

Typical Engineering Values

Property / Condition	Value (U.S. Units)		Value (Metric Units)		Test Method
Mechanical					
Peel Strength - 1 oz. (35µm) Cu					
After Solder Float	8.9	lb/inch	1.56	N/mm	IPC-TM-650.2.4.8
At Elevated Temperature	8.3	lb/inch	1.45	N/mm	IPC-TM-650.2.4.8.2a
After Exposure to Process Solutions	9.4	lb/inch	1.65	N/mm	IPC-TM-650.2.4.8
X/Y CTE [-40°C to +125°C]	10 - 14	ppm/°C	10 - 14	ppm/°C	IPC-TM-650.2.4.41
Z Axis Expansion [50°C to 260°C]	3.8	%	3.8	%	IPC-TM-650.2.4.41
Young's Modulus (X/Y)	4.7/4.1	psi x 10 ⁶	31.9/27.8	GN/m ²	ASTM D3039
Poisson's Ratios (X/Y)	0.16/0.14		0.16/0.14		ASTM D3039
Thermal Conductivity	TBD	W/mK	TBD	W/mK	ASTM E1461
Specific Heat	TBD	J/gK	TBD	J/gK	ASTM E1461
Electrical					
Dielectric Constant (50% resin content)					
@ 1 GHz (RF Impedance)	3.8		3.8		IPC-TM-650.2.5.5.9
@ 2.5 GHz (Stripline)	3.6		3.6		IPC-TM-650.2.5.5.5
@ 10 GHz (Stripline)	3.6		3.6		IPC-TM-650.2.5.5.5
Dissipation Factor (50% resin content)					
@ 2.5 GHz (Stripline)	0.014		0.014		IPC-TM-650.2.5.5.5
@ 10 GHz (Stripline)	0.014		0.014		IPC-TM-650.2.5.5.5
Volume Resistivity					
C - 96/35/90	10 ⁷	MΩ - cm	10 ⁷	MΩ - cm	IPC-TM-650.2.5.17.1
E - 24/125	10 ⁷	MΩ - cm	10 ⁷	MΩ - cm	IPC-TM-650.2.5.17.1
Surface Resistivity					
C - 96/35/90	10 ⁶	MΩ	10 ⁶	MΩ	IPC-TM-650.2.5.17.1
E - 24/125	10 ⁷	MΩ	10 ⁷	MΩ	IPC-TM-650.2.5.17.1
Electric Strength	1200	V/mil	4.7x10 ⁴	V/mm	IPC-TM-650.2.5.6.2
Dielectric Breakdown	>50	kV	>50	kV	IPC-TM-650.2.5.6
Arc Resistance	118	seconds	118	seconds	IPC-TM-650.2.5.1
Thermal					
Glass Transition Temperature (T _g)					
DSC (°C)	185	°C	185	°C	IPC-TM-650.2.4.25c
TMA (°C)	175	°C	175	°C	IPC-TM-650.2.4.24c
DMA (°C) (Tan δ Peak)	220	°C	220	°C	IPC-TM-650.2.4.24.3
Degradation Temp (TGA) (5% wt. loss)	334	°C	334	°C	IPC-TM-650.2.3.40
Pressure Cooker - 2 hour					IPC-TM-650.2.6.16
(10 second solder dip @ 288°C)	Pass		Pass		(modified)
T ₂₆₀	12+	minutes	12+	minutes	IPC-TM-650.2.4.24.1
Chemical / Physical					
Moisture Absorption	<0.05	wt. %	<0.05	wt. %	IPC-TM-650.2.6.2c
Methylene Chloride Resistance	0.7	% wt. chg.	0.7	% wt. chg.	IPC-TM-650.2.3.4.3
Density [50% resin content]	1.77	g/cm ³	1.77	g/cm ³	Internal Method

Note: All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a Park/Nelco representative directly. Park/Nelco reserves the right to change these typical values as a natural process of refining our testing equipment and techniques.