

Data Sheet

**Halogen-free
& High elasticity Low CTE Ultra-thin IC substrate materials
(Black type)**

LEXCMGX Laminate R-151YE

Any letters with parentheses () at the end of a part number are for identification code in our company and are not included in the part numbers registered for UL certification.

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General Properties / Laminate R-151YE

Items		Units	Test Method	Condition	Typical Values	
					R-151YE	
THERMAL	Glass Transition Temp (Tg)		C	DMA	270 ^{*1}	
	Thermal Decomposition Temp (Td)			TGA	390	
	Time to Delam (T260)	With Cu	Min	IPC TM-650 2.4.24.1	> 120	
	Time to Delam (T288)				> 120	
	CTE : α1	X - axis	ppm / C	IPC TM-650 2.4.24	< Tg	8 - 10 ^{*1}
		Y - axis			8 - 10 ^{*1}	
		Z - axis			22 ^{*2}	
	CTE : α2	Z - axis			> Tg	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 (Dk)	1GHz	-	IPC TM-650 2.5.5.9	C-24/23/50	4.7
	Dissipation Factor (Df)					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 um	kN / m	IPC TM-650 2.4.8	As received	0.9
	Flammability		-	UL 94V	C-48/23/50	94V-0

The sample thickness. ^{*1} 0.1mm , ^{*2} 0.8mm

* The data in the above table represents typical values for your reference and are not guaranteed values.

Panasonic
INDUSTRY