



IS680 280

IS680 laminate materials exhibit exceptional electrical properties which are very stable over a broad frequency and temperature range.

IS680 is suitable for many of today's commercial RF/ microwave printed circuit designs. It features a dielectric constant (Dk) that is stable between -55°C and +125°C up to W-band frequencies. In addition, IS680 offers a lower dissipation factor (Df), making it an extremely cost-effective alternative to PTFE and other commercial microwave laminate materials in double sided applications.

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 360°C
Dk 2.80-3.45
Df 0.0025-0.0035

zIPC- 4101C /21 /24 /26 /98 /101 /126
UL - File Number E41625
Qualified to UL's MCIL Program

Product Features

- Industry Recognition
 - UL File Number: E41625
 - RoHS Compliant
- Performance Attributes
- Processing Advantages

Product Availability

- Standard Material Offering: Laminate
 - 2 to 60 mil (0.5 to 1.5 mm)
 - Available in full size sheet or panel form
- Copper Foil Type
 - HTE Grade 3
- Copper Weight
 - ½ to 2 oz (18 to 70 µm) available
 - Heavier copper available
 - Thinner copper foil available
- Standard Material Offering: Prepreg
- Glass Fabric Availability

IS680 280 Specifications

Property		Typical Value	Units	Test Method
			Metric (English)	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC		200	°C	2.4.25
Decomposition Temperature (Td) by TGA @ 5% weight loss		360	°C	2.4.24.2
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)	44.7 191 2.9	ppm/°C ppm/°C %	2.4.24
X/Y-Axis CTE	Pre-Tg	12	ppm/°C	2.4.24.1
Thermal Conductivity		0.32	W/mK	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	2.80 3.00 3.20	—	Bereskin Stripline
Df, Loss Tangent	A. @ 2 GHz B. @ 5 GHz C. @ 10 GHz	0.0025 0.0030 0.0030	—	Bereskin Stripline
Volume Resistivity	C-96/35/90	1.33×10^7	MΩ-cm	2.5.17.1
Surface Resistivity	C-96/35/90	1.33×10^5	MΩ	2.5.17.1
Dielectric Breakdown		45.4	kV	2.5.6
Arc Resistance		139	Seconds	2.5.1
Electric Strength (Laminate & laminated prepreg)		45 (1133)	kV/mm (V/mil)	2.5.6.2
Comparative Tracking Index (CTI)		2	Class (Volts)	UL 746A ASTM D3638
Peel Strength	1 oz. EDC foil	0.70 (4.01)	N/mm (lb/inch)	2.4.8
Flexural Strength	A. Length direction B. Cross direction	37,500 28,500	lb/inch ²	2.4.4
Tensile Strength	A. Length direction B. Cross direction	28,000 26,000	lb/inch ²	ASTM D3039
Poisson's Ratio	A. Length direction B. Cross direction	0.122 0.120	—	ASTM D3039
Moisture Absorption		0.10	%	2.6.2.1
Flammability (Laminate & laminated prepreg)		V-0	Rating	UL 94
Max Operating Temperature		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.

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