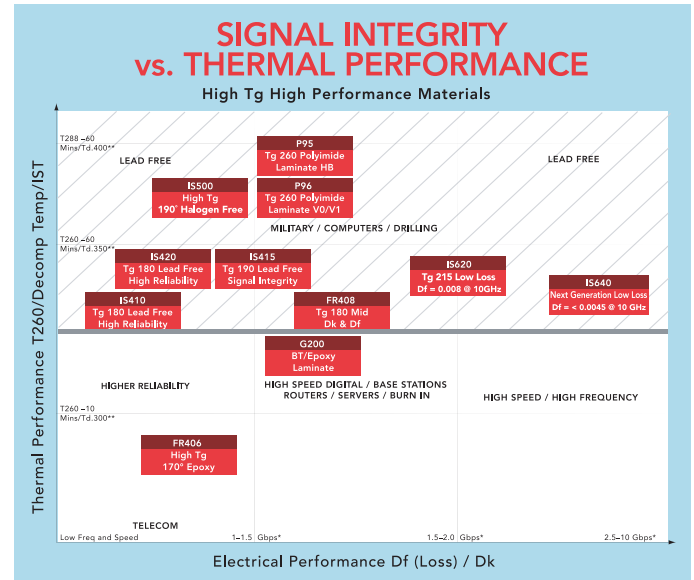




## Tetrafunctional Epoxy Laminate and Prepreg

Isola Laminate Systems' IS402 consists of a modified tetrafunctional epoxy resin system engineered for multilayer applications that require performance characteristics exceeding those of difunctional epoxies. The formulation of IS402 is designed to enhance throughput and accuracy of laser based Automated Optical Inspection (AOI) equipment. IS402 offers superior resistance to chemical and thermal degradation.



## Performance and Processing Advantages

- **High Tg — 140 °C**  
Superior performance through multiple thermal Excursions Resistance to measling Extended capabilities
- **UV Blocking and AOI Compatible**  
Increased throughput and accuracy Compatible with all AOI equipment
- **FR-4 System**  
Processes as a standard FR-4

## Purchasing Information

- **Industry Approvals**  
IPC-4101A /21  
UL Recognized – FR-4, File Number E41625  
(Part of Isola's FR-4 Family)
- **Availability**  
**Thickness:** 0.002" [.05 mm] to 0.125" [3.2 mm]  
Available in sheet or panel form
- **Copper Foil Cladding:** Grade 3 (HTE),  $\sqrt{2}$ , 1 and 2 oz.
- **Foil Options:** Double treat, reverse treat
- **Prepregs:** Available in roll or panel form
- **Glass Styles:** 106, 1080, 2113, 2313, 2661, 1652, 7628, 7629

# IS402 Typical Laminate Properties, 0.008" [0.20mm]

PROPERTY	UNITS	IPC-4101A Spec /21	IS402 Value	CONDITIONING	
Thickness	inches	<0.0197	0.008	—	
	mm	[<0.50]	[0.20]	—	
Glass Construction	—	—	2-2116	—	
Retained Resin	%	—	44	—	
<b>Thermal</b>					
Tg (DSC)	°C	110 to 150	140	E-2/105	
CTE x-axis	ppm/°C	—	13	Ambient to Tg	
	y-axis	ppm/°C	13	Ambient to Tg	
z-axis	ppm/°C	—	165	Ambient to 288°C	
Thermal Stress, 10 s @, 288°C	seconds	pass visual	NA	Condition A	
Thermal Stress, 10 s @, 288°C	seconds	—	>220	E-2/105	
T-260	minutes	—	10-20	Condition A	
<b>Electrical</b>					
Permittivity (DK) @					
1 MHz (2 Fluid Cell)	—	5.4 max.	4.7	C-24/23/50	
500 MHz (HP4291)	—	—	4.27	C-24/23/50	
1GHz (HP4291)	—	—	4.25	C-24/23/50	
Loss Tangent (DF) @					
1 MHz (2 Fluid Cell)	—	0.035 max.	0.025	C-24/23/50	
500 MHz (HP4291)	—	—	0.016	C-24/23/50	
1 GHz (HP4291)	—	—	0.016	C-24/23/50	
Volume Resistivity	megohms-cm	1x104 min.	1x108	C-96/36/90	
	megohms-cm	1x103 min.	1x106	E-24/125	
Surface Resistivity	megohms	1x106 min.	5x106	C-96/36/90	
	megohms	1x103 min.	1x106	E-24/125	
Electric Strength	volt/mil	736 min.	1100	D-48/50	
	[volts/mm]	[2.9x104]	[4.3x104]	D-48/50	
Arc Resistance	seconds	60 min.	120	D-48/50	
Comparative Tracking Index	volts	—	250-400	ASTM D-36/38-85	
	PLC-UL	—	2	UL 746A	
<b>Physical</b>					
Peel Strength, RTF 1/2	oz.	lb/in	4.0 min.	5.0	After Thermal Stress
		[Kg/M]	[70] min.	[90]	After Thermal Stress
Peel Strength, Std. 1 oz	lb/in	4.5 min	9.0	After Thermal Stress	

## ORDERING INFORMATION:

Contact your local sales representative or the Customer Service Department in Chandler, AZ

Isola Group 3100 W Ray Road, Chandler, AZ 85226

Phone: 480-893-6527

For further information visit [www.isola-usa.com](http://www.isola-usa.com)

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.

