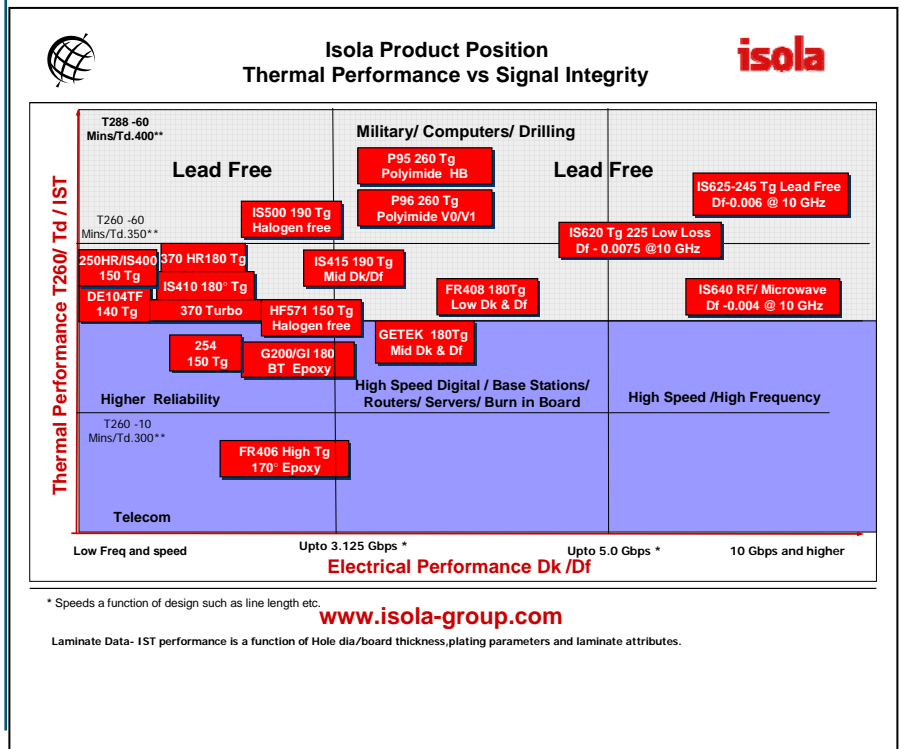




Low Loss Flat Response Over Frequency

IS620 is the first material in the digital-products class built upon existing technologies, yet offering significant advantages for today's digital world. The resin matrix of IS620 is uniquely formulated for high-speed applications ranging from 2 to 15 GHz, providing a low, flat loss response over the entire range. It is optimal for digital designs and is available in both laminate and prepreg in all typical thicknesses and standard panel sizes. IS620 offers the designer and fabricators the flexibility of digital design, the assurance of supply, and the ease of conventional FR-4 processing. IS620 is the first material in its class to offer the **complete package** of each of the critical items: low loss with a flat response over frequency, availability in both laminate and prepreg form in typical thicknesses and sizes, and the ability to use conventional fabrication techniques.



Performance and Processing Advantages

- **High Thermal Performance**
Tg of 215 °C (DSC)
Td of 353 °C (TGA)
- **Improved Dielectric Properties**
Supports increased signal speeds
Flat loss response over frequency
- **UV Blocking and AOI Fluorescence**
High throughput and accuracy during PCB fabrication and assembly
- **PCB Fabrication**
Utilizes conventional FR-4 processes

Purchasing Information

- **Industry Approvals**
IPC-4101A /30
UL Recognized – GPY, File Number E41625
- **Standard Availability Thickness:** 0.002" [.05 mm] to 0.093" [2.4 mm] Available in sheet or panel form
- **Copper Foil Cladding:** Grade 3 (HTE), ½, 1 and 2 oz. greater on request.
- **Foil Options:** Double treat, reverse treat
- **Prepregs:** Available in roll or panel form
- **Glass Styles:** 106, 1080, 2113, 3070, 2116, 1652

IS620 Typical Laminate Properties, 0.008” [0.20mm]

