TerraGreen® 400G (RF/MW)

Halogen-free, Extremely Low Loss Material

IPC-4101 /134 UL - File E41625 Grade PCL-FR-370HR

TerraGreen® 400G laminate materials are our most advanced ultra high speed, halogen free ultra low loss design solutionnargap.

PRODUCT FEATURES

Industry Recognition

- UL File Number: E41625
- RoHS Compliant

Performance Attributes

- CAF resistant
- Lead-free assembly compatible
- 6x 260°C reflow capable
- 6x 288°C solder float capable

Processing Advantages

- FR-4 process compatible
- Excellent fill and flow for heavy copper
- Multiple lamination cycles
- HDI technology compatible

PRODUCT AVAILABILITY

Standard Material Offering: Laminate

- 2 to 20 mil (0.05 to 0.51 mm)

Copper Foil Type

- HVLP3 (VLP1) ≤1.1 micron Rz JIS

Copper Weight

- ½, 1 oz (18 and 35 µm) available

Standard Material Offering: Prepreg

Glass Fabric Availability

- Low Dk glass
- Square weave glass
- Mechanically spread glass

ORDERING INFORMATION:

Contact your local sales representative or contact info@isola-group.com for further information.

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

TerraGreen® 400G (RF/MW) is lead free compatible and can be processed utilizing standard PCB equipment and processing steps.

TerraGreen® 400G (RF/MW) meets UL 94 V-0 and is halogen free.

PRODUCT ATTRIBUTES

HALOGEN FREE | HIGH THERMAL RELIABILITY | RADIO FREQUENCY & MICROWAVE

TYPICAL MARKET APPLICATIONS

AUTOMOTIVE & TRANSPORTATION | RADIO FREQUENCY & MICROWAVE | AEROSPACE & DEFENSE

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Typical Values Table

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
Glass Transition Temperature (Tg) by DMA		215	—	2.4.24.4
Glass Transition Temperature (Tg) by TMA		180	°C	2.4.24C
Decomposition Temperature (Td) by TGA @ 5% weight loss		>380	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	T288	60+	Minutes	2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg C.	37 170 1.8	ppm/°C	2.4.24C
X/Y-Axis CTE		12/13	ppm/°C	2.4.24C
Thermal Conductivity		0.54	W/m·K	ASTM E1952
Thermal Stress 10 sec @ 288ºC (550.4ºF)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 5 GHz B. @ 10 GHz C. @ 20 GHz	3.15	—	2.5.5.5
Df, Loss Tangent	A. @ 5 GHz B. @ 10 GHz C. @ 20 GHz	0.0018	—	Bereskin Stripline
Peel Strength		0.7 (4.1)	N/mm (lb/inch)	2.4.8C
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		140	°C	—

NOTES

Notes:
All data is preliminary and subject to chaange
*** Data was developed using 55% RC rigid laminate**
Revisions:
A: Preliminary Release
B-Corrected CTE data-5/24