

Laminate Information Sheet

Vendor	Product	Type	Electrical Strength: Minimum (volts/mil.)	UL	Glass Transition Temperature "Tg" (Celsius)	Degradation Temperature By TGA (Celsius)	Dielectric Constant (1 MHz)	Dielectric Constant (1 GHz)	Dielectric Constant (10 GHz)	Loss Tangent at (1 MHz)	Loss Tangent at (1 GHz)	Loss Tangent at (10 GHz)
ISOLA	FR402	FR4	1100	V0	140		4.7	4.25		0.0025	0.0016	
	FR406	FR4 High Temp	1000	V0	170		4.6	4.29		0.023	0.014	
	FR408	FR4	1400	V0	180		3.8	3.7		0.01	0.01	
	G200	BT	1175	V0	180		4.1	3.9		0.013	0.009	
	GIGAVER	APPE	1400	V0	210			3.7	3.65		0.007	0.009
	MLPA	Polyimide	1300	V0	220 - 260		4.5			0.010		
Nelco	N4000-2	FR-4	1250	V0	130 - 140	300	4.4	4.1		0.027	TBD	
	N4000-6	FR4 High Temp	1300	V0	170-175	300	4.4	4.1	*4.0	0.027	0.022	
	N4000-7	FR-4	1100	V0	155	317	4.5	4.0	3.9	0.018	0.017	0.017
	N4000-13	PPE	1200	V0	210 - 240	350	3.8	3.7	3.6		0.014	0.014
	N4000-13 SI	PPE	1000	V0	210 - 240	350	3.5	3.2	3.2		0.009	0.01
	N5000	BT	1200	V0	185 - 220	334	3.8	3.6	3.6		0.014	0.014
	N6000	APPE	1300	V0	170 - 210	360	3.5	3.4	3.4		0.009	0.009
	N6000 SI	APPE	1000	V0	170 - 210	360	3.3	3.2	3.1		TBD	TBD
	N7000-1	Polyimide	1350	V1	250 - 260	389	3.9	3.9	3.9		0.015	0.016
	N8000	CE	1650	V0	240 - 300	376	3.7	3.6	3.5		0.011	0.011
	N9000 NY Series	PTFE / Glass	50k	V0					2.08-2.33			.0006-.0011
	N9000 NX Series	PTFE / Glass	50k	V0					2.40-3.20			.0016-.0024
	N9000 NH Series	PTFE / Glass	50k	V0					2.94-3.50			.0016-.0024
Thickness 0.0015	FV6700	Bonding Film	3.75k						2.35			0.0025
GE	GETEK	PPO	1-1.2K	V0	175-185		3.6-4.2			.01-.015		
GIL	GML2032	Polyester		V0	140				3.2			0.0029
	GML1000	Polyester		V0	140				3.2			0.004
	GML1032	Polyester		V0	135				3.2			0.004
	GML1034	Polyester		V0	135				3.38			0.005
	GML1100	Polyester	2270	V0	160				3.32			0.005
Rogers	RT/duroid 5880	PTFE / Glass		V0						0.0009		
	RT/duroid 5870	PTFE / Microfiber		V0						0.0012		
	Ultralam 1000	PTFE / Glass		V0								
	Ultralam 2000	PTFE / Glass		V0				2.4 - 2.6		0.0019		
	RT/duroid 6002	Cer/PTFE		V0				2.94		0.0012		
	RT/duroid 6006	Cer/PTFE		V0				6.15		0.0019		
	RT/duroid 6010	Cer/PTFE		V0				10.2		0.0023		
	TMM3	Plastic / Ceramic						3.27		0.0016		
	TMM4	Plastic / Ceramic						4.5		0.0017		
	TMM6	Plastic / Ceramic						6		0.0018		
	TMM10	Plastic / Ceramic						9.2		0.0017		
	TMM10i	Plastic / Ceramic						9.8		0.0015		
	3003	Cer/PTFE		V0					3			0.0013
	3006	Cer/PTFE		V0					6.15			0.0025
	3010	Cer/PTFE		V0					10.2			0.0035
	3203	Cer/PTFE		V0					3.02			0.0016
	3210	Cer/PTFE		V0					10.2			0.003
Thickness .0015	3001	Bonding Film	2500						2.28			0.003
	4003	Cer/Glass	650	V0	280				3.38			0.0027
	4350	Cer/Glass	800	V0	280				3.48			0.004
Thickness .004	4450	Prepreg	1000	V0	>280				3.54			0.004
Thickness .004	4403	Prepreg	1000		280				3.17			0.005
Taconic	TLC	PTFE / Glass		V0					3.20			0.003
	TLE	PTFE / Glass		V0					2.95			0.0028
	TLT	PTFE / Glass		V0					2.50			0.0006
	TLX	PTFE / Glass		V0					2.50			0.0019
Gore	N	PTFE	>900	V0	140		3.0			0.02		
Speedboard	C	PTFE	>1000	V0	220		2.6 - 2.7			0.004		
Polyclad	PCL-FR-250-150	FR4	1200	V0	155	320	4.6	4.3		0.015	0.015	
	PLC-FR-370-175	FR4 High Temp	1300	V0	175	310	4.6	4.5		0.015	0.015	

Legend

FR4	High Speed RF
High Temp FR4	High Tg Material
Low Loss FR4 or Equivalent	Red Text Not Supported

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