

# ORCER RF-35A2

---

**Dk Tolerance of +/-0.05**  
**Low Cost**  
**Excellent Peel Strength**  
**Exceptionally Low Loss**  
**Low Moisture Absorption**  
**Ease of Drilling**

---

**TACONIC**

An ISO 9001:2000 Registered Company

Petersburgh, NY: Tel: 800-833-1805 Fax: 518-658-3988

Europe: Tel: +353-44-9395600 Fax: +353-44-9344369 Asia: Tel: +82-31-704-1858 Fax: +82-31-704-1857

[www.taconic-add.com](http://www.taconic-add.com)

# APPLICATIONS

Multi-layer  
Power Amplifiers  
Filters and Couplers  
Passive Components  
High Speed Digital  
Wireless Antennas

# ORCER RF-35A2

Taconic's superior coating capabilities have enabled them to produce RF-35A2, which offers distinct performance advantages.

RF-35A2 has all of the benefits that you have come to expect from the RF-35 product line, including excellent copper peel strength for rework and reliability and low moisture absorption for fewer bakes and lower cost during processing.

The dielectric constant tolerance has been tightened to 3.5 +/- 0.05 which translates to more consistent electrical performance.

RF-35A2 offers low X, Y and Z thermal expansion for better mechanical properties.

Taconic has raised thermal conductivity in RF-35A2 which enables higher power handling capability.

The construction of the RF-35A2 allows for easier drilling.

The enhanced electrical and mechanical properties of RF-35A2 make it ideal for power amplifier applications, filters, couplers and RF applications.

RF-35A2 laminates are generally ordered clad on both sides with 1/2, 1 or 2 oz. electrodeposited copper.

RF-35A2 laminates exhibit flammability of V-0 and are tested in accordance with IPC-TM 650. A certificate of conformance containing lot-specific data accompanies each shipment.

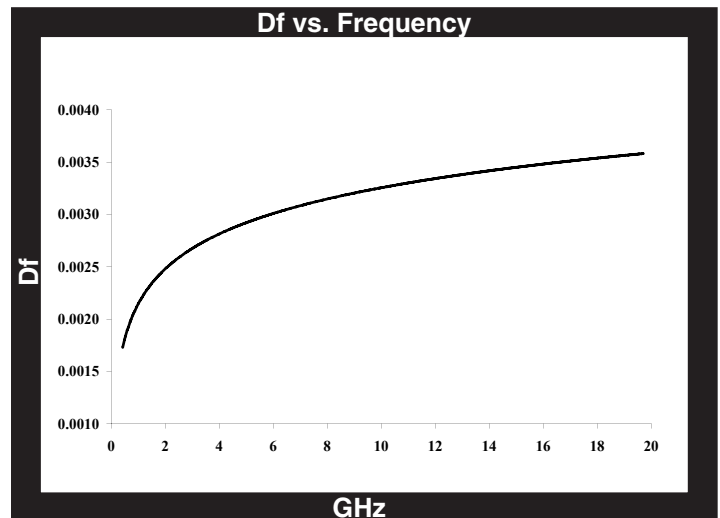
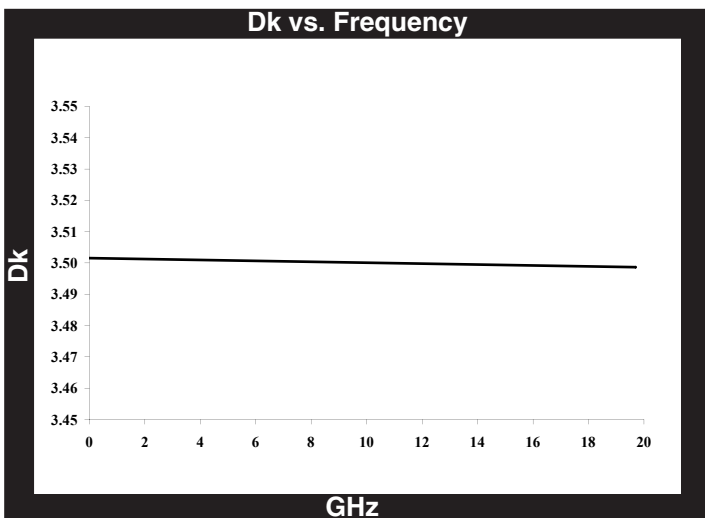
See "How to Order" on back page for a complete product listing.

## RF-35A2 Typical Values

Property	Test Method	Unit	Value	Unit	Value
Dielectric Constant @ 1.9 GHz	IPC-TM-650 2.5.5.5.1 (Modified)		3.50		3.50
Dissipation Factor @ 1.9 GHz	IPC-TM-650 2.5.5.5.1 (Modified)		0.0016		0.0016
Dielectric Constant @ 10 GHz	IPC-TM-650 2.5.5.5.1 (Modified)		3.50		3.50
Dissipation Factor @ 10 GHz	IPC-TM-650 2.5.5.5.1 (Modified)		0.0018		0.0018
Moisture Absorption	IPC-TM-650 2.6.2.1	%	0.03	%	0.03
Dielectric Breakdown	IPC-TM-650 2.5.6/ASTM D 149	kV	59	kV	59
Dielectric Strength	ASTM D 149	V/mil	1000	V/mm	39,370
Volume Resistivity	IPC-TM-650 2.5.17.1 Sec. 5.2.1 (Humidity Conditioning)	Mohm/cm	1.37 x 10 <sup>9</sup>	Mohm/cm	1.37 x 10 <sup>9</sup>
Surface Resistivity	IPC-TM-650 2.5.17.1 Sec. 5.2.1 (Humidity Conditioning)	Mohm	3.54 x 10 <sup>8</sup>	Mohm	3.54 x 10 <sup>8</sup>
Arc Resistance	IPC-TM-650 2.5.1	Seconds	242	Seconds	242
Flexural Strength (MD)	IPC-TM 650 2.4.4	psi	24,000	N/mm <sup>2</sup>	165
Flexural Strength (CD)	IPC-TM 650 2.4.4	psi	14,000	N/mm <sup>2</sup>	96.5
Tensile Strength (MD)	ASTM D 3039	psi	16,800	N/mm <sup>2</sup>	116
Tensile Strength (CD)	ASTM D 3039	psi	11,000	N/mm <sup>2</sup>	75.8
Young's Modulus (MD)	ASTM D 3039	psi	1.21 x 10 <sup>6</sup>	N/mm <sup>2</sup>	8,343
Young's Modulus (CD)	ASTM D 3039	psi	1.04 x 10 <sup>6</sup>	N/mm <sup>2</sup>	7,171
Poisson's Ratio (MD)	ASTM D 3039		0.14		0.14
Poisson's Ratio (CD)	ASTM D 3039		0.10		0.10
Strain at Break (MD)	ASTM D 3039	%	1.6		1.6
Strain at Break (CD)	ASTM D 3039	%	1.4		1.4
Compressive Modulus (Z axis)	ASTM D 695 (23°C)	kpsi	385	N/mm <sup>2</sup>	2,650
Peel Strength (1 oz. VLP)	IPC-TM-650 2.4.8 (Thermal Stress)	lbs/linear inch	12	N/mm	2.1
Peel Strength (1 oz. VLP)	IPC-TM-650 2.4.8.3 (150°C) (Elevated Temperature)	lbs/linear inch	14	N/mm	2.5
Peel Strength (1 oz. VLP)	IPC-TM-650 2.4.8 Sec. 5.2.3 (Processing Chemicals)	lbs/linear inch	11	N/mm	2.0
Density (Specific Gravity)		gm/cm <sup>3</sup>	2.28	gm/cm <sup>3</sup>	2.28
Specific Heat	ASTM E 1269 (DSC) (100°C)	J/g/K	0.99	J/g/K	0.99
Thermal Conductivity	ASTM F 433	W/m/K	0.282	W/m/K	0.282
T <sub>d</sub>	IPC-TM-650 2.4.24.6 2% Weight Loss	°C	528		528
T <sub>d</sub>	IPC-TM-650 2.4.24.6 5% Weight Loss	°C	547		547
CTE (x)	IPC-TM-650 2.4.41 (>RT - 125°C)	ppm/°C	10	ppm/°C	10
CTE (y)	IPC-TM-650 2.4.41 (>RT - 125°C)	ppm/°C	13	ppm/°C	13
CTE (z)	IPC-TM-650 2.4.41 (>RT - 125°C)	ppm/°C	106	ppm/°C	106
Outgassing (% TML)	ASTM E 595*	%	0.03	%	0.03
Outgassing (% CVCM)	ASTM E 595*	%	0.00	%	0.00

\*As reported by NASA. See [http://outgassing.nasa.gov/og\\_disclaimer.html](http://outgassing.nasa.gov/og_disclaimer.html).

\*\* Test values measured using a 0.0600" microstrip circuit with 1 oz. VLP copper on a 50 ohm line.



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. Test data obtained using a 0.0600" sample.

# How To Order

Designation	Dielectric Constant	Typical Thicknesses <sup>1</sup>		Available Sheet Sizes <sup>2</sup>	
RF-35A2	3.50 +/- 0.05	0.0050"	0.13 mm	12" x 18"	304 mm x 457 mm
		0.0100"	0.25 mm	16" x 18"	406 mm x 457 mm
		0.0200"	0.51 mm	18" x 24"	457 mm x 610 mm
		0.0300"	0.76 mm	16" x 36"	406 mm x 914 mm
		0.0600"	1.52 mm	24" x 36"	610 mm x 914 mm

<sup>1</sup>RF-35A2 can be manufactured in increments of 0.0100". Please call for availability of additional thicknesses.

<sup>2</sup>Our standard sheet size is 36" x 48" (914 mm x 1220 mm). Please contact our customer service department for availability of other sizes.

Available Copper Cladding						
Designation	Weight	Copper Thickness		R <sub>MS</sub> Treated Side		Description
C1 (C1)	1 oz/ft <sup>2</sup>	~0.0014	~35 µm	25 µin	0.6 µm	Very low profile / Electrodeposited
CVH (CH)	1/2 oz/ft <sup>2</sup>	~0.0007"	~18 µm	27 µin	0.7 µm	Very low profile / Electrodeposited
C2	2 oz/ft <sup>2</sup>	~0.0028	~70 µm	77 µin	2.0 µm	Electrodeposited

Heavy metal claddings (aluminum, brass & copper) may also be available upon request. Please call for information.

An example of our part number is: **RF-35A2-0300-C1/C1 - 18" x 24" (457 mm x 610 mm)**

## TACONIC

An ISO 9001:2000 Registered Company

Petersburgh, NY: Tel: 800-833-1805 Fax: 518-658-3988

Europe: Tel: +353-44-9395600 Fax: +353-44-9344369 Asia: Tel: +82-31-704-1858 Fax: +82-31-704-1857

www.taconic-add.com