

Data Sheet

High Speed, Low Loss Multi-layer

Halogen free Materials

Material for PA and Antenna application

Laminate V-5575

Prepreg V-5470

Specification / Laminate V-5575

Property		Units	Test Method	Condition	Typical Value	
THERMAL	Glass Transition Temp (Tg)	C	TMA	As received	205	
			DMA	As received	245	
	Thermal Decomposition Temp (Td)		C	TGA	As received	440
	Time to Delam (T288)	Without Cu	min	IPC TM-650 2.4.24.1	As received	> 120
		With Cu	min	IPC TM-650 2.4.24.1	As received	> 120
	CTE : $\alpha 1$	X - axis	ppm / C	IPC TM-650 2.4.24	< Tg	13 - 16
		Y - axis	ppm / C	IPC TM-650 2.4.24	< Tg	13 - 16
		Z - axis	ppm / C	IPC TM-650 2.4.24	< Tg	20
	CTE : $\alpha 2$	Z - axis	ppm / C	IPC TM-650 2.4.24	> Tg	155
Thermal Conductivity		W / m K	Laser flash	25C	0.60	
ELECTRICAL	Volume Resistivity		M Ω - cm	IPC TM-650 2.5.17.1	C-96/35/90	1 x 10 ⁹
	Surface Resistivity		M Ω	IPC TM-650 2.5.17.1	C-96/35/90	1 x 10 ⁸
	Dielectric Constant (Dk)	@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	3.73
		@ 12GHz	-	" Note 1	C-24/23/50	3.65
	Dissipation Factor (Df)	@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	0.002
		@ 12GHz	-	" Note 1	C-24/23/50	0.004
PHYSICAL	Water Absorption		%	IPC TM-650 2.6.2.1	D-24/23	0.23
	Peel Strength	1oz (RTF)	kN / m	IPC TM-650 2.4.8	As Received	0.8
	Flammability		-	UL	C-48/23/50	94V-0

Sample thickness : 30 mil = 0.76 mm (Core Type 30) #1078 x 9ply

Note 1 : Balanced-Type Circular Disk Resonance Method

* The data in the above table are not guaranteed values.

Specification /Laminate V-5575

1GHz ; IPC TM650-2.5.5.9

6-50GHz ; Balanced-Type Circular Disk Resonance Method

Core Type	Actual Thickness		Cloth Style	ply	Typical Resin Content (%)	Typical Dk									
	mil	mm				1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
4	4.0	0.102	1078	1	75	3.60	3.53	3.52	3.51	3.51	3.51	3.51	3.51	3.51	3.51
5	5.0	0.127	3313	1	66	3.80	3.73	3.72	3.71	3.71	3.71	3.71	3.71	3.71	3.71
5	5.0	0.127	1078	1	79	3.53	3.45	3.44	3.43	3.43	3.43	3.43	3.43	3.43	3.43
6	6.0	0.152	2116	1	63	3.87	3.80	3.79	3.78	3.78	3.78	3.78	3.78	3.78	3.78
6.6	6.6	0.168	1078	2	69	3.73	3.66	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64
6.6	6.6	0.168	1067	2	80	3.51	3.43	3.42	3.41	3.41	3.41	3.41	3.41	3.41	3.41
8	8.0	0.203	1078	2	75	3.60	3.53	3.52	3.51	3.51	3.51	3.51	3.51	3.51	3.51
10	10.0	0.254	1078	3	69	3.73	3.66	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64
10	10.0	0.254	3313	2	66	3.80	3.73	3.72	3.71	3.71	3.71	3.71	3.71	3.71	3.71
13.3	13.3	0.338	1078	4	69	3.73	3.66	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64
13.3	13.3	0.338	1067	4	80	3.51	3.43	3.42	3.41	3.41	3.41	3.41	3.41	3.41	3.41
16.6	16.6	0.422	1078	5	69	3.73	3.66	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64
16.6	16.6	0.422	1067	5	80	3.51	3.43	3.42	3.41	3.41	3.41	3.41	3.41	3.41	3.41
20	20.0	0.508	1078	6	69	3.73	3.66	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64
20	20.0	0.508	3313	4	66	3.80	3.73	3.72	3.71	3.71	3.71	3.71	3.71	3.71	3.71
30	30.0	0.762	1078	9	69	3.73	3.66	3.65	3.64	3.64	3.64	3.64	3.64	3.64	3.64
30	30.0	0.762	3313	6	66	3.80	3.73	3.72	3.71	3.71	3.71	3.71	3.71	3.71	3.71

* The data in the above table are not guaranteed values.

Specification / Laminate V-5575

1GHz ; IPC TM650-2.5.5.9

6-50GHz ; Balanced-Type Circular Disk Resonance Method

Core Type	Actual Thickness		Cloth Style	ply	Typical Resin Content (%)	Typical Df									
	mil	mm				1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
4	4.0	0.102	1078	1	75	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
5	5.0	0.127	3313	1	66	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
5	5.0	0.127	1078	1	79	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
6	6.0	0.152	2116	1	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
6.6	6.6	0.168	1078	2	69	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
6.6	6.6	0.168	1067	2	80	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
8	8.0	0.203	1078	2	75	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
10	10.0	0.254	1078	3	69	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
10	10.0	0.254	3313	2	66	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
13.3	13.3	0.338	1078	4	69	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
13.3	13.3	0.338	1067	4	80	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
16.6	16.6	0.422	1078	5	69	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
16.6	16.6	0.422	1067	5	80	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
20	20.0	0.508	1078	6	69	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
20	20.0	0.508	3313	4	66	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
30	30.0	0.762	1078	9	69	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
30	30.0	0.762	3313	6	66	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006

* The data in the above table are not guaranteed values.

Specification / Prepreg V-5470

1GHz ; IPC TM650-2.5.5.9

6-50GHz ; Balanced-Type Circular Disk Resonance Method

Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Dk									
			1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
1067	78	75	3.54	3.47	3.46	3.45	3.45	3.45	3.45	3.45	3.45	3.45
	81	90	3.49	3.41	3.4	3.39	3.39	3.39	3.39	3.39	3.39	3.39
	83	100	3.45	3.37	3.36	3.35	3.35	3.35	3.35	3.35	3.35	3.35
1078	79	125	3.53	3.45	3.44	3.43	3.43	3.43	3.43	3.43	3.43	3.43

Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Df									
			1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
1067	78	75	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
	81	90	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	83	100	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
1078	79	125	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006

* The data in the above table are not guaranteed values.