

## 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



### TYPICAL MARKET APPLICATIONS



### ORDERING INFORMATION:

Contact your local sales representative or contact [info@isola-group.com](mailto:info@isola-group.com) for further information.

#### Isola Group

6565 West Frye Road Chandler,  
AZ 85226 Phone: 480-893-6527  
Fax: 480-893-1409

#### Isola Asia Pacific

(Hong Kong) Ltd. 12/F,  
Kin Sang Commercial Centre,  
49 King Yip Street, Kwun Tong,  
Kowloon,  
Hong Kong Phone: 852-2418-1318  
Fax: 852-2418-1533

#### Isola GmbH

Isola Strasse 2 D-52348 Düren,  
Germany Phone: 49-2421-8080  
Fax: 49-2421-808164

# 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	$5.2 \times 10^7$ $3.2 \times 10^8$	MΩ-cm	2.5.17.1
Surface Resistivity	A. C-96/35/90 B. At elevated temperature	$1.0 \times 10^8$ $3.9 \times 10^8$	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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