# **Panasonic**

# **Data Sheet**

Halogen-free

& Narrow Pitch IC Substrate Materials



Jun. 2017 No.17061601

Partnering to go beyond.

**Electronic Materials** Panasonic Corporation

# **Specification / Laminate R-1515A**

Property			Units	Test Method	Condition	Value
THERMAL	Glass Transition Temp (Tg)		С	DMA	As received	205
	Thermal Decomposition Temp (Td)			TGA		390
	Time to Delam (T260)	M/inh Co.		IPC TM-650 2.4.24.1	- As received	> 120
	Time to Delam (T288)	With Cu	min			> 120
	CTE : α1	X - axis	ppm / C	IPC TM-650 2.4.24	< Tg	11 - 13
		Y - axis				11 - 13
		Z - axis				30
	CTE : α2	Z - axis			> Tg	140
	Thermal Conductivity		W / nK	Laser Flash	25 C	0.7
ELECTRICAL	Volume Resistivity		MΩ - cm	IPC TM-650 2.5.17.1	C-96/35/90	1 x 10 <sup>9</sup>
	Surface Resistivity		ΜΩ			1 x 10 <sup>8</sup>
	Dielectric Constant ( Dk )	1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	4.8
	Dissipation Factor ( Df )					0.015
PHYSICAL	Water Absorption		%	IPC TM-650 2.6.2.1	D-24/23	0.12
	Flexural Strength	Х	- Gpa	IPC TM-650 2.4.4	As Received	500
		Υ				460
	Flexural Modulus -	Х		JIS C6481		29
		Y				27
	Peel Strength	35 µm	kN/m	IPC TM-650 2.4.8		1.2
	Flammability		-	UL	C-48/23/50	94V-0

The sample thickness is 0.8mm.



<sup>\*</sup>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

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