

IS410 Typical Laminate Properties

	English			Metric			Test Method		
	Value	Specification	Units	Value	Specification	Units	IPC-TM-650 (or as noted)		
Glass Transition Temperature (Tg) by DSC, spec minimum	180	110 C min	°C	180	110 C min	°C	2.4.25		
Decomposition Temperature (Td) by TGA	@ 5% weight loss	350	—	°C	350	—	°C	ASTM D3850	
T260	Minutes	60	—	min	60	—	min	2.4.25	
T288	Minutes	>20	—	min	>20	—	min		
CTE, Z-axis	Pre-Tg	65	AABUS	ppm/°C	65	AABUS	ppm/°C	2.4.24	
	Post-Tg	250	—	ppm/°C	250	—	ppm/°C		
CTE, X-, Y-axes	Pre-Tg	11	AABUS	ppm/°C	11	AABUS	ppm/°C	2.4.24	
	Post-Tg	13	—	ppm/°C	13	—	ppm/°C		
Z-Axis Expansion (50 – 260C) %	3.5	AABUS	%	3.5	AABUS	%	2.4.24		
Thermal Stress 10 Sec @ 288°C (550.4°F), spec minimum	Unetched	Pass	Pass Visual	Rating	Pass	Pass Visual	Rating	2.4.13.1	
	Etched	Pass	Pass Visual	Rating	Pass	Pass Visual	Rating		
Dk (Permittivity, Laminate & prepreg as laminated) Berskin Strip line Method	2 Ghz	3.76	5.4	—	3.76	5.4	—	2.5.5.3	
	5 Ghz	3.69	—	—	3.69	—	—	2.5.5.9	
	10 Ghz	3.69	—	—	3.69	—	—	2.5.5.5	
Df, Loss Tangent, spec maximum (Laminate & prepreg as laminated) Berskin Stripline Method	2 Ghz	0.021	0.035	—	0.021	0.035	—	2.5.5.3	
	5 Ghz	0.025	—	—	0.025	—	—	2.5.5.9	
	10 Ghz	0.025	—	—	0.025	—	—	2.5.5.5	
Volume Resistivity, spec minimum	96/35/90	—	—	—	—	—	—	2.5.17.1	
	After moisture resistance	5.00E+04	e4	M□ -cm	5.00E+04	e4	M□ -cm		
	At elevated temperature	3.0E+07	e3	M□	3.0E+07	e3	M□		
Surface Resistivity, spec minimum	96/35/90	—	—	—	—	—	—	2.5.17.1	
	After moisture resistance	8.00E+04	e4	M□	8.00E+04	e4	M□		
	At elevated temperature	4.50E+07	e3	M□	4.50E+07	e3	M□		
Thermal Conductivity	.4-.6	—	W/mK	.4-.6	—	W/mK	ASTM D5930		
Dielectric Breakdown, spec minimum	>50	40	kV	>50	40	kV	2.5.6		
Arc Resistance, spec minimum	129	60	Seconds	129	60	Seconds	2.5.1		
Electric Strength, spec minimum (Laminate & prepreg as laminated)	1100	736	V/mil	44000	29000	V/mm	2.5.6.2		
Peel Strength, spec minimum	profile – all copper weights >17 microns Standard profile copper -----1. After thermal stress 2. At 125°C (257°F) 3. After process sssolutions	>5.5	4	(lb/inch)	>110	70	N/mm	2.4.8	
									2.4.8.2
									2.4.8.3
		9	6		158	105			
		7	4		123	70			
		9	4.5		158	80			
Moisture Absorption, spec maximum	0.45	0.8	%	0.45	0.8	%	2.6.2.1		
CTI		3							
HWI		0							
HAI		2							
Max Operating Temp		150							
DSR		YES							
	Grain		Fill						
Flexural Strength (ksi)	79		68						
Tensile Strength (Ksi)	52		38						
Poisson's Ratio	0.13		0.11						
Youngs Modulus (million psi)	3.6		3						
Taylors Modulus (million psi)	3.3		3						

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
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