

**Data Sheet**

**Low transmission loss Highly heat resistant  
Multi-layer circuit board materials**

**MEGTRON4S**

**Laminate R-5725S  
Prepreg R-5620S**

Aug. 2022 No.22081048

# Specification / Laminate R-5725S

Property		Units	Test Method	Condition	Typical Value	
THERMAL	Glass Transition Temp ( Tg )	C	DSC	As received	200	
			TMA	As received	190	
			DMA	As received	215	
	Thermal Decomposition Temp ( Td )		C	TGA	As received	360
	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	50
	CTE : $\alpha 1$	X - axis	ppm / C	IPC TM-650 2.4.24	< Tg	12 - 14
		Y - axis	ppm / C	IPC TM-650 2.4.24	< Tg	13 - 15
		Z - axis	ppm / C	IPC TM-650 2.4.24	< Tg	32
CTE : $\alpha 2$	Z - axis	ppm / C	IPC TM-650 2.4.24	> Tg	250	
ELECTRICAL	Volume Resistivity		M $\Omega$ - cm	IPC TM-650 2.5.17.1	C-96/35/90	$1 \times 10^9$
	Surface Resistivity		M $\Omega$	IPC TM-650 2.5.17.1	C-96/35/90	$1 \times 10^8$
	Dielectric Constant ( Dk )	@ 1MHz	-	IPC TM-650 2.5.5.9	C-24/23/50	3.89
		@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	3.83
	Dissipation Factor ( Df )	@ 1MHz	-	IPC TM-650 2.5.5.9	C-24/23/50	0.005
		@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	0.005
PHYSICAL	Water Absorption		%	IPC TM-650 2.6.2.1	D-24/23	0.14
	Peel Strength	1oz	kN / m	IPC TM-650 2.4.8	As Received	1.4
	Flammability		-	UL	C-48/23/50	94V-0

Sample thickness ; 32 mil ( 0.8 mm ) #3313  $\times$  8ply

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

# Specification / Laminate R-5725S

1MHz-1GHz ; IPC TM650-2.5.5.9

Nominal Thickness		Cloth Style	Typical Resin Content (%)	Typical Dk			Typical Df		
mil	mm			1MHz	100MHz	1GHz	1MHz	100MHz	1GHz
2.0	0.05	106 x 1	72	3.39	3.39	3.38	0.005	0.005	0.006
2.0	0.05	1067 x 1	65	3.64	3.61	3.60	0.005	0.005	0.005
2.5	0.06	1080 x 1	57	3.89	3.85	3.83	0.005	0.005	0.005
2.5	0.06	1067 x 1	70	3.47	3.46	3.45	0.005	0.005	0.006
3.0	0.08	1080 x 1	65	3.64	3.61	3.60	0.005	0.005	0.005
3.0	0.08	1078 x 1	65	3.64	3.61	3.60	0.005	0.005	0.005
3.5	0.09	1078 x 1	68	3.54	3.50	3.47	0.005	0.005	0.006
3.5	0.09	106 x 2	69	3.51	3.48	3.46	0.005	0.005	0.006
3.5	0.09	3313 x 1	51	4.10	4.05	4.01	0.004	0.005	0.005
4.0	0.10	3313 x 1	56	3.93	3.88	3.86	0.005	0.005	0.005
4.0	0.10	1067 x 2	65	3.64	3.61	3.60	0.005	0.005	0.005
4.5	0.11	2116 x 1	52	4.05	4.01	3.98	0.005	0.005	0.005
4.5	0.11	1080 x 2	54	4.00	3.95	3.92	0.005	0.005	0.005
4.7	0.12	1080 x 2	57	3.89	3.85	3.83	0.005	0.005	0.005
5.0	0.13	2116 x 1	56	3.93	3.88	3.86	0.005	0.005	0.005
5.0	0.13	1078 x 2	59	3.82	3.79	3.77	0.005	0.005	0.005
5.0	0.13	1080 x 2	60	3.79	3.75	3.74	0.005	0.005	0.005
5.5	0.14	1080 x 2	61	3.75	3.72	3.71	0.005	0.005	0.005
6.0	0.15	1080 x 2	65	3.64	3.61	3.60	0.005	0.005	0.005
6.0	0.15	1504 x 1	49	4.14	4.10	4.07	0.004	0.005	0.005
6.0	0.15	1078 x 2	65	3.64	3.61	3.60	0.005	0.005	0.005
7.0	0.18	3313 x 2	51	4.10	4.05	4.01	0.004	0.005	0.005
7.0	0.18	1067 x 3	70	3.47	3.46	3.45	0.005	0.005	0.006

