

#### UL - File Number E41625

Tachyon® 200JV laminate materials are latest generation of advanced ultra-high speed, halogen free, ultra-low loss materials.

#### PRODUCT FEATURES

##### Industry Recognition

- UL File Number: E41625
- RoHS Compliant

##### Performance Attributes

- CAF resistant
- Low moisture absorption
- Halogen free
- 6x 260°C reflow capable
- 6x 288°C solder float capable

##### Processing Advantages

- FR-4 process compatible
- Excellent Fill and Flow
- Multiple lamination cycles
- HDI technology compatible

#### PRODUCT AVAILABILITY

##### Standard Material Offering: Laminate

- 2 to 10 mil (0.05 to 0.25 mm)

##### Copper Foil Type

- HVLP3 (VLP1) ≤1.1 micron Rz JIS

##### Copper Weight

- ½, ½, 1 oz (12, 18 and 35 µm) available
- Thinner copper foil available

##### Standard Material Offering: Prepreg

- Tooling of prepreg panels
- Moisture barrier packaging

##### Glass Fabric Availability

- Low Dk glass
- Mechanically spread glass

Tachyon® 200JV is our latest Halogen Free material solution for next generation AI Data Center Server, 5G infrastructure, high end computing as well as wired & wireless communications. Our most advanced resin system has been developed with ultra smooth HVLP4/5 copper foil and the most advanced glass offerings in the industry to deliver a solution capable of meeting the most demanding high data rate requirements with excellent cost for loss performance.

The Tachyon® 200JV resin system has proven superior CAF performance on tight pitch testing. CAF performance is enhanced by the resin systems excellent interlaminar and bond line adhesion strength.

Tachyon® 200JV is lead free compatible and sequential lamination capable and can be processed utilizing standard PCB equipment and processing steps. Tachyon® 200JV meets UL94 V-0.

#### 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
Glass Transition Temperature (Tg) by DMA		222	°C	2.4.24.4
Glass Transition Temperature (Tg) by TMA		185	°C	2.4.24C
Decomposition Temperature (Td) by TGA @ 5% weight loss		400C	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T288 B. T300	N/A >120	Minutes	2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg C. 50 to 260°C, (Total Expansion)	31 190 1.9	ppm/°C ppm/°C %	2.4.24C
X/Y-Axis CTE		6/6	ppm/°C	2.4.24C
Thermal Conductivity		0.54	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. @ 10 GHz B. @ 20 GHz	3.06	—	2.5.5.5
Df, Loss Tangent	A. @ 10 GHz B. @ 20 GHz	0.0009	—	2.5.5.5
Volume Resistivity	C-96/35/90	—	MΩ·cm	2.5.17.1
Surface Resistivity	C-96/35/90	—	MΩ	2.5.17.1
Dielectric Breakdown		—	kV	2.5.6B
Arc Resistance		—	Seconds	2.5.1B
Electric Strength (Laminate & laminated prepreg)		—	kV/mm (V/mil)	2.5.6.2A
Comparative Tracking Index (CTI)		—	Class (Volts)	UL 746A ASTM D3638
Peel Strength	A. Low profile and very low profile copper foil B. Low profile and very low profile copper foil ... After thermal stress	(3.2)	N/mm (lb/inch)	2.4.8C 2.4.8.2A
Flexural Strength	A. Length direction B. Cross direction	—	MPa (kpsi)	2.4.4B
Tensile Strength	A. Length direction B. Cross direction	—	MPa (kpsi)	ASTM D3039
Young's Modulus	A. Length direction B. Cross direction	—	GPa(kpsi)	ASTM D790-15e2
Flexural Modulus	A. Lengthwise B. Crosswise	—	GPa (kpsi)	ASTM D790-15e2
Poisson's Ratio	A. Length direction B. Cross direction	—	—	ASTM D3039
Moisture Absorption		<0.1	%	2.6.2.1A
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Relative Thermal Index (RTI)		—	°C	UL 746

## NOTES

### Notes:

**All data is preliminary and subject to change**

**\* Data was developed using 55% RC rigid laminate**

Revisions:

A: Preliminary Release

B: Corrected units of Youngs Modulus from MPa to GPa - 1/24

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