

Data Sheet

High Speed, Low Loss Multi-layer Materials

MEGTRON4S

Laminate R-5725S
Prepreg R-5620S

Sep. 2018 No.18090548

Specification / Laminate R-5725S

Property		Units	Test Method	Condition	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 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)	@ 1MHz	-	IPC TM-650 2.5.5.9	C-24/23/50	3.9
		@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	3.8
	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 × 8ply

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

Specification / Laminate R-5725S

1MHz - 1GHz ; IPC TM650-2.5.5.9

Core Type	Actual Thickness		Cloth Style	Typical Resin Content (%)	Typical Dk			Typical Df		
	mil	mm			1MHz	100MHz	1GHz	1MHz	100MHz	1GHz
2	2.0	0.050	106 X 1	72	3.39	3.39	3.38	0.005	0.005	0.006
2	2.0	0.050	1067 X 1	66	3.58	3.56	3.56	0.005	0.005	0.005
2.5	2.4	0.060	1080 X 1	59	3.82	3.79	3.77	0.005	0.005	0.005
2.5	2.4	0.060	1067 X 1	70	3.47	3.46	3.45	0.005	0.005	0.006
3	3.1	0.080	1080 X 1	65	3.64	3.61	3.60	0.005	0.005	0.005
3	3.1	0.080	1078 X 1	65	3.64	3.61	3.60	0.005	0.005	0.005
3.4	3.5	0.090	1078 X 1	68	3.54	3.50	3.47	0.005	0.005	0.006
3.5	3.5	0.090	106 X 2	69	3.51	3.48	3.46	0.005	0.005	0.006
3.5	3.5	0.090	3313 X 1	51	4.10	4.05	4.01	0.004	0.005	0.005
4	3.9	0.100	3313 X 1	57	3.89	3.85	3.83	0.005	0.005	0.005
4	3.9	0.100	1067 X 2	66	3.58	3.56	3.56	0.005	0.005	0.005
4.5	4.3	0.110	2116 X 1	51	4.10	4.05	4.01	0.004	0.005	0.005
4.7	4.7	0.120	1080 X 2	57	3.89	3.85	3.83	0.005	0.005	0.005
5	5.1	0.130	2116 X 1	56	3.93	3.88	3.86	0.005	0.005	0.005
6	5.9	0.150	1080 X 2	65	3.64	3.61	3.60	0.005	0.005	0.005
6	5.9	0.150	1504 X 1	49	4.14	4.10	4.07	0.004	0.005	0.005
6	5.9	0.150	1078 X 2	65	3.64	3.61	3.60	0.005	0.005	0.005
7	7.1	0.180	3313 X 2	52	4.05	4.01	3.98	0.005	0.005	0.005
7	7.1	0.180	1067 X 3	70	3.47	3.46	3.45	0.005	0.005	0.006
8	7.9	0.200	3313 X 2	57	3.89	3.85	3.83	0.005	0.005	0.005
8	7.9	0.200	2116 X 2	47	4.21	4.17	4.14	0.004	0.005	0.005
9	9.1	0.230	2116 X 2	52	4.05	4.01	3.98	0.005	0.005	0.005
10	9.8	0.250	2116 X 2	56	3.93	3.88	3.86	0.005	0.005	0.005
12	11.8	0.300	1504 X 2	49	4.14	4.10	4.07	0.004	0.005	0.005

