

RF-35 Low Cost Substrate for Power Amplifiers/RF Components

RF-35 is an organic-ceramic woven glass reinforced laminate designed for low cost, high volume commercial microwave and radio frequency applications. RF-35 has excellent peel strength for .5 oz and 1 oz copper even in comparison to standard epoxy materials which is a critical aspect when rework is required.

RF-35's T_g is over 600°F (315°C) and the ultra low moisture absorption rate and low dissipation factor minimize phase shift with frequency.

RF-35 laminates are dimensionally stable and generally are ordered clad on one or both sides with .5, 1 and 2 oz. electrodeposited copper.

RF-35 laminates exhibit flammability of V-0 and are tested in accordance with IPC-TM 650. A certificate of compliance containing lot-specific test data accompanies each shipment.

Benefits & Applications:

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

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- Power Amplifiers
 - Filters and Couplers
 - Passive Components

Designation	Dielectric Constant
RF-35	3.50 ± 0.1

Typical Thicknesses	
Inches	mm
0.0100	0.25
0.0200	0.51
0.0300	0.76
0.0600	1.52

Available Sheet Sizes	
Inches	mm
12 x 18	305 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
18 x 48	457 x 1220

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

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

An example of our part number is: **RF-35-0600-CH/CH - 18" x 24" (457 mm x 610 mm)**

RF-35 Typical Values					
Property	Test Method	Unit	Value	Unit	Value
Dk @ 1.9 GHz	IPC-650 2.5.5		3.50		3.50
Df @ 1.9 GHz	IPC-650 2.5.5		0.0018		0.0018
Dielectric Breakdown	IPC-650 2.5.6	kV	41	kV	41
Dielectric Strength	ASTM D 149	V/mil	711	V/mm	28,000
Arc Resistance	IPC-650 2.5.1	Seconds	>180	Seconds	>180
Moisture Absorption (0.060")	IPC-650 2.6.2.1	%	0.02	%	0.02
Flexural Strength (MD)	ASTM D 790	psi	>22,000	N/mm ²	>152
Flexural Strength (CD)	ASTM D 790	psi	>18,000	N/mm ²	>124
Tensile Strength (MD)	ASTM D 638	psi	27,000	N/mm ²	187
Tensile Strength (CD)	ASTM D 638	psi	21,000	N/mm ²	145
Peel Strength (1/2 oz copper)	IPC-650 2.4.8	lbs/in	>8	N/mm	>1.5
Peel Strength (1 oz. copper)	IPC-650 2.4.8	lbs/in	>10	N/mm	>1.8
Thermal Conductivity	ASTM F 433	W/M*K	0.24	W/M*K	0.24
Dimensional Stability (MD)	IPC-650-2.4.39	mils/in	0.04	mm/M	0.04
Dimensional Stability (CD)	IPC-650-2.4.39	mils/in	-0.10	mm/M	-0.10
Surface Resistivity	IPC-650 2.5.17.1	Mohms	1.46 x 10 ⁸	Mohms	1.46 x 10 ⁸
Volume Resistivity	IPC-650 2.5.17.1	Mohms/cm	1.26 x 10 ⁹	Mohms/cm	1.26 x 10 ⁹
CTE (X axis)	ASTM D 3386 (TMA)	ppm/°C	19	ppm/°C	19
CTE (Y axis)	ASTM D 3386 (TMA)	ppm/°C	24	ppm/°C	24
CTE (Z axis)	IPC-650 2.4.41 / ASTM D 3386	ppm/°C	64	ppm/°C	64
Flammability	UL-94		V-0		V-0
Hardness	Rockwell M Scale		34		34

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.

