



IS680

185HR is a proprietary, high performance resin system with a Tg of 180°C (by DSC) for multilayer Printed Wiring Board (PWB) applications where maximum thermal performance and reliability are required.

185HR laminate and prepreg products are manufactured using Isola's patented technology, reinforced with electrical grade (E-glass) glass fabric. This system delivers a 340°C decomposition temperature, a lower Z-axis expansion and offers lower loss compared to competitive products in this space.

The 185HR system is also laser fluorescing and UV blocking for maximum compatibility with Automated Optical Inspection (AOI) systems, optical positioning systems and photoimageable solder mask imaging.

ORDERING INFORMATION:

Contact your local sales representative or visit www.isola-group.com for further information.

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Performance

Tg 200°C

Td 380°C

Dk 2.80 to 3.45

Df 0.0030 to 0.0036

zIPC- 4101C /21 /24 /26 /98 /101 /126

UL - File Number E41625

Qualified to UL's MCIL Program

Product Features

- Processing Advantages

Product Availability

- Available in full size sheet or panel form
- Roll or panel form
- Glass Fabric Availability

IS680 Specifications

Property		Typical Values			
		Typical Value	Specification	Units	Test Method
				Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		180	170-200	°C	2.4.25
Glass Transition Temperature (Tg) by DMA		185	170-200	°C	2.4.25
Decomposition Temperature (Td) by TGA @ 5% weight loss		340	—	°C	
		60	—		
		>15	—		
	A. Pre-Tg	40	AABUS		2.4.24
	B. Post-Tg	220	—		
	A. Pre-Tg	13/14	AABUS		2.4.24
	B. Post-Tg	14/17	—		
		2.7	—	%	2.4.24
Thermal Conductivity		0.4	—	W/mK	
Thermal Stress 10 sec @ 288°C (550.4°F)	A. Unetched	Pass	Pass Visual		2.4.13.1
	B. Etched				
	A.	4.13	5.4	-	
	B.	4.04	—		
	C.	4.01	—		
	D.	3.88	—		
	E.	3.88	—		
	F.	0.0158	5.4		
	G.	0.0192	—		
	H.	0.0200	—		
	I.	0.0235	—		
	J.	0.0236	—		
Volume Resistivity	A.	—	1.0x106	MΩ-cm	2.5.17.1
	B. After moisture resistance	3.0x108	—		
	C. At elevated temperature	7.0x108	1.0x103		
Surface Resistivity	A.	—	1.0x106	MΩ	2.5.17.1
	B. After moisture resistance	3.0x106	—		
	C. At elevated temperature	2.0x108	1.0x103		
Dielectric Breakdown		>50	—	kV	2.5.6
Arc Resistance		115	60	Seconds	2.5.1
		54 (1350)	30 (750)		
Comparative Tracking Index (CTI)		3 (175-249)	—	Class (Volts)	
Peel Strength	A.	0.969 (5.5)	0.70 (4.0)		2.4.8.3
	B. Standard profile copper				
	1. After thermal stress				
	2. At 125°C (257°F)				
	3. After process solutions	1.06 (5.9)	0.80 (4.5)		
		1.06 (5.9)	0.70 (4.0)		
		0.969 (5.5)	0.55 (3.5)		
Flexural Strength	A.	97,100	—	lb/inch2	2.4.4
	B.	54,100			
Tensile Strength	A.	53,337	—	lb/inch2	
	B.	35,678			
	A.	3770	—		
	B.	3337			
Poisson's Ratio	A.	0.172	—	-	
	B.	0.155			
Moisture Absorption		0.15	—	%	2.6.2.1
		V-0	—		
Max Operating Temperature		130	UL Cert	°C	

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.

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