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

# Specification / Laminate R-5725S

1MHz-1GHz ; IPC TM650-2.5.5.9

Nominal Thickness		Cloth Style	Typical Resin Content (%)	Typical Dk			Typical Df		
mil	mm			1MHz	100MHz	1GHz	1MHz	100MHz	1GHz
7.5	0.19	7628 x 1	44	4.29	4.26	4.22	0.004	0.005	0.005
8.0	0.20	3313 x 2	56	3.93	3.88	3.86	0.005	0.005	0.005
8.0	0.20	2116 x 2	48	4.18	4.14	4.11	0.004	0.005	0.005
9.0	0.23	2116 x 2	52	4.05	4.01	3.98	0.005	0.005	0.005
10.0	0.25	2116 x 2	56	3.93	3.88	3.86	0.005	0.005	0.005
12.0	0.30	1504 x 2	49	4.14	4.10	4.07	0.004	0.005	0.005
14.0	0.36	7628 x 2	42	4.36	4.33	4.29	0.004	0.005	0.005
15.0	0.38	7628 x 2	44	4.29	4.26	4.22	0.004	0.005	0.005
16.0	0.40	7628 x 2	49	4.14	4.10	4.07	0.004	0.005	0.005
16.0	0.40	3313 x 4	56	3.93	3.88	3.86	0.005	0.005	0.005
18.0	0.46	7628x2 + 3313x1	46	4.23	4.20	4.16	0.004	0.005	0.005
20.0	0.51	7628x2 + 1080x2	51	4.10	4.05	4.01	0.004	0.005	0.005
20.0	0.51	7628x2 + 2116x1	47	4.21	4.17	4.14	0.004	0.005	0.005
22.0	0.56	7628 x 3	47	4.21	4.17	4.14	0.004	0.005	0.005
24.0	0.61	7628 x 3	49	4.14	4.10	4.07	0.004	0.005	0.005
26.0	0.66	7628x3 + 2116x1	45	4.26	4.23	4.19	0.004	0.005	0.005
28.0	0.71	7628 x 4	42	4.36	4.33	4.29	0.004	0.005	0.005
31.0	0.79	7628 x 4	47	4.21	4.17	4.14	0.004	0.005	0.005
40.0	1.00	7628 x 5	47	4.21	4.17	4.14	0.004	0.005	0.005
47.0	1.19	7628 x 6	47	4.21	4.17	4.14	0.004	0.005	0.005
47.0	1.19	3313 x 12	56	3.93	3.88	3.86	0.005	0.005	0.005

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

# Specification / Laminate R-5725S

2GHz-10GHz ; IPC TM650-2.5.5.5

Nominal Thickness		Cloth Style	Typical Resin Content (%)	Typical Dk					Typical Df				
mil	mm			2GHz	4GHz	6GHz	8GHz	10GHz	2GHz	4GHz	6GHz	8GHz	10GHz
2.0	0.05	106 x 1	72	3.38	3.37	3.37	3.37	3.37	0.006	0.006	0.007	0.008	0.008
2.0	0.05	1067 x 1	65	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
2.5	0.06	1080 x 1	57	3.82	3.82	3.81	3.80	3.80	0.006	0.006	0.006	0.007	0.007
2.5	0.06	1067 x 1	70	3.44	3.43	3.42	3.42	3.41	0.006	0.006	0.007	0.008	0.008
3.0	0.08	1080 x 1	65	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
3.0	0.08	1078 x 1	65	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
3.5	0.09	1078 x 1	68	3.47	3.46	3.45	3.45	3.45	0.006	0.006	0.007	0.008	0.008
3.5	0.09	106 x 2	69	3.46	3.44	3.44	3.44	3.44	0.006	0.006	0.007	0.008	0.008
3.5	0.09	3313 x 1	51	4.00	3.99	3.97	3.97	3.96	0.006	0.006	0.006	0.007	0.007
4.0	0.10	3313 x 1	56	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007
4.0	0.10	1067 x 2	65	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
4.5	0.11	2116 x 1	52	3.95	3.93	3.92	3.90	3.90	0.006	0.006	0.006	0.007	0.007
4.5	0.11	1080 x 2	54	3.91	3.90	3.88	3.87	3.86	0.006	0.006	0.006	0.007	0.007
4.7	0.12	1080 x 2	57	3.82	3.82	3.81	3.80	3.80	0.006	0.006	0.006	0.007	0.007
5.0	0.13	2116 x 1	56	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007
5.0	0.13	1078 x 2	59	3.76	3.76	3.75	3.75	3.74	0.006	0.006	0.006	0.007	0.007
5.0	0.13	1080 x 2	60	3.72	3.72	3.71	3.70	3.69	0.006	0.006	0.006	0.007	0.007
5.5	0.14	1080 x 2	61	3.69	3.69	3.68	3.68	3.67	0.006	0.006	0.006	0.007	0.007
6.0	0.15	1080 x 2	65	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
6.0	0.15	1504 x 1	49	4.04	4.02	4.00	3.99	3.98	0.006	0.006	0.006	0.007	0.007
6.0	0.15	1078 x 2	65	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
7.0	0.18	3313 x 2	51	4.00	3.99	3.97	3.97	3.96	0.006	0.006	0.006	0.007	0.007
7.0	0.18	1067 x 3	70	3.44	3.43	3.42	3.42	3.41	0.006	0.006	0.007	0.008	0.008

