

Technical Data Sheet

waveSTRATE™ 26LB

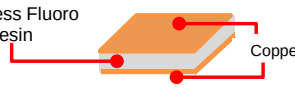
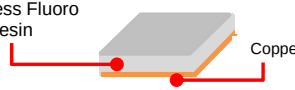
Ultra Low Loss Copper Clad Laminate

FEATURES

Non-reinforced ceramics filled Fluoro resin, Low Dk and Df for high frequency

waveSTRATE™ 26LB is Copper Clad Laminates obtain enough characteristics according to filling ceramics into fluoro resin polymer. We propose it as a substrate material for high-frequency antennas and high-speed transmission. In addition it can be used like an FPC since has flexibility.

CONSTRUCTION

Series	Overviews	Constructions
waveSTRATE™ 26LB-CC	waveSTRATE™ 26LB-CC features 2 layers of copper with exceptional peel strength. With a DK of 2.58 its low loss characteristics are possible due to its non-reinforced construction.	Cloth-less Fluoro Resin  Copper
waveSTRATE™ 26LB-C0	waveSTRATE™ 26LB-C0 features 1 layer of copper with exceptional peel strength.	Cloth-less Fluoro Resin  Copper

TYPICAL PROPERTIES

Properties		unit	waveSTRATE™ 26LB	Test method	Specimen
Electrical Properties	Relative permittivity real part (ε')	-	2.60	Resonant cavity @ 10GHz	2x70x0.127mmt
	Effective relative permittivity	-	2.15	Microstrip line ^{*1}	Line width 0.33mm
	Dissipation factor	-	0.0012	Resonant cavity @ 10GHz	2x70x0.127mmt
	Breakdown voltage	kV	3.82	JIS K6249	0.127mmt
	Volume resistivity	MΩ・cm	2.03x10 ¹⁴	JIS K6911	100x100x0.127mmt
	Surface resistivity	MΩ	1.45x10 ¹⁴	JIS K6911	100x100x0.127mmt
Physical Properties	Peel strength	N/cm	> 20	JIS C6481 ^{*2}	W10mm, L150mm
	Solder resistance	Minutes	> 10	288°C ^{*3}	50x50x0.127mmt
	Coefficient of linear expansion ^{*4}	ppm - Z	25.4	-30 to 150°C 2nd heating	20x5x0.127mmt
		ppm - X	32.6		
		ppm - Y	30.1		
	Moisture Absorption	%	0.09	IPC-TM650 2.6.2.1	100x100x0.127mmt
	Specific Gravity	g/cm ³ ± 2	2.12	ASTM D792	20x20x0.127mmt
	Elongation	%	152	ASTM D638	Type I (0.127mmt)
	Tensile strength at yield	Mpa	7.47	ASTM D638	Type I (0.127mmt)
Dimension Stability◎(MD/TD) ^{*5}	%	-0.05 / -0.01	IPC-TM650 2.2.4	255x275mm	
Dimension Stability◎(MD/TD) ^{*5}	%	-0.20 / -0.20	IPC-TM650 2.2.4	255x275mm	
Thermal Properties	Thermal conductivity	W/mK	0.46	ASTM D5470	20x20x0.156, 0.382mmt
	Flame Retardant	-	V-0 equivalent	UL94	-
	Tg	°C	143	DDSC	-

*1 The value calculated back from the transmission loss by de-embedded after measured S-parameter of 25, 50 and 100mm length.

