

RF-30 Low Cost Antenna Laminate

RF-30 is an organic ceramic laminate that combines the benefits of woven glass reinforced fluoropolymer chemistry with the thermal, mechanical and electrical enhancements of ceramic elements. RF-30 is the best value for the low cost, high performance demands of microwave and radio frequency antenna applications.

The low dissipation factor, thermal stability and smooth surface profile minimize phase shift with frequency and temperature, and yield exceptionally low intermodulation performance. RF-30 is ideally suited for long (up to 102") printed circuit base station antennas.

RF-30 has excellent peel strength for high temperature assembly and power handling requirements. RF-30 is dimensionally stable due to the use of woven fabrics in its design.

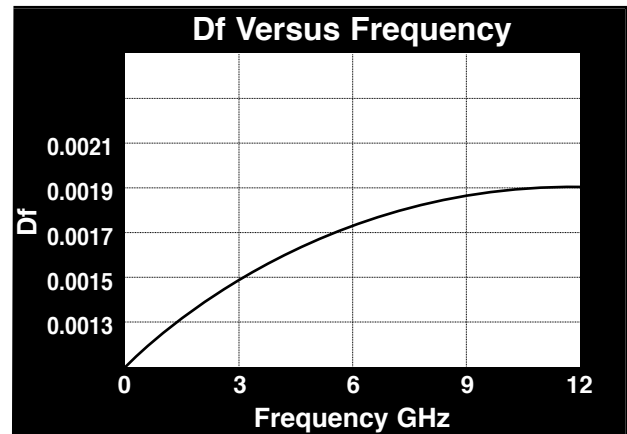
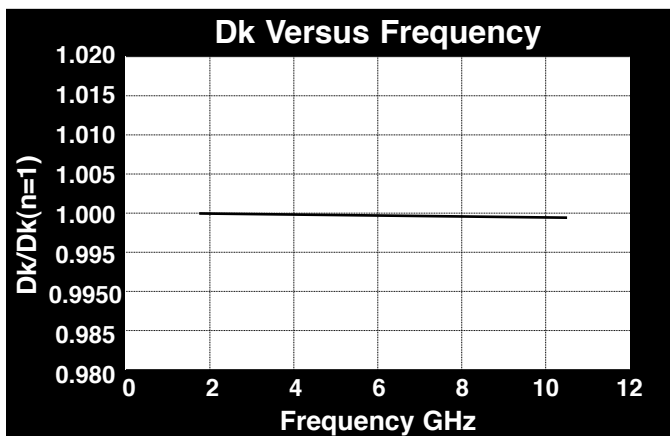
RF-30 laminates are generally ordered clad on both sides with 1 oz. electrodeposited copper.

RF-30 laminates exhibit flammability of V-0 and are tested in accordance with IPC-TM 650.

Benefits & Applications:

- Low Cost
- Excellent Peel Strength
- Exceptionally Low Dissipation Factor
- Excellent Intermodulation Performance
- Low Moisture Absorption
- Enhanced Surface Smoothness

- RF/Microwave Antennas



RF-30 Typical Values					
Property	Test Method	Unit	Value	Unit	Value
Dielectric Constant @ 1.9 GHz	IPC-TM-650 2.5.5		3.00		3.00
Dissipation Factor @ 1.9 GHz	IPC-TM-650 2.5.5		0.0014		0.0014
Moisture Absorption	IPC-TM-650 2.6.2.1	%	0.02	%	0.02
Dielectric Breakdown	IPC-TM-650 2.5.6	kV	>60	kV	>60
Volume Resistivity	IPC-TM-650 2.5.17.1 (Humidity Conditioning)	Mohm/cm	1.26 x 10 ⁹	Mohm/cm	1.26 x 10 ⁹
Surface Resistivity	IPC-TM-650 2.5.17.1 (Humidity Conditioning)	Mohm	1.46 x 10 ⁸	Mohm	1.46 x 10 ⁸
Arc Resistance	IPC-TM-650 2.5.1	Seconds	>180	Seconds	>180
Flexural Strength (MD)	ASTM D 790	psi	>13,000	N/mm ²	>90
Flexural Strength (CD)	ASTM D 790	psi	>9,000	N/mm ²	>62
Tensile Strength (MD)	ASTM D 638	psi	16,000	N/mm ²	111
Tensile Strength (CD)	ASTM D 638	psi	8,000	N/mm ²	55
Peel Strength (1 oz ED)	IPC-TM-650 2.4.8 (Thermal Stress)	lbs/ in	10.0	N/mm	1.8
Dimensional Stability (MD)	IPC-TM-650 2.4.39	in/in	0.00004	mm/mm	0.00004
Dimensional Stability (CD)	IPC-TM-650 2.4.39	in/in	-0.00010	mm/mm	-0.00010
Thermal Conductivity	ASTM F 433	W/M*K	0.23	W/M*K	0.23
CTE (X-Y)	ASTM D 3386 (TMA)	ppm/°C	11-21	ppm/°C	11-21
CTE (Z)	ASTM D 3386 (TMA, 25-100°C)	ppm/°C	125	ppm/°C	125
Outgassing (% TML)	ASTM E 595*	%	0.02	%	0.02
Outgassing (% CVCM)	ASTM E 595*	%	0.00	%	0.00
Outgassing (% WVR)	ASTM E 595*	%	0.02	%	0.02
Flammability Rating	UL 94		V-0		V-0
Hardness	Rockwell M Scale		34		34

*As reported by NASA. See http://outgassing.nasa.gov/og_disclaimer.html.

All reported values are typical and should not be used for specification purposes. In all instances, the user shall determine suitability in any given application.

Designation	Dk
RF-30	3.00 ± 0.10

Typical Thicknesses ¹	
Inches	mm
0.0100	0.25
0.0200	0.50
0.0300	0.76
0.0600	1.52

Available Sheet Sizes ²	
Inches	mm
12 x 18	304 x 457
16 x 18	406 x 457
18 x 24	457 x 610
16 x 36	406 x 914
24 x 36	610 x 914
Long Laminates	
36 x 60	914 x 1526
36 x 76	914 x 1930
36 x 102	914 x 2590

¹ Please call for availability of other thicknesses.

² Standard sheet size is 36" x 48" (914 mm x 1220 mm). Please call for availability of other sizes.

Please see our Product Selector Guide for Information on other available copper cladding.

An example of our part number is:

RF-30-0600-CV1/CV1 - 18" x 24" (457 mm x 610 mm)

