm (V/mil)	2.5.6.2
<b>Comparative Tracking Index (CTI)</b>		3 (175-249)	–	Class (Volts)	UL-746A ASTM D3638
<b>Peel Strength</b>	A. Low profile copper foil and very low profile – all copper weights >17 microns	1.14 (6.5)	0.70 (4.0)	N/mm (lb/inch)	2.4.8
	B. Standard profile copper	–	–		2.4.8.2
	1. After thermal stress	0.96 (5.5)	0.80 (4.5)		2.4.8.3
	2. At 125°C (257°F)	–	0.70 (4.0)		–
	3. After process solutions	0.90 (5.1)	0.55 (3.0)	–	–
<b>Flexural Strength</b>	A. Lengthwise direction	86,900	–	lb/inch <sup>2</sup>	2.4.4
	B. Crosswise direction	73,600			
<b>Tensile Strength</b>	A. Lengthwise direction	51,551	–	lb/inch <sup>2</sup>	–
	B. Crosswise direction	42,436			
<b>Young's Modulus</b>	A. Grain direction	3489	–	ksi	ww
	B. Fill direction	3199			
<b>Poisson's Ratio</b>	A. Grain direction	0.182	–	–	xx
	B. Fill direction	0.160			
<b>Moisture Absorption</b>		0.2	–	%	2.6.2.1
<b>Flammability (Laminate &amp; prepreg as laminated)</b>		V-0	–	Rating	UL 94
<b>Max Operating Temperature</b>		140	UL Cert	°C	–

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.

[www.isola-group.com/products/G200](http://www.isola-group.com/products/G200)

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