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

# Specification / Laminate R-5725S

2GHz-10GHz ; IPC TM650-2.5.5.5

Nominal Thickness		Cloth Style	Typical Resin Content (%)	Typical Dk					Typical Df				
mil	mm			2GHz	4GHz	6GHz	8GHz	10GHz	2GHz	4GHz	6GHz	8GHz	10GHz
7.5	0.19	7628 x 1	44	4.19	4.16	4.14	4.12	4.11	0.006	0.006	0.006	0.007	0.007
8.0	0.20	3313 x 2	56	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007
8.0	0.20	2116 x 2	48	4.07	4.05	4.03	4.02	4.01	0.006	0.006	0.006	0.007	0.007
9.0	0.23	2116 x 2	52	3.95	3.93	3.92	3.90	3.90	0.006	0.006	0.006	0.007	0.007
10.0	0.25	2116 x 2	56	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007
12.0	0.30	1504 x 2	49	4.04	4.02	4.00	3.99	3.98	0.006	0.006	0.006	0.007	0.007
14.0	0.36	7628 x 2	42	4.25	4.22	4.20	4.18	4.17	0.006	0.006	0.006	0.007	0.007
15.0	0.38	7628 x 2	44	4.19	4.16	4.14	4.12	4.11	0.006	0.006	0.006	0.007	0.007
16.0	0.40	7628 x 2	49	4.04	4.02	4.00	3.99	3.98	0.006	0.006	0.006	0.007	0.007
16.0	0.40	3313 x 4	56	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007
18.0	0.46	7628x2 + 3313x1	46	4.13	4.10	4.08	4.07	4.06	0.006	0.006	0.006	0.007	0.007
20.0	0.51	7628x2 + 1080x2	51	4.00	3.99	3.97	3.97	3.96	0.006	0.006	0.006	0.007	0.007
20.0	0.51	7628x2 + 2116x1	47	4.10	4.08	4.06	4.05	4.04	0.006	0.006	0.006	0.007	0.007
22.0	0.56	7628 x 3	47	4.10	4.08	4.06	4.05	4.04	0.006	0.006	0.006	0.007	0.007
24.0	0.61	7628 x 3	49	4.04	4.02	4.00	3.99	3.98	0.006	0.006	0.006	0.007	0.007
26.0	0.66	7628x3 + 2116x1	45	4.16	4.13	4.11	4.10	4.09	0.006	0.006	0.006	0.007	0.007
28.0	0.71	7628 x 4	42	4.25	4.22	4.20	4.18	4.17	0.006	0.006	0.006	0.007	0.007
31.0	0.79	7628 x 4	47	4.10	4.08	4.06	4.05	4.04	0.006	0.006	0.006	0.007	0.007
40.0	1.00	7628 x 5	47	4.10	4.08	4.06	4.05	4.04	0.006	0.006	0.006	0.007	0.007
47.0	1.19	7628 x 6	47	4.10	4.08	4.06	4.05	4.04	0.006	0.006	0.006	0.007	0.007
47.0	1.19	3313 x 12	56	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007