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

Specification / Laminate R-5725S

2GHz-10GHz ; IPC TM650-2.5.5.5

Core Type	Actual Thickness		Cloth Style	Typical Resin Content (%)	Typical Dk					Typical Df					
	mil	mm			2GHz	4GHz	6GHz	8GHz	10GHz	2GHz	4GHz	6GHz	8GHz	10GHz	
2	2.0	0.050	106 X 1	72	3.38	3.37	3.37	3.37	3.37	3.37	0.006	0.006	0.007	0.008	0.008
2	2.0	0.050	1067 X 1	66	3.56	3.56	3.56	3.56	3.55	3.55	0.006	0.006	0.007	0.008	0.008
2.5	2.4	0.060	1080 X 1	59	3.76	3.76	3.75	3.75	3.74	3.74	0.006	0.006	0.006	0.007	0.007
2.5	2.4	0.060	1067 X 1	70	3.44	3.43	3.42	3.42	3.41	3.41	0.006	0.006	0.007	0.008	0.008
3	3.1	0.080	1080 X 1	65	3.59	3.58	3.57	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
3	3.1	0.080	1078 X 1	65	3.59	3.58	3.57	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
3.4	3.5	0.090	1078 X 1	68	3.47	3.46	3.45	3.45	3.45	3.45	0.006	0.006	0.007	0.008	0.008
3.5	3.5	0.090	106 X 2	69	3.46	3.44	3.44	3.44	3.44	3.44	0.006	0.006	0.007	0.008	0.008
3.5	3.5	0.090	3313 X 1	51	4.00	3.99	3.97	3.97	3.96	3.96	0.006	0.006	0.006	0.007	0.007
4	3.9	0.100	3313 X 1	57	3.82	3.82	3.81	3.80	3.80	3.80	0.006	0.006	0.006	0.007	0.007
4	3.9	0.100	1067 X 2	66	3.56	3.56	3.56	3.56	3.55	3.55	0.006	0.006	0.007	0.008	0.008
4.5	4.3	0.110	2116 X 1	51	4.00	3.99	3.97	3.97	3.96	3.96	0.006	0.006	0.006	0.007	0.007
4.7	4.7	0.120	1080 X 2	57	3.82	3.82	3.81	3.80	3.80	3.80	0.006	0.006	0.006	0.007	0.007
5	5.1	0.130	2116 X 1	56	3.85	3.85	3.84	3.83	3.83	3.83	0.006	0.006	0.006	0.007	0.007
6	5.9	0.150	1080 X 2	65	3.59	3.58	3.57	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
6	5.9	0.150	1504 X 1	49	4.04	4.02	4.00	3.99	3.98	3.98	0.006	0.006	0.006	0.007	0.007
6	5.9	0.150	1078 X 2	65	3.59	3.58	3.57	3.57	3.57	3.57	0.006	0.006	0.007	0.008	0.008
7	7.1	0.180	3313 X 2	52	3.95	3.93	3.92	3.90	3.90	3.90	0.006	0.006	0.006	0.007	0.007
7	7.1	0.180	1067 X 3	70	3.44	3.43	3.42	3.42	3.41	3.41	0.006	0.006	0.007	0.008	0.008
8	7.9	0.200	3313 x 2	57	3.82	3.82	3.81	3.80	3.80	3.80	0.006	0.006	0.006	0.007	0.007
8	7.9	0.200	2116 x 2	47	4.10	4.08	4.06	4.05	4.04	4.04	0.006	0.006	0.006	0.007	0.007
9	9.1	0.230	2116 x 2	52	3.95	3.93	3.92	3.90	3.90	3.90	0.006	0.006	0.006	0.007	0.007
10	9.8	0.250	2116 x 2	56	3.85	3.85	3.84	3.83	3.83	3.83	0.006	0.006	0.006	0.007	0.007
12	11.8	0.300	1504 x 2	49	4.04	4.02	4.00	3.99	3.98	3.98	0.006	0.006	0.006	0.007	0.007

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

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
	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
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
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

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

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
	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
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
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

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

++ Before purchase ++

【Notes before you use】

- Prior to adoption and use of a product contained in the datasheet, please verify the suitability for your application by your quality testing, evaluation, etc.
- 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.

Please Contact us of more

【Technical Marketing】

- Japan (Osaka) TEL: 81-6-6904-2771
- USA (Cupertino) TEL: 1-408-861-3946
- Austria (Enns) TEL: 43-7223-883
- China (Guangzhou) TEL: 86-20-8713-0888

【Sales Offices】

- China (Hong Kong) TEL: 852-2529-3956
- China (Suzhou) TEL: 86-512-6825-1565
- China (Guangzhou) TEL: 86-20-8713-0888
- Korea (Seoul) TEL: 82-2-361-7873
- Taiwan (Hsinchu) TEL: 886-3-598-3201
- Thailand (Ayuthaya) TEL: 66-3533-0846
- Singapore (Bedok) TEL: 65-6241-6754
- Austria (Enns) TEL: 43-7223-883
- USA (Cupertino) TEL: 1-408-861-3946
- Japan (Osaka) TEL: 81-6-6904-2771

Panasonic Corporation
 Automotive & Industrial Systems Company
 Electronic Materials Business Division
 Circuit Board Materials Business Unit.
 Head Office: 1006 Kadoma, Kadoma City, Osaka 571-8506
 TEL: 81-6-6908-1101

industrial.panasonic.com/ww/electronic-materials