

TLC

Low Cost
Low Dissipation Factor
Tightly Controlled Dielectric Constant
Exceptional Dimensional Stability
High Flexural Strength
UL 94 V-O Rating

TACONIC

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TLC

APPLICATIONS

LNBs

PCS/PCN Large Format Antennas

Power Amplifiers

Passive Components

Taconic has over 35 years of experience coating fiberglass fabric with PTFE (polytetrafluoroethylene). This enables Taconic to manufacture copper clad PTFE/woven glass laminates with exceptionally well controlled electrical and mechanical properties.

Taconic TLC laminates are engineered to provide a cost effective substrate. TLC laminates are suitable for a wide range of microwave applications. TLC laminates offer far superior electrical performance compared to thermoset laminates (e.g. FR-4, PPO, BT, polyimide, and cyanate ester). The construction of the laminate provides exceptional mechanical stability. The dielectric constant (Dk) is typically offered at 3.2 +/- .05.

TLC laminates can be sheared, drilled, milled, and plated using standard methods for PTFE/woven fiberglass materials. The laminates are dimensionally stable, and exhibit virtually no moisture absorption during fabrication processes.

TLC laminates are generally ordered clad on one or both sides with 1/2, 1, or 2 oz. electrodeposited copper foil. Contact our Customer Service Department for alternate claddings.

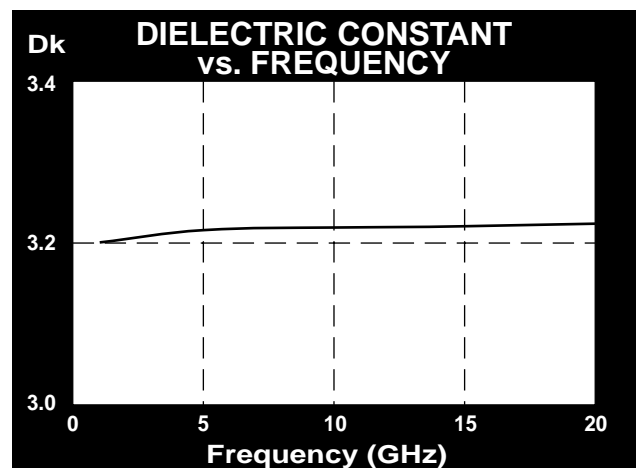
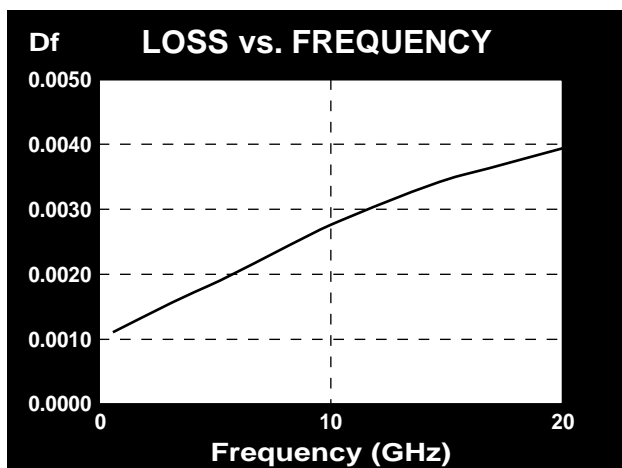
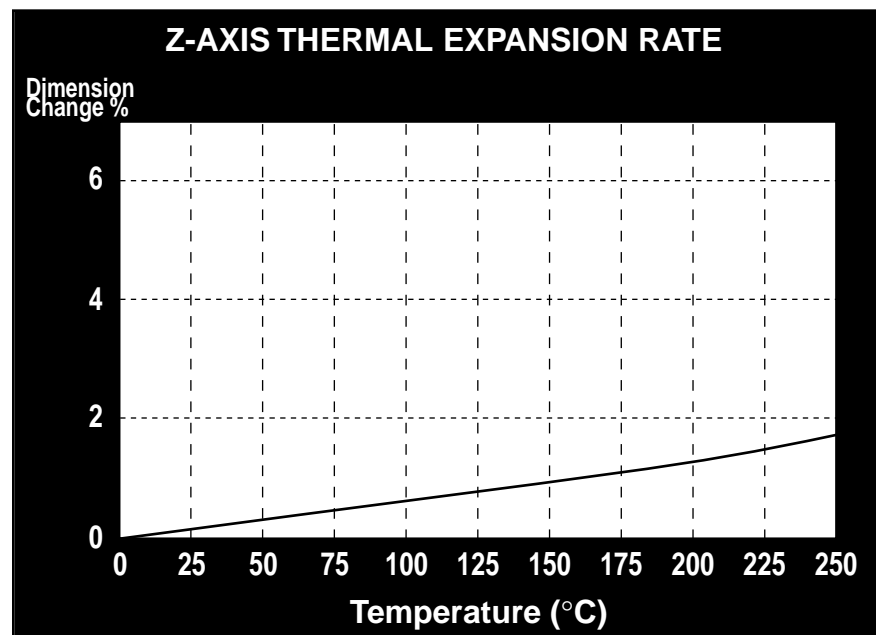
TLC laminates are tested in accordance with IPC-TM 650. A Certificate of Compliance containing actual test data accompanies each shipment.