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

# Specification / Prepreg R-5620S

1MHz - 1GHz ; IPC TM650-2.5.5.9

Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Dk			Typical Df		
			1MHz	100MHz	1GHz	1MHz	100MHz	1GHz
106	72	51	3.39	3.39	3.38	0.005	0.005	0.006
	75	58	3.33	3.33	3.32	0.005	0.005	0.006
1067	66	52	3.58	3.56	3.56	0.005	0.005	0.005
	70	59	3.47	3.46	3.45	0.005	0.005	0.006
	74	70	3.34	3.34	3.33	0.005	0.005	0.006
1080	65	76	3.64	3.61	3.60	0.005	0.005	0.005
	67	81	3.56	3.53	3.51	0.005	0.005	0.005
	69	87	3.51	3.48	3.46	0.005	0.005	0.006
	73	102	3.38	3.38	3.37	0.005	0.005	0.006
	77	122	3.32	3.32	3.31	0.005	0.005	0.006
1078	64	75	3.65	3.63	3.62	0.005	0.005	0.005
	69	89	3.51	3.48	3.46	0.005	0.005	0.006
	73	104	3.38	3.38	3.37	0.005	0.005	0.006
3313	57	103	3.89	3.85	3.83	0.005	0.005	0.005
	60	113	3.79	3.75	3.74	0.005	0.005	0.005
	63	123	3.69	3.66	3.65	0.005	0.005	0.005
2116	53	118	4.03	3.98	3.95	0.005	0.005	0.005
	56	128	3.93	3.88	3.86	0.005	0.005	0.005
	59	139	3.82	3.79	3.77	0.005	0.005	0.005
1504	51	160	4.10	4.05	4.01	0.004	0.005	0.005
1501	51	178	4.10	4.05	4.01	0.004	0.005	0.005
7628	44	190	4.29	4.26	4.22	0.004	0.005	0.005

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

# Specification / Prepreg R-5620S

2GHz-10GHz ; IPC TM650-2.5.5.5

Cloth Style	Resin Content (%)	Typical Thickness (um)	Typical Dk					Typical Df				
			2GHz	4GHz	6GHz	8GHz	10GHz	2GHz	4GHz	6GHz	8GHz	10GHz
106	72	51	3.38	3.37	3.37	3.37	3.37	0.006	0.006	0.007	0.008	0.008
	75	58	3.32	3.31	3.31	3.31	3.31	0.006	0.007	0.007	0.008	0.009
1067	66	52	3.56	3.56	3.56	3.56	3.55	0.006	0.006	0.007	0.008	0.008
	70	59	3.44	3.43	3.42	3.42	3.41	0.006	0.006	0.007	0.008	0.008
	74	70	3.33	3.32	3.32	3.32	3.32	0.006	0.007	0.007	0.008	0.008
1080	65	76	3.59	3.58	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
	67	81	3.51	3.51	3.50	3.50	3.50	0.006	0.006	0.007	0.008	0.008
	69	87	3.46	3.44	3.44	3.44	3.44	0.006	0.006	0.007	0.008	0.008
	73	102	3.37	3.36	3.36	3.36	3.36	0.006	0.006	0.007	0.008	0.008
	77	122	3.31	3.31	3.30	3.30	3.30	0.006	0.007	0.008	0.008	0.009
1078	64	75	3.62	3.62	3.61	3.61	3.61	0.006	0.006	0.007	0.007	0.008
	69	89	3.46	3.44	3.44	3.44	3.44	0.006	0.006	0.007	0.008	0.008
	73	104	3.37	3.36	3.36	3.36	3.36	0.006	0.006	0.007	0.008	0.008
3313	57	103	3.82	3.82	3.81	3.80	3.80	0.006	0.006	0.006	0.007	0.007
	60	113	3.72	3.72	3.71	3.70	3.69	0.006	0.006	0.006	0.007	0.007
	63	123	3.65	3.65	3.64	3.64	3.64	0.006	0.006	0.007	0.007	0.007
2116	53	118	3.94	3.92	3.90	3.88	3.87	0.006	0.006	0.006	0.007	0.007
	56	128	3.85	3.85	3.84	3.83	3.83	0.006	0.006	0.006	0.007	0.007
	59	139	3.76	3.76	3.75	3.75	3.74	0.006	0.006	0.006	0.007	0.007
1504	51	160	4.00	3.99	3.97	3.97	3.96	0.006	0.006	0.006	0.007	0.007
1501	51	178	4.00	3.99	3.97	3.97	3.96	0.006	0.006	0.006	0.007	0.007
7628	44	190	4.19	4.16	4.14	4.12	4.11	0.006	0.006	0.006	0.007	0.007

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



## ++ Before purchase ++

### 【Notes before you use】

- Please verify the suitability and fitness for intended application by quality testing, evaluation or other means at your own option before any adoption, use or change of use conditions of a product listed in the datasheet.
- We would like to have a delivery specifications mutually agreed for the product that you have decided to use. The agreements defined in the delivery specifications are assigned higher priority.
- Please note that images shown may somewhat differ from the actual product in color.
- Please note that specifications and external design are subject to change for product improvement without notice.
- For details on products in the datasheet, please contact your distributor or our sales department.

### 【Safety Information】

- Before using the product, please read the delivery specifications carefully or contact the distributor from which you purchased the product or our sales department in order to use the product correctly.
- The products in the datasheet are Electronic circuit board materials for electronic and electrical devices. Please do not use them for other than specified use.

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