



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

ORDERING INFORMATION:

Contact your local sales representative or visit 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-4101C /30
 - ▶ UL - File Number E41625

G200 Specifications

Property		Typical Values			
				Units	Test Method
		Typical Value	Specification	Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		180	150-200	°C	2.4.25
Decomposition Temperature (Td) by TGA @ 5% weight loss		325	–	°C	ASTM D3850
T260		60	–	Minutes	ASTM D3850
T288		>10	–	Minutes	ASTM D3850
CTE, Z-axis	A. Pre-Tg	55	AABUS	ppm/°C	2.4.24
	B. Post-Tg	275	–		
CTE, X-, Y-axes	A. Pre-Tg	13/14	AABUS	ppm/°C	2.4.24
	B. Post-Tg	14/17	–		
Z-axis Expansion (50-260°C)		3.30	–	%	2.4.24
Thermal Conductivity		0.35	–	W/mK	ASTM D5930
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched	Pass	Pass Visual	Rating	2.4.13.1
	B. Etched				
Dk, Permittivity (Laminate & prepreg as laminated) Tested at 50% resin	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
Df, Loss Tangent (Laminate & prepreg as laminated) Tested at 50% resin	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
Volume Resistivity	A. 96/35/90	–	1.0x10 ⁶	MΩ-cm	2.5.17.1
	B. After moisture resistance	8.9x10 ⁸	–		
	C. At elevated temperature	6.5x10 ⁸	1.0x10 ³		
Surface Resistivity	A. 96/35/90	–	1.0x10 ⁴	MΩ	2.5.17.1
	B. After moisture resistance	2.21x10 ⁶	–		
	C. At elevated temperature	4.4x10 ⁸	1.0x10 ³		
Dielectric Breakdown		>60	–	kV	2.5.6
Arc Resistance		130	60	Seconds	2.5.1
Electric Strength (Laminate & prepreg as laminated)		45 (1175)	30 (750)	kV/mm (V/mil)	2.5.6.2
Comparative Tracking Index (CTI)		3 (175-249)	–	Class (Volts)	UL-746A ASTM D3638
Peel Strength	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)	–	–
Flexural Strength	A. Lengthwise direction	86,900	–	lb/inch ²	2.4.4
	B. Crosswise direction	73,600			
Tensile Strength	A. Lengthwise direction	51,551	–	lb/inch ²	–
	B. Crosswise direction	42,436			
Young's Modulus	A. Grain direction	3489	–	ksi	ww
	B. Fill direction	3199			
Poisson's Ratio	A. Grain direction	0.182	–	–	xx
	B. Fill direction	0.160			
Moisture Absorption		0.2	–	%	2.6.2.1
Flammability (Laminate & prepreg as laminated)		V-0	–	Rating	UL 94
Max Operating Temperature		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.

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04/14 DSG200B

