

Data Sheet

**Halogen Free
& Narrow Pitch IC Substrate Materials
(Black type)**

MEGTRON  **Laminate R-1515E**

Feb. 2015 No.15020304

Partnering to go beyond.

Electronic Materials
Panasonic Corporation

ПАНИПОН
МЕХНОЛОЖУС

Specification / Laminate R-1515E

Property		Units	Test Method	Condition	Value	
THERMAL	Glass Transition Temp (T _g)		C	DMA	As received	270 * ¹
	Thermal Decomposition Temp (T _d)			TGA		390
	Time to Delam (T ₂₆₀)	With Cu	Min	IPC TM-650 2.4.24.1		> 120
	Time to Delam (T ₂₈₈)					> 120
	CTE : α ₁	X - axis	ppm / C	IPC TM-650 2.4.24	< T _g	8 - 10 * ¹
		Y - axis				8 - 10 * ¹
		Z - axis				22 * ²
	CTE : α ₂	Z - axis			> T _g	95 * ²
Thermal Conductivity		W / mK	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 ⁹ * ¹
	Surface Resistivity					MΩ
	Dielectric Constant (D _k)	1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	4.7
	Dissipation Factor (D _f)					0.011
PHYSICAL	Water Absorption		%	IPC TM-650 2.6.2.1	D-24/23	0.3 * ¹
	Tensile Modulus		GPa	ASTM D3039	25 C	27 * ¹
	Poisson's Ratio					0.2 * ²
	Flexural Modulus		GPa	JIS C6481	25 C	33
					250 C	18
	Peel Strength	12 μm	kN / m	IPC TM-650 2.4.8	As Received	0.9
	Flammability		-	UL	C-48/23/50	4V-2

The sample thickness. *¹ 0.1mm , *² 0.8mm

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

++ Before purchase ++

- * If delivery specifications have been agreed upon, descriptions in the delivery specifications take precedence.
- * Specifications and appearances are subject to change without prior notice for product improvement.
- * For details of the products contained in this catalog, contact your dealer or our sales representative.
- * ALL data are our actual values and not assured values.

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