370 TURBO®

High Performance Laminate and Prepreg Materials

370 TURBO offers a 175°C glass transition temperature (Tg) and 340°C degradation temperature (Td), making it an ideal choice for the most thermally demanding multilayer Printed Wiring Board (PWB) applications.

The application of TURBO® manufacturing to the industry-leading 370 system provides this dramatic improvement in thermal performance and reliability. TURBO technology also results in faster curing, allowing lamination press cycle time reductions of 30% or more. This combination provides not only improved performance but retains FR-4 processability, with mechanical, chemical and moisture resistance and laser fluorescing and UV blocking properties that equal or exceed the performance of any other FR-4 material available.

Product Attributes

Legacy Materials

ORDERING INFORMATION:

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

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Legacy Materials

Data Sheet

Tg 175°C
Td 340°C
Dk 4.10
Df 0.022

IPC-4101 - / 21 / 24 / 26 / 121 / 124

UL - File Number E41625

Last Updated June 22, 2020
Revision No: B

Product Features

- Industry Recognition
  - UL File Number: E41625
  - Qualified to UL's MCIL Program
  - RoHS Compliant
- Performance Attributes
  - Lead-free assembly compatible
- Processing Advantages
  - FR-4 process compatible
  - UV blocking and AOI fluorescence

Product Availability

- Standard Material Offering: Laminate
  - 2 to 125 mil (0.05 to 3.2 mm)
  - Available in full size sheet or panel form
- Copper Foil Type
  - HTE Grade 3
  - RTF (Reverse Treat Foil)
- Copper Weight
  - ½ to 2 oz (18 to 70 µm) available
  - Heavier copper available
  - Thinner copper foil available
- Standard Material Offering: Prepreg
  - Roll or panel form
  - Tooling of prepreg panels
- Glass Fabric Availability
  - E-glass
  - Square weave glass

370 TURBO® Typical Values

Last Updated Jun 22, 2020

Property		Typical Value	Units	Test Method
			Metric (English)	IPC-TM-650 (or as noted)
Test data generated from rigid laminate		50	%	2.3.16.2
Glass Transition Temperature (Tg) by DSC		175	°C	2.4.25C
Decomposition Temperature (Td) by TGA @ 5% weight loss		340	°C	2.4.24.6
Time to Delaminate by TMA (Copper removed)	A. T260 B. T288	45 >10	Minutes	2.4.24.1
Z-Axis CTE	A. Pre-Tg B. Post-Tg C. 50 to 260°C, (Total Expansion)	50 250 3.5	ppm/°C ppm/°C %	2.4.24C
X/Y-Axis CTE	Pre-Tg	13	ppm/°C	2.4.24C
Thermal Conductivity		0.35	W/mK	ASTM E1952
Thermal Stress 10 sec @ 288ºC (550.4ºF)	A. Unetched B. Etched	Pass	Pass Visual	2.4.13.1
Dk, Permittivity	A. @ 2 GHz B. @ 5 GHz	4.10 4.00	—	Bereskin Stripline
Df, Loss Tangent	@ 2 GHz	0.022	—	Bereskin Stripline
Dk, Permittivity	@ 5 GHz	0.024	—	Bereskin Stripline
Volume Resistivity	A. C-96/35/90 B. After moisture resistance C. At elevated temperature	— 3.0×10^8 7.0×10^8	MΩ-cm	2.5.17.1
Surface Resistivity	A. C-96/35/90 B. After moisture resistance C. At elevated temperature	— 3.0×10^6 7.0×10^8	MΩ	2.5.17.1
Dielectric Breakdown		>50	kV	2.5.6B
Arc Resistance		125	Seconds	2.5.1B
Electric Strength (Laminate & laminated prepreg)		52 (1300)	kV/mm (V/mil)	2.5.6.2A
Comparative Tracking Index (CTI)		3 (175-249)	Class (Volts)	UL 746A ASTM D3638
Peel Strength	A. Low profile copper foil and very low profile copper foil all copper foil >17 µm [0.669 mil] B. Standard profile copper 1. After thermal stress 2. At 125ºC (257ºF) 3. After process solutions	1.23 (7.0) 1.58 (9.0) 1.23 (7.0) 1.58 (9.0)	N/mm (lb/inch)	2.4.8C 2.4.8.2A 2.4.8.3 2.4.8.3
Moisture Absorption		0.15	%	2.6.2.1A
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.

NOTE

Visit our site http://www.isola-group.com for more details.
Revisions:
A: Initial release - 4/17
B: Change MOT to RTI 5/19