

UL - File Number E41625

IS550H is our Halogen Free laminate solution for high power & voltage applications that require extreme thermal stability.

PRODUCT FEATURES

Industry Recognition

- UL File Number: E41625
- RoHS Compliant

Performance Attributes

- CAF resistant
- Low moisture absorption
- Lead-free assembly compatible
- Halogen free
- 0.8 mm pitch capable
- 6x 260°C reflow capable
- 6x 288°C solder float capable

PRODUCT AVAILABILITY

Standard Material Offering: Laminate

- 2 to 60 mil (0.05 to 1.5 mm)

Copper Foil Type

- HTE Grade 3
- RTF (Reverse Treat Foil)

Copper Weight

- ½ to 2 oz (18 to 70 µm) available
- Heavier copper available

Standard Material Offering: Prepreg

- Tooling of prepreg panels
- Moisture barrier packaging

Glass Fabric Availability

- E-glass
- Mechanically spread glass

IS550H was developed in conjunction with a consortium of industry experts for high power & high voltage applications and PEV & HEV automotive electrification. The resulting solution addresses critical application needs for use in a harsh environment where very demanding, long term thermal reliability performance, extreme thermal cycling and very high voltage CAF & electro-migration resistance is required.

PRODUCT ATTRIBUTES



HALOGEN
FREE



HIGH THERMAL
RELIABILITY



HIGH
TEMPERATURE

TYPICAL MARKET APPLICATIONS



AUTOMOTIVE &
TRANSPORTATION



AEROSPACE
& DEFENSE

ORDERING INFORMATION:

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

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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
Decomposition Temperature (Td) by TGA @ 5% weight loss	400	°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	A. Pre-Tg B. Post-Tg C. 50 to 260°C, (Total Expansion)	38 210 2.2	ppm/°C ppm/°C %	2.4.24C
X/Y-Axis CTE	Pre-Tg	13-17	ppm/°C	2.4.24C
Thermal Conductivity		0.7	W/m-K	ASTM E1952
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 2 GHz B. @ 5 GHz C. @ 10 GHz	4.50 4.43 4.43	—	2.5.5.5
Df, Loss Tangent	A. @ 2 GHz B. @ 5 GHz C. @ 10 GHz	0.014 0.014 0.016	—	2.5.5.5
Volume Resistivity	A. C-96/35/90 B. At elevated temperature	5.2×10^7 3.2×10^8	MΩ-cm	2.5.17.1
Surface Resistivity	A. C-96/35/90 B. At elevated temperature	1.0×10^8 3.9×10^8	MΩ	2.5.17.1
Dielectric Breakdown		60	kV	2.5.6B
Arc Resistance		>160	Seconds	2.5.1B
Electric Strength (Laminate & laminated prepreg)		46.9(1190)	kV/mm (V/mil)	2.5.6.2A
Comparative Tracking Index (CTI)		3	Class (Volts)	UL 746A ASTM D3638
Peel Strength	A. Standard profile copper 1. After thermal stress 2. At 125°C (257°F)	1.45 (8.2) 1.35(7.6)	N/mm (lb/inch)	2.4.8.2A 2.4.8.3
Flexural Strength	A. Length direction B. Cross direction	60.9 50.8	ksi	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	31 27	ksi	ASTM D3039
Moisture Absorption		0.25	%	2.6.2.1A
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		150	°C	UL 796

NOTES

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

Revisions: A: Initial release - 9/19

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