

ETL-XPC-207

(For FR-1, Green TYPE Laminate)

■特性

- 優越的低溫打孔性
- 尺寸變化、彎曲度小
- 優越之電氣火災安全性
- 優越之耐熱性
- IEC 60112 耐漏電破壞試驗可達 600V 以上
- 符合 UL 746E 規範及 RoHS 法規要求
- 不含鹵素(Br、Cl...)及銻(Sb)化合物

■用途 APPLICATIONS

彩色電視機、CD 音響、監視器、VTR、汽車音響、洗衣機、

■CHARACTERS

- Excellent low temperature punchability.
- Dimensional change and warpage are small.
- Electrical fire safety is excellent.
- Excellent heat resistance.
- IEC 60112 Comparative Tracking Index 600+Volts
- Meet UL 746E and conform to the request of RoHS
- It includes neither halogen nor antimony.

■APPLICATIONS

Color TV, CD Player, Monitor, VTR, Car Stereo Equipment, Washing

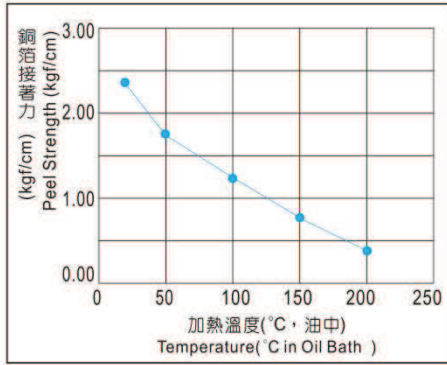
■一般物性 GENERAL PROPERTIES

驗項目 Test Item		單位 Unit	處理條件 Condition	品管規格值 Guarantee Value	實測標準值 Standard Value
體積阻抗 Volume Resistivity		Ω·cm	C-96/20/65	Above 5×10^{12}	$1 \times 10^{13} \sim 1 \times 10^{14}$
			C-96/20/65+C-96/40/90	Above 5×10^{11}	$1 \times 10^{12} \sim 5 \times 10^{13}$
表面阻抗 Surface Resistance	接著劑面 Adhesive Surface	Ω	C-96/20/65	Above 1×10^{11}	$1 \times 10^{11} \sim 5 \times 10^{12}$
			C-96/20/65+C-96/40/90	Above 1×10^{10}	$5 \times 10^{11} \sim 5 \times 10^{12}$
	積層板面 Laminate Surface		C-96/20/65	Above 1×10^{10}	$5 \times 10^{11} \sim 1 \times 10^{12}$
			C-96/20/65+C-96/40/90	Above 1×10^8	$5 \times 10^8 \sim 5 \times 10^9$
絕緣阻抗 Insulation Resistance		Ω	C-96/20/65	Above 1×10^{11}	$5 \times 10^{11} \sim 5 \times 10^{12}$
			C-96/20/65+D-2/100	Above 1×10^8	$5 \times 10^8 \sim 5 \times 10^9$
介電常數(1 MHz) Dielectric Constant		—	C-96/20/65	Less than 5.3	4.1~4.6
			C-96/20/65 +D-24/23	Less than 5.6	4.8~5.2
散發因子(1 MHz) Dissipation Factor		—	C-96/20/65	Less than 0.045	0.030~0.042
			C-96/20/65+D-24/23	Less than 0.055	0.046~0.052
焊錫耐熱性(260°C) Solder Heat Resistance		sec	A	Above 10	20~40
銅箔剝離強度 Peel Strength	銅箔(35μm) Copper Foil	kgf/cm	A	Above 1.5	1.90~2.40
			S (260°C, 10 sec)	Above 1.5	1.90~2.40
彎曲強度 Flexural Strength		kgf/mm ²	A	Above 10	13~16
吸水率 Water Absorption		%	E-24/50+D-24/23	Less than 1.2	0.60~0.80
耐熱性 Heat Resistance		—	A	190°C 30 min no blistering	195~200°C 30 min no blistering
難燃性 Flame Resistance (UL 94 method)		sec	A& E-168/70	Less than $\pi=5$ Max=10	94 V-0
耐藥品性 Alkali Resistance		—	Immersion in 3% NaOH 40°C (3 mins)	無異常 No abnormality	無異常 No abnormality
加工沖孔性 Punchability		—	A	Suitable temp. 60~80 °C	GOOD
耐漏電破壞性 CTI (IEC 60112)		Volt	A	≥600	≥600

◎以上數據試片厚度 1.6mm (Note : Test specimen thickness is 1.6mm)

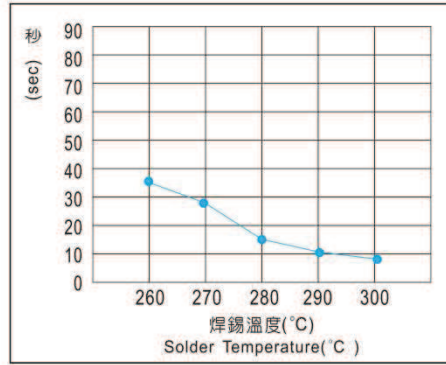
■ 銅箔接著力之溫度特性

Characteristics of Peel Strength vs. Temperature



