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Data Sheet

RT/duroid® 5880LZ

High Frequency Laminates

RT/duroid® 5880LZ filled PTFE composites are designed for exacting stripline and microstrip circuit applications.

The unique filler results in a low density, lightweight material for high performance weight sensitive applications.

The very low dielectric constant of RT/duroid 5880LZ laminates is uniform from panel to panel and is constant over a wide frequency range. Its low dissipation factor extends the usefulness of RT/duroid 5880LZ to Ku-band and above.

RT/duroid 5880LZ laminates are easily cut, sheared and machined to shape. They are resistant to all solvents and reagents, hot or cold, normally used in etching printed circuits or in plating edges and holes.

When ordering RT/duroid 5880LZ laminates, it is important to specify dielectric thickness, tolerance, electrodeposited copper foil, and weight of copper foil required.

Features:

- Lowest dielectric constant available
- Low Z-axis CTE
- Lightweight / low density
- Uniform electrical properties over a wide frequency range

Some Typical Applications:

- Airborne antenna system
- Lightweight feed networks
- Military radar systems
- Missile guidance systems
- Point-to-point digital radio antennas

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Property	Typical Value [1] RT/duroid® 5880LZ	Direction	Units	Condition	Test Method
Dielectric Constant ε_r, Process	1.96 ± 0.04	Z		10 GHz/23°C	IPC-TM-650, 2.5.5.5
[2] Dielectric Constant ε_r, Design	1.96	Z		8 GHz - 40 GHz	Differential Phase Length Method
Dissipation Factor, tan	Typ: 0.0019 Max: 0.0027	Z		10GHz/23°C	IPC-TM-650, 2.5.5.5
Thermal Coefficient of Dielectric Constant, ε_r	+22	Z	ppm/°C		IPC-TM-650, 2.5.5.5
Volume Resistivity	2.1 X 10^7		Mohm•cm	COND A	IPC-TM-650, 2.5.17.1
Surface Resistivity	2.6 X 10^6		Mohm	COND A	IPC-TM-650, 2.5.17.1
Electrical Strength	285 11.4		V/mil kV/mil		IPC-TM-650, 2.5.6.2
Dimensional Stability	2-3	X,Y	mils/inch		IPC-TM-650, 2.4.39A
Specific Heat	0.95		J/gm/K		Calculated
Moisture Absorption	0.22		%		ASTM D570
Thermal Conductivity	0.33	Z	W/m/°K	80°C	ASTM C518
Coefficient of Thermal Expansion	44,43 41.5	X,Y Z	ppm/°C		IPC-TM-650, 2.4.41
Outgassing			%		ASTM E-595
TML	0.01				
CVCM	0.01				
WVR	0.02				
Density	1.4		gm/cm^3		ASTM D792
Copper Peel	>4.0		pli		IPC-TM-650, 2.4.8
Flammability	V-0				UL94
Lead-Free Process Compatible	YES				

NOTES:

[1] Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.

[2] The Design DK is an average number from several different tested lots of material and on the most common thickness/s. If more detailed information is required please contact Rogers Corporation or refer to the Design DK technical articles and presentations available at http://www.rogerscorp.com/acm/technology/index.aspx, the Rogers Technology Support Hub.

Standard Thickness	Standard Panel Size	Standard Copper Cladding
0.010" (0256mm) ± 001 0.020" (0.508mm) ± 001 0.025" (0.625mm) ± 001 0.030" (0.762mm) ± 002 0.040" (1.026mm) ± 002 0.050" (1.270mm) ± 002 0.100" (2.540mm) ± 004	12"X18" (305mm X 457mm) 24"X18" (610mm X 457mm) 24"X54" (610mm X 1.37m)	½ oz (17µm) Electrodeposited copper foil (HH/HH) on both sides 1 oz (35µm) Electrodeposited copper foil (H1/H1) on both sides 2 oz (70µm) Electrodeposited copper foil (H2/H2) on both sides

Other thicknesses and claddings are available. Contact customer service for more information.

The information in this data sheet is intended to assist you in designing with Rogers' circuit material laminates. It is not intended to and does not create any warranties express or implied, including any warranty of merchantability or fitness for a particular purpose or that the results shown on this data sheet will be achieved by a user for a particular purpose. The user should determine the suitability of Rogers' circuit material laminates for each application.

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