		English			Metric			Test Method
		Value	Specification	Units	Value	Specification	Units	IPC-TM-650 (or as noted)
Glass Transition Temperature (Tg) by DSC, spec minimum		215	150 - 200	°C	215	150 - 200	°C	2.4.25
Decomposition Temperature (Td) by TGA		@ 1% weight loss @ 5% weight loss	353	—	353	—	°C	ASTM D3850
Thermal								
CTE, Z-axis	Pre-Tg	55	AABUS	ppm/°C	55	AABUS	ppm/°C	2.4.24
	Post-Tg	110	—		110	—		
CTE, X-, Y-axes	Pre-Tg	13/14	AABUS	ppm/°C	13/14	AABUS	ppm/°C	2.4.24
	Post-Tg	—	—		—	—		
% Z-Axis Expansion (50 – 260C)		2.80	AABUS	%	2.80	AABUS	%	2.4.24
Thermal Stress 10 Sec @ 288°C (550.4°F), spec minimum		Unetched Etched	Pass Pass	Pass Visual Pass Visual	Pass Visual Pass Visual	Rating		2.4.13.1
Electrical								
Dk (Permittivity, Laminate & prepreg as laminated)	2 Ghz	3.78	5.40	—	3.78	5.40	—	2.5.5.3
	5 Ghz	3.77	—		3.77	—		2.5.5.9
	10 Ghz	3.76	—		3.76	—		2.5.5.5
Df, Loss Tangent, spec maximum (Laminate & prepreg as laminated)	2	.0086	0.0350	—	.0086	0.0350	—	2.5.5.3
	5	.0088	—		.0088	—		2.5.5.9
	10	.0089	—		.0089	—		2.5.5.5
Volume Resistivity, spec minimum	96/35/90	8.98x10 ⁸	10 ⁴	MΩ -cm	8.98x10 ⁸	10 ⁴	MΩ -cm	2.5.17.1
	After moisture resistance At elevated temperature	6.50x10 ⁸	10 ³		6.50x10 ⁸	10 ³		
Surface Resistivity, spec minimum	96/35/90	2.21x10 ⁶	10 ⁴	MΩ	2.21x10 ⁶	10 ⁴	MΩ	2.5.17.1
	After moisture resistance At elevated temperature	4.40x10 ⁹	10 ³		4.40x10 ⁹	10 ³		
Thermal Conductivity		.30-.35	—	W/mK	.30-.35	—	W/mK	ASTM D5930
Dielectric Breakdown, spec minimum		>50	40	kV	>50	40	kV	2.5.6
Arc Resistance, spec minimum		110	60	Seconds	110	60	Seconds	2.5.1
Electric Strength, spec minimum (Laminate & prepreg as laminated)		1400	736	V/mil	55000	29000	V/mm	2.5.6.2
Comparative Tracking Index (CTI)		2	—	Volts	2	—	—	UL-746A ASTM D3638
Physical								
Peel Strength, spec minimum	Low profile copper foil and very low profile – all copper weights >17 microns Standard profile copper 1. After thermal stress 2. At 125°C (257°F) 3. After process solutions	6.0	4.0	(lb/inch)	120	70	N/mm	2.4.8 2.4.8.2 2.4.8.3
		7.0	—		140	—		
		6.0	6.0		120	105		
		7.0	4.0		140	80		
Flexural Strength, minimum	Lengthwise direction Crosswise direction	77000	60,190	lb/inch ²	690	415	N/mm ²	2.4.4
		50000	50,040		448	345		
Moisture Absorption, spec maximum		.28	0.80	%	.28	0.80	%	2.6.2.1
UL		Value		IPC-4101 Specification		Unit		Test Method
CTI		2						
HWI		0						
HAI		3						
Max Operating Temp		140						
DSR		yes						

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.

ORDERING INFORMATION:
 Contact your local sales representative or the Customer Service Department in Chandler, AZ
 Isola Group 3100 W Ray Road, Chandler, AZ 85226
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