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

TLC-32 TYPICAL VALUES

Property	Test Method	Units	Value	Units	Value
Dielectric Constant @ 10 GHz	IPC-TM 650 2.5.5.5		3.20		3.20
Dissipation Factor @ 10 GHz	IPC-TM 650 2.5.5.5		0.0030		0.0030
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	Mohm/cm	10 ⁷	Mohm/cm	10 ⁷
Surface Resistivity	IPC-TM 650 2.5.17.1	Mohm	10 ⁷	Mohm	10 ⁷
Arc Resistance	IPC-TM 650 2.5.1	seconds	>180	seconds	>180
Flexural Strength Lengthwise	IPC-TM 650 2.4.4	lbs./in.	>40,000	N/mm ²	>276
Flexural Strength Crosswise	IPC-TM 650 2.4.4	lbs./in.	>35,000	N/mm ²	>241
Peel Strength (1oz copper)	IPC-TM 650 2.4.8	lbs./linear in.	12.0	N/mm	2.1
Thermal Conductivity	ASTM F 433	W/m/K	0.24	W/m/K	0.24
x-y CTE	ASTM D 3386 (TMA)	ppm/°C	9-12	ppm/°C	9-12
z CTE	ASTM D 3386 (TMA)	ppm/°C	70	ppm/°C	70
UL-94 Flammability Rating	UL-94		V-0		V-0

Type	Dk
TLY-5A	2.17
TLY-5	2.20
TLY-3	2.33
TLT-0 TLX-0	2.45
TLT-9 TLX-9	2.50
TLT-8 TLX-8	2.55
TLT-7 TLX-7	2.60
TLT-6 TLX-6	2.65
TLE-95	2.95
TLC-27	2.75
TLC-30	3.00
TLC-32	3.20
RF-30	3.00
RF-35	3.50
RF-60	6.15
CER-10	10



How to Order

Designation	Dielectric Constant	Dielectric Thickness	Dielectric Thickness
TLC - 27	2.75 +/- .05	.0145"	0.37mm
TLC - 30	3.00 +/- .05	.0200" .0310" - .0620"	0.50mm 0.78mm – 1.57mm
TLC - 32	3.20 +/- .05	≥ .0310"	≥ 0.78mm

Standard sheet size is 36" x 48" (914mm x 1220mm). Please contact our Customer Service Department for the availability of other sizes and claddings.

TLC can be ordered with the following electrodeposited copper:

Designation	Weight	Copper Thickness	Copper Thickness
CH	1/2 oz./sq. ft.	~ .0007"	~18 μm
C1	1 oz./sq. ft.	~ .0014"	~ 35 μm
C2	2 oz./sq. ft.	~ .0028"	~ 70 μm

Panels may be ordered cut to size

Typical Panel Sizes	
12" x 18"	304mm x 457mm
16" x 18"	406mm x 457mm
18" x 24"	457mm x 610mm
16" x 36"	406mm x 914mm
24" x 36"	610mm x 914mm
18" x 48"	457mm x 1220mm

An example of our part number is: TLC-32-0620-CH/CH-18" x 24" (TLC-32-0620-CH/CH-457mm x 610mm)

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ADVANCED DIELECTRIC DIVISION

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