

**Data Sheet**

**High heat resistance halogen-free  
multi-layer circuit board materials**

**Halogen-free**

Laminate R-1566S  
Prepreg R-1551S

Oct. 2023 No.23102042

# Specification / Laminate R-1566S

Property		Units	Test Method	Condition	Typical Value	
THERMAL	Glass Transition Temp ( Tg )	°C	DSC	As received	175	
			TMA	As received	170	
			DMA	As received	195	
	Thermal Decomposition Temp ( Td )		°C	TGA	As received	355
	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	10
	CTE : α1	X - axis	ppm / C	IPC TM-650 2.4.24	< Tg	11 – 13
		Y - axis	ppm / C	IPC TM-650 2.4.24	< Tg	13 – 15
Z - axis		ppm / C	IPC TM-650 2.4.24	< Tg	40	
CTE : α2	Z - axis	ppm / C	IPC TM-650 2.4.24	> Tg	180	
ELECTRICAL	Volume Resistivity		MΩ - cm	IPC TM-650 2.5.17.1	C-96/35/90	1 x 10 <sup>9</sup>
	Surface Resistivity		MΩ	IPC TM-650 2.5.17.1	C-96/35/90	1 x 10 <sup>8</sup>
	Dielectric Constant ( Dk )	@ 1MHz	-	IPC TM-650 2.5.5.9	C-24/23/50	5.0
		@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	4.7
	Dissipation Factor ( Df )	@ 1MHz	-	IPC TM-650 2.5.5.9	C-24/23/50	0.011
		@ 1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	0.011
PHYSICAL	Water Absorption		%	IPC TM-650 2.6.2.1	D-24/23	0.18
	Peel Strength	1oz	kN / m	IPC TM-650 2.4.8	As Received	1.6
	Flammability		-	UL	C-48/23/50	94V-0

Sample thickness ; 32 mil ( 0.8 mm )

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

# Specification / Laminate R-1566S

1MHz - 1GHz ; IPC TM650-2.5.5.9

Nominal Thickness		Cloth Style	Typical Resin Content (%)	ply	Typical Dk			Typical Df		
mil	mm				1MHz	100MHz	1GHz	1MHz	100MHz	1GHz
2.5	0.06	1078	56	1	4.8	4.6	4.5	0.012	0.012	0.012
4	0.1	2116	46	1	5.0	4.8	4.7	0.011	0.011	0.011
6	0.15	1501	44	1	5.0	4.8	4.7	0.011	0.011	0.011
8	0.2	7628	46	1	5.0	4.8	4.7	0.011	0.011	0.011
12	0.3	1501	44	2	5.0	4.8	4.7	0.011	0.011	0.011
16	0.4	7628	46	2	5.0	4.8	4.7	0.011	0.011	0.011
20	0.5	7628 / 2116	46	2 / 1	5.0	4.8	4.7	0.011	0.011	0.011
24	0.6	7628	46	3	5.0	4.8	4.7	0.011	0.011	0.011

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# Specification / Prepreg R-1551S

1MHz - 1GHz ; IPC TM650-2.5.5.9

Cloth Style	Resin Contents (%)	Typical Thickness (um)	Typical Dk			Typical Df		
			1MHz	100MHz	1GHz	1MHz	100MHz	1GHz
106	72	51	4.4	4.2	4.2	0.014	0.014	0.014
	74	56	4.4	4.2	4.1	0.014	0.014	0.014
1078	63	73	4.6	4.4	4.3	0.013	0.013	0.013
	66	81	4.5	4.4	4.3	0.013	0.013	0.013
	70	93	4.5	4.3	4.2	0.014	0.014	0.014
1080	63	72	4.6	4.4	4.3	0.013	0.013	0.013
	66	79	4.5	4.4	4.3	0.013	0.013	0.013
	70	91	4.5	4.3	4.2	0.014	0.014	0.014
2116	47	102	4.9	4.8	4.7	0.011	0.011	0.011
	50	110	4.9	4.7	4.6	0.012	0.012	0.012
	54	122	4.8	4.6	4.5	0.012	0.012	0.012
1501	46	159	5.0	4.8	4.7	0.011	0.011	0.011
	50	175	4.9	4.7	4.6	0.012	0.012	0.012
	54	194	4.8	4.6	4.5	0.012	0.012	0.012
7628	47	206	4.9	4.8	4.7	0.011	0.011	0.011
	50	222	4.9	4.7	4.6	0.012	0.012	0.012
	53	240	4.8	4.6	4.5	0.012	0.012	0.012

\* 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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