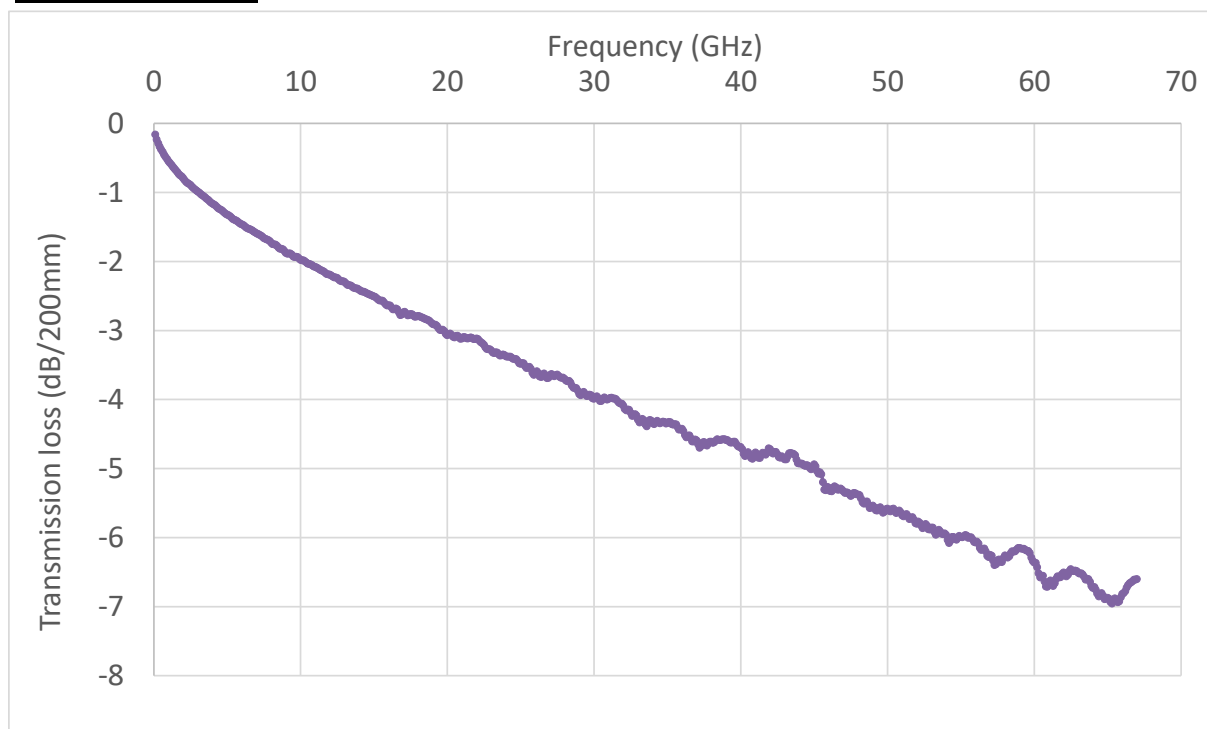
*2 Copper : CF-T4X-SV-35 by Fukuda

*3 Measured after laminating CF-T4X-SV-18 by Fukuda on one side of Fluoro resin sheet.

*4 Z : Compression with 0.2N XY : Tension with 0.012N

*5 ① Measured after etching. ② Baked at 150°C for 30 minutes, left for 24 hours and measured.

Transmission loss



- * Network Analyzer : N5227B by Keysight
- * The value calculated back from the transmission loss by de-embedded after measured S-parameter of 25mm and 225mm length.
- * Copper : CF-T4X-SV-18 by Fukuda

Standard size

Series	Product Name	Sheet Size
waveSTRATE™ 26LB	waveSTRATE™ 26LB-CC-1810-150x300x400	T0.15+/-0.15mm x 300mm x 400mm
	"26" : Dk by resonant cavity "L" : Low loss version "A" : Branch number "CC" : Copper laminated both sides "C0" : Copper laminated one side "18" : 18um copper "10" : Rz of copper surface roughness by um "150" : Fluoro resin thickness by um "300" : Width by mm "400" : Length by mm	Available thickness: 100 - 400um Copper foil: 18um and 35um

HANDLING NOTES

- It is recommended to compress the material with the equal ratio on the whole surface. Partial excessive stress may also result in excessive silicone oil exudation.

WARRANTY STATEMENT

- Properties of the products may be revised due to some changes for improving performance.
- Properties values in this document are not specification or guaranteed.
- The product is designed, developed, and manufactured for general industrial use only. Never use for medical, surgical, and/or relating purposes. Never use for the purpose of implantation and/or other purposes by which a part of or whole product remains in human body.
- Before using, a safety must be evaluated and verified by the purchaser.
- Contents described in the document do not guarantee the performances and qualities required for the purchaser's specific purposes. The purchaser is responsible for pre-testing the product under the purchaser's specific conditions and for verifying the expected performances.
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