無膠雙面板

Adhesiveless Double Side FCCL

Ⅰ. 主要特性 Features

1. 極佳的撓曲性及剝離強度　Outstanding flexibility and peel strength;
2. 優異的耐熱性和耐化學品性　Excellent thermal resistance and chemical resistance;
3. 良好的尺寸穩定性　Good dimensional stability;
4. 無鹵無銻符合 ROHS 要求　Halogen free and antimony free, meets ROHS requirements

Ⅱ. 主要性能表 General Properties

Item	Type / Material			IF-2LD 4M12N	IF-2LD 4M18N	IF-2LD 4M35N	Remark			
Spec.	TPI Film (μm)			100	100	100	Width 250mm, 500mm Length 100m			
	Copper Foil (μm)			12	18	35	Standard			Test Method
Properties	Test Item		Condition	Value	Value	Value	1/3 OZ	1/2 OZ	1OZ	
	Peel Strength (Kgf/cm)	A	90°	＞1.0	＞1.2	＞1.4	≧0.8	≧1.0	≧1.4	IPC-TM-650 2.4.9
	Chemical Resistance (%)	IPA	Dipping /10min	<3	<3	<3	≦20			IPC-TM-650 2.3.2
		NaOH		<3	<3	<3				
		HCl		<3	<3	<3				
	Water Absorption (%)		D-24/23	<2.0	<2.0	<2.0	≦2.0			IPC-TM-650 2.6.2
	Solder Resistance		288℃/10S /3 次	OK	OK	OK	288℃/10S/3 次			IPC-TM-650 2.4.13
	Dimensional Stability (%)	MD	Method B	-0.07~+0.03	-0.03~+0.05	-0.05~+0.05	≦±0.08			IPC-TM-650 2.2.4
		TD		-0.04~+0.04	-0.04~+0.04	-0.06~+0.04				
		MD	Method C	-0.09~+0.01	-0.09~+0.01	-0.09~+0.01	≦±0.10			
		TD		-0.08~+0.02	-0.08~+0.02	-0.08~+0.02				
	VolumeResistance (Ω-cm)		C-96/23/65	＞2×10^{13}	＞2×10^{13}	＞2×10^{13}	≧10^{13}			IPC-TM-650 2.5.17
	Surface Resistance (Ω)			＞2×10^{12}	＞2×10^{12}	＞2×10^{12}	≧10^{12}			
	Insulation Resistance (Ω)			＞1×10^{9}	＞1×10^{9}	＞1×10^{9}	≧10^{9}			IPC-TM-650 2.6.3.2
	Tg(℃)		DMA	296	296	296	-			ITEQ method
	Dielectric Constant(2GHz)		C-24/23/50	3.3	3.3	3.3	≦4.0			IPC-TM-650 2.5.5.3
	Dissipation Factor (2GHz)			0.007	0.007	0.007	≦0.04			

接上表

Item	Type / Material			IF-2LD 5035N	IF-2LD 5018N	IF-2LD 7535N	IF-2LD 7518N	Remark			
Spec.	TPI Film (μ m)			50	50	75	75	Width 250mm, 500mm Length 100m			
	Copper Foil (μ m)			35	18	35	18	Standard			Test Method
Properties	Test Item		Condition	Value	Value	Value	Value	1/3 OZ	1/2 OZ	1OZ	
	Peel Strength （Kgf/cm）	A	90°	＞1.4	＞1.2	＞1.4	＞1.2	≧0.8	≧1.0	≧1.4	IPC-TM-650 2.4.9
		Chemical Resistance (%) IPA	Dipping /10min	<3	<3	<3	<3	≦20			IPC-TM-650 2.3.2
		Chemical Resistance (%) NaOH		<3	<3	<3	<3				
		Chemical Resistance (%) HCl		<3	<3	<3	<3				
	Water Absorption (%)		D-24/23	<2.0	<2.0	<2.0	<2.0	≦2.0			IPC-TM-650 2.6.2
	Solder Resistance		288℃ /10S/3 次	OK	OK	OK	OK	288℃/10S/3 次			IPC-TM-650 2.4.13
	Dimensional Stability (%)	MD	Method B	-0.04~0.02	-0.04~0.02	-0.01~0.07	-0.01~0.05	≦±0.08			IPC-TM-650 2.2.4
		TD		0.01~0.07	-0.01~0.05	-0.03~0.05	-0.01~0.05				
		MD	Method C	-0.07~-0.01	-0.08~0.02	-0.06~0.02	-0.06~0	≦±0.10			
		TD		-0.03~0.03	-0.05~0.01	-0.05~0.03	-0.07~0.01				
	VolumeResistance (Ω • cm)		C-96/23/65	＞2×10^{13}	＞2×10^{13}	＞2×10^{13}	＞2×10^{13}	≧10^{13}			IPC-TM-650 2.5.17
	Surface Resistance(Ω)			＞2×10^{12}	＞2×10^{12}	＞2×10^{12}	＞2×10^{12}	≧10^{12}			
	Insulation Resistance (Ω)			＞1×10^{9}	＞1×10^{9}	＞1×10^{9}	＞1×10^{9}	≧10^{9}			IPC-TM-650 2.6.3.2
	Tg(℃)		DMA	296	296	296	296	-			ITEQ method
	Dielectric Constant(2GHz)		C-24/23/50	3.3	3.3	3.3	3.3	≦4.0			IPC-TM-650 2.5.5.3
	Dissipation Factor (2GHz)			0.007	0.007	0.007	0.007	≦0.04			

Ⅲ. 儲存條件 Storage

真空包裝：30℃以下，濕度 70%以下，儲存一年。Vacuum Packaging: Lower than 30℃ and 70%RH for one year.