



TerraGreen® Copy

Halogen-free, Extremely Low Loss Material

TerraGreen® 400G laminate materials are our most advanced ultra high speed, extremely low loss design solution.

TerraGreen® 400G is our Halogen Free material solution for next generation 5G infrastructure and computing applications. Our novel resin system has been engineered for high data rates with excellent cost for loss performance.

TerraGreen® is lead free compatible and can be processed utilizing standard PCB equipment and processing steps.

TerraGreen® meets UL 94 V-0 and is halogen free.

Product Attributes

High Thermal Reliability , High Speed Digital , High Density Interconnect , Halogen Free

Typical Market Applications

Aerospace & Defense , Computing, Storage & Peripherals , Networking & Communication Systems

ORDERING INFORMATION:

Contact your local sales representative or visit www.isola-group.com for further information.

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High Thermal Reliability

Data Sheet

Tg 200°C

Td 390°C

Dk 2.9

Df 0.0018

UL - File Number E41625

Last Updated September 9, 2019
Revision No: C

Product Features

- Industry Recognition
 - UL File Number: E41625
- Performance Attributes
 - CAF resistant
 - Halogen free
- Processing Advantages
 - FR-4 process compatible
 - Good flow and fill

Product Availability

- Standard Material Offering: Laminate
 - 2 to 18 mil (0.05 to 0.46 mm)
- Copper Foil Type
 - VLP-2 (2 micron), 1 oz and below
- Copper Weight
 - 1/3, 1/2, 1 oz (12, 18 and 35 µm) available
 - Heavier copper available
- Standard Material Offering: Prepreg
 - Tooling of prepreg panels
- Glass Fabric Availability
 - E-glass
 - Low Dk glass
 - Square weave glass
 - Mechanically spread glass

Property		Typical Value	Units	Test Method
			Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		200	°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss		390	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	60	Minutes	2.4.24.1
Z-Axis CTE	50 to 260°C, (Total Expansion)	2.6	%	2.4.24C
X/Y-Axis CTE	Pre-Tg	16	ppm/°C	2.4.24C
Thermal Conductivity		TBD	W/mK	ASTM E1952
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	@ 10 GHz	2.98	—	2.5.5.5
Df, Loss Tangent	@ 10 GHz	0.0018	—	Bereskin Stripline
Peel Strength	Low profile copper foil and very low profile copper foil all copper foil >17 µm [0.669 mil]	0.53 (3.0)	N/mm (lb/inch)	2.4.8C
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		130	°C	UL 796

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.

[172.18.36.234/products/all-printed-circuit-materials/terragreen-copy/](https://www.isola.com/172.18.36.234/products/all-printed-circuit-materials/terragreen-copy/)

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NOTE

Visit our site <http://www.isola-group.com> for more details.

Revisions:

A: Initial release - 4/17

B: Corrected units for Flexural and Tensile Strength - 8/18

C: Change MOT to RTI 5/19