

Data Sheet

High Speed, Low Loss Multi-layer Materials

MEGTRON6

**Laminate R-5775
Prepreg R-5670**

Apr. 2016 No.16040729

Specification / Laminate R-5775

Property			Units	Test Method	Condition	Value
THERMAL	Glass Transition Temp (Tg)		C	DSC	As received	185
				DMA	As received	210
	Thermal Decomposition Temp (Td)		C	TGA	As received	410
	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	14 - 16
		Y - axis	ppm / C	IPC TM-650 2.4.24	< Tg	14 - 16
		Z - axis	ppm / C	IPC TM-650 2.4.24	< Tg	45
	CTE : $\alpha 2$	Z - axis	ppm / C	IPC TM-650 2.4.24	> Tg	260
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	3.71
		@ 12GHz	-	*Note 1	C-24/23/50	3.63
	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	0.14
	Peel Strength	1oz (H-VLP)	kN / m	IPC TM-650 2.4.8	As Received	0.8
	Flammability		-	UL	C-48/23/50	94V-0

Sample thickness ; 29.5 mil = 0.750 mm (Core Type 30)

Note 1: The method by H. Kawabata, Proceedings of the 36th European Microwave Conference, 388-391 (2006)

*The data above show actual values and are not guaranteed.

Specification / Laminate R-5775(K)

1GHz : IPC TM650-2.5.5.9

6-50GHz ; The method by H. Kawabata, Proceedings of the 36th European Microwave Conference, 388-391 (2006)

Core Type	Actual Thickness		Cloth Style	ply	Typical Resin Content (%)	Typical Dk									
	mil	mm				1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
2	2.0	0.050	1035	1	65	3.46	3.39	3.38	3.37	3.37	3.37	3.37	3.37	3.37	3.37
2.6	2.6	0.065	1080	1	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
2.6	2.6	0.065	1078	1	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
3	3.0	0.075	1078	1	63	3.49	3.42	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40
4	3.9	0.100	3313	1	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
4	3.9	0.100	1035	2	65	3.46	3.39	3.38	3.37	3.37	3.37	3.37	3.37	3.37	3.37
5	5.0	0.127	1078	2	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
5	4.9	0.125	2116	1	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
5	5.1	0.130	1080	2	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
6	5.7	0.146	1078	2	63	3.49	3.42	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40
6	5.9	0.150	1080	2	63	3.49	3.42	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40
8	7.9	0.200	3313	2	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
10	9.8	0.250	2116	2	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
12	11.8	0.300	3313	3	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
16	15.7	0.400	3313	4	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
20	19.7	0.500	2116	4	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
22	21.9	0.555	7628	3	42	4.07	4.00	3.99	3.98	3.98	3.98	3.98	3.98	3.98	3.98
25	24.6	0.625	2116	5	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
29	29.1	0.740	7628	4	42	4.07	4.00	3.99	3.98	3.98	3.98	3.98	3.98	3.98	3.98
30	29.5	0.750	2116	6	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
37	36.4	0.925	7628	5	42	4.07	4.00	3.99	3.98	3.98	3.98	3.98	3.98	3.98	3.98

*The data above show actual values and are not guaranteed.

Specification / Laminate R-5775(K)

1GHz : IPC TM650-2.5.5.9

6-50GHz ; The method by H. Kawabata, Proceedings of the 36th European Microwave Conference, 388-391 (2006)

Core Type	Actual Thickness		Cloth Style	ply	Typical Resin Content (%)	Typical Df									
	mil	mm				1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
2	2.0	0.050	1035	1	65	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
2.6	2.6	0.065	1080	1	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
2.6	2.6	0.065	1078	1	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
3	3.0	0.075	1078	1	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
4	3.9	0.100	3313	1	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
4	3.9	0.100	1035	2	65	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
5	5.0	0.127	1078	2	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
5	4.9	0.125	2116	1	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
5	5.1	0.130	1080	2	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
6	5.7	0.146	1078	2	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
6	5.9	0.150	1080	2	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
8	7.9	0.200	3313	2	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
10	9.8	0.250	2116	2	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
12	11.8	0.300	3313	3	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
16	15.7	0.400	3313	4	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
20	19.7	0.500	2116	4	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
22	21.9	0.555	7628	3	42	0.002	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
25	24.6	0.625	2116	5	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
29	29.1	0.740	7628	4	42	0.002	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
30	29.5	0.750	2116	6	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
37	36.4	0.925	7628	5	42	0.002	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006

*The data above show actual values and are not guaranteed.

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1GHz ; IPC TM650-2.5.5.9

6-50GHz ; The method by H. Kawabata, Proceedings of the 36th European Microwave Conference, 388-391 (2006)

Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Dk									
			1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
1027	75	49	3.28	3.21	3.20	3.19	3.19	3.19	3.19	3.19	3.19	3.19
1035	70	60	3.35	3.28	3.27	3.26	3.26	3.26	3.26	3.26	3.26	3.26
	73	68	3.29	3.23	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
	75	74	3.28	3.21	3.20	3.19	3.19	3.19	3.19	3.19	3.19	3.19
1080	64	76	3.47	3.40	3.39	3.38	3.38	3.38	3.38	3.38	3.38	3.38
	68	87	3.41	3.34	3.33	3.32	3.32	3.32	3.32	3.32	3.32	3.32
1078	64	77	3.47	3.40	3.39	3.38	3.38	3.38	3.38	3.38	3.38	3.38
	68	89	3.41	3.34	3.33	3.32	3.32	3.32	3.32	3.32	3.32	3.32
	72	104	3.31	3.24	3.23	3.22	3.22	3.22	3.22	3.22	3.22	3.22
	75	118	3.28	3.21	3.20	3.19	3.19	3.19	3.19	3.19	3.19	3.19
3313	54	98	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
	57	106	3.65	3.58	3.57	3.56	3.56	3.56	3.56	3.56	3.56	3.56
2116	54	125	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
	56	132	3.67	3.60	3.59	3.58	3.58	3.58	3.58	3.58	3.58	3.58

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Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Df									
			1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
1027	75	49	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
1035	70	60	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	73	68	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	75	74	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
1080	64	76	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
	68	87	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
1078	64	77	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
	68	89	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
	72	104	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	75	118	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
3313	54	98	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
	57	106	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
2116	54	125	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
	56	132	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006

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Specification / Laminate R-5775(G)

1GHz ; IPC TM650-2.5.5.9

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Core Type	Actual Thickness		Cloth Style	ply	Typical Resin Content (%)	Typical Dk									
	mil	mm				1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
2	2.0	0.050	1035	1	65	3.46	3.39	3.38	3.37	3.37	3.37	3.37	3.37	3.37	3.37
2.6	2.6	0.065	1080	1	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
2.6	2.6	0.065	1078	1	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
3	3.0	0.075	1078	1	63	3.49	3.42	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40
4	3.9	0.100	3313	1	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
4	3.9	0.100	1035	2	65	3.46	3.39	3.38	3.37	3.37	3.37	3.37	3.37	3.37	3.37
5	5.0	0.127	1078	2	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
5	4.9	0.125	2116	1	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
5	5.1	0.130	1080	2	57	3.65	3.58	3.56	3.55	3.55	3.55	3.55	3.55	3.55	3.55
6	5.7	0.146	1078	2	63	3.49	3.42	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40
6	5.9	0.150	1080	2	63	3.49	3.42	3.41	3.40	3.40	3.40	3.40	3.40	3.40	3.40
8	7.9	0.200	3313	2	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
10	9.8	0.250	2116	2	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
12	11.8	0.300	3313	3	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
16	15.7	0.400	3313	4	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
20	19.7	0.500	2116	4	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
25	24.6	0.625	2116	5	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
30	29.5	0.750	2116	6	54	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62

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	mil	mm				1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
2	2.0	0.050	1035	1	65	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
2.6	2.6	0.065	1080	1	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
2.6	2.6	0.065	1078	1	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
3	3.0	0.075	1078	1	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
4	3.9	0.100	3313	1	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
4	3.9	0.100	1035	2	65	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
5	5.0	0.127	1078	2	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
5	4.9	0.125	2116	1	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
5	5.1	0.130	1080	2	57	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
6	5.7	0.146	1078	2	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
6	5.9	0.150	1080	2	63	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
8	7.9	0.200	3313	2	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
10	9.8	0.250	2116	2	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
12	11.8	0.300	3313	3	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
16	15.7	0.400	3313	4	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
20	19.7	0.500	2116	4	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
25	24.6	0.625	2116	5	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
30	29.5	0.750	2116	6	54	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006

*The data above show actual values and are not guaranteed.

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Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Dk									
			1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
1035	70	60	3.35	3.28	3.27	3.26	3.26	3.26	3.26	3.26	3.26	3.26
	73	68	3.29	3.23	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
	75	74	3.28	3.21	3.20	3.19	3.19	3.19	3.19	3.19	3.19	3.19
1080	64	76	3.47	3.40	3.39	3.38	3.38	3.38	3.38	3.38	3.38	3.38
	68	87	3.41	3.34	3.33	3.32	3.32	3.32	3.32	3.32	3.32	3.32
1078	64	77	3.47	3.40	3.39	3.38	3.38	3.38	3.38	3.38	3.38	3.38
	68	89	3.41	3.34	3.33	3.32	3.32	3.32	3.32	3.32	3.32	3.32
	72	104	3.31	3.24	3.23	3.22	3.22	3.22	3.22	3.22	3.22	3.22
	75	118	3.28	3.21	3.20	3.19	3.19	3.19	3.19	3.19	3.19	3.19
3313	54	98	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
	57	106	3.65	3.58	3.57	3.56	3.56	3.56	3.56	3.56	3.56	3.56
2116	54	125	3.71	3.64	3.63	3.62	3.62	3.62	3.62	3.62	3.62	3.62
	56	132	3.67	3.60	3.59	3.58	3.58	3.58	3.58	3.58	3.58	3.58

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1GHz ; IPC TM650-2.5.5.9

6-50GHz ; The method by H. Kawabata, Proceedings of the 36th European Microwave Conference, 388-391 (2006)

Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Df									
			1GHz	6GHz	12GHz	18GHz	23GHz	29GHz	34GHz	40GHz	45GHz	50GHz
1035	70	60	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	73	68	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	75	74	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
1080	64	76	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
	68	87	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
1078	64	77	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
	68	89	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006
	72	104	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
	75	118	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.006
3313	54	98	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
	57	106	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
2116	54	125	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006
	56	132	0.002	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006

*The data above show actual values and are not guaranteed.

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