

# TLF-35A



Your Dreams, Our Challenge

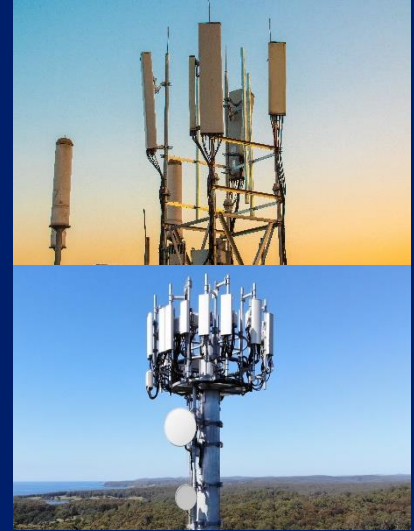
## Improved PTH and PIMD Performance

### Benefits

- Improved PIMD with DK3.5
- Improved PTH Quality
- Stable at high frequency
- Stable at high temp.
- Low moisture absorption
- Excellent Peel Strength
- Excellent price/performance Ratio

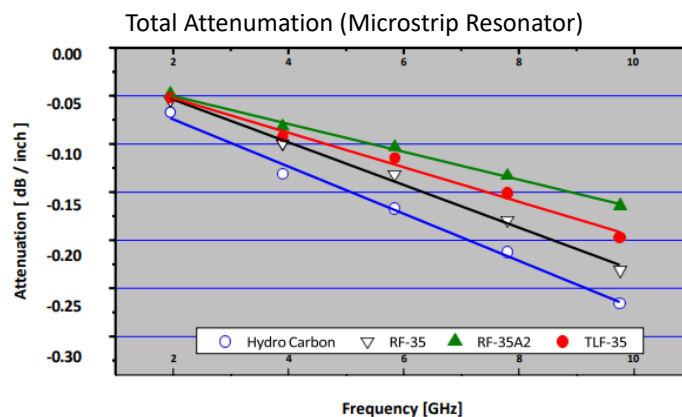
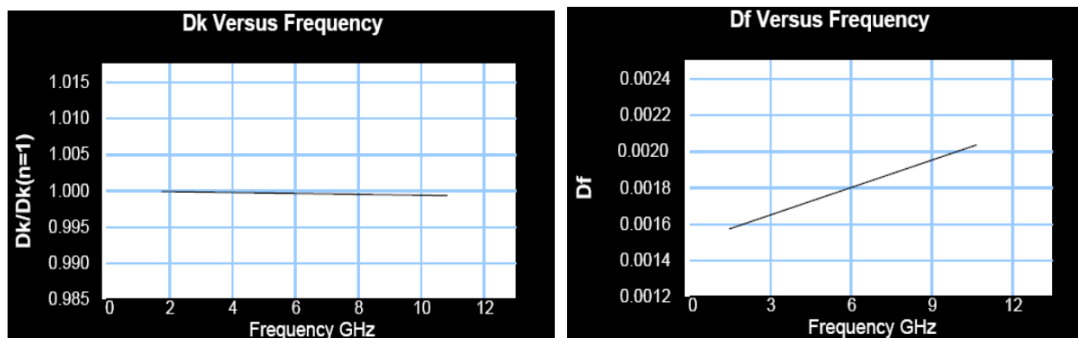
### Applications

- Size effective Antenna
- Power Amplifiers
- LNA, Repeater PA
- Passive Components
- Filters / Couplers



TLF-35A is an organic-ceramic laminate in Taconic's family of product. TLF-35A advanced is the best choice for low cost, high volume commercial microwave and radio frequency application. TLF-35A advanced has excellent peel strength for ½ ounce and 1 ounce copper and is designed to offer superior high frequency performance. Advanced TLF-35A laminates show similar electrical properties as TLF-35A but tighter DK tolerance.

TLF-35A advanced is designed to obtaining improved PIMD performances on size effective boards for antenna application. Most of sensitive PIMD required base material's Dielectric constant is around 3.0 whereas TLF-35A advanced laminates dielectric constant is 3.5 with similar PIMD levels.



Total Attenuation were measured with microstrip ring resonator. Material under test were 20mil dielectric thickness and 1 oz. copper.

Properties	Conditions	Typical Value	Unit	Test Method
<b>Electrical Properties</b>				
Dielectric Constant	@ 10 GHz	3.50 ± 0.05		IPC-TM 650 2.5.5.5.1 Mod
Dissipation Factor	@ 10 GHz	0.0026		IPC-TM 650 2.5.5.5.1 Mod
Surface Resistivity		3.0 x 10 <sup>9</sup>	Mohms	IPC-TM 650 2.5.17.1
Volume Resistivity		2.0 x 10 <sup>8</sup>	Mohms/cm	IPC-TM 650 2.5.17.1
<b>Thermal Properties</b>				
Thermal Conductivity		0.37	W/m/K	IPC-TM-650 2.4.50
CTE (50 to 150 °C)	X	9	ppm/°C	IPC-650 2.4.41
	Y	12		
	Z	80		
<b>Mechanical Properties</b>				
Peel Strength	1 oz. copper	1.8 (10)	N/mm (Lbs./linear in)	IPC-TM 650 2.4.8
Flexural Strength	Lengthwise	90 (13,000)	N/mm <sup>2</sup> (psi)	IPC-TM 650 2.4.4
	Crosswise	90 (13,000)	N/mm <sup>2</sup> (psi)	
<b>Chemical / Physical Properties</b>				
Flammability			V-0	UL-94
Water Absorption		0.03	%	IPC-TM 650 2.6.2.1

**Typical Thicknesses<sup>1</sup>**

Inches	mm
0.030	0.76
0.060	1.52

**Typical Panel Sizes<sup>2</sup>**

Inches	mm	Inches	mm
12 x 18	305 x 457	18 x 24	457 x 610
16 x 18	406 x 457	36 x 48	914 x 1,220

**Available Copper Cladding**

Designation	Weight	Copper Thickness	Rms Treated Side		Description
CVH (CH)	½ oz./sq. ft.	~ .0007"	~ 18µm	19µin 0.48µm	Very low profile / Electrodeposited
CV1 (C1)	1 oz./sq. ft.	~ .0014"	~ 35µm	25µin 0.64µm	Very low profile / Electrodeposited
CLH	½ oz./sq. ft.	~ .0007"	~ 18µm	18µin 0.46µm	Reverse Treated / Electrodeposited
CL1	1 oz./sq. ft.	~ .0014"	~ 35µm	16µin 0.41µm	Reverse Treated / Electrodeposited
C2	2 oz./sq. ft.	~ .0028"	~ 70µm	27µin 0.69µm	Electrodeposited
CVH (CH)	½ oz./sq. ft.	~ .0007"	~ 18µm	19µin 0.48µm	Very low profile / Electrodeposited
CV1 (C1)	1 oz./sq. ft.	~ .0014"	~ 35µm	25µin 0.64µm	Very low profile / Electrodeposited

\* All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a company representative directly.

\* TLF-35A can be manufactured in increments of 0.030"(0.76mm).

\* Standard panel size is 18" x 24" (457 mm x 610 mm).

\* Please contact AGC for availability of additional thicknesses, other sizes & any other type of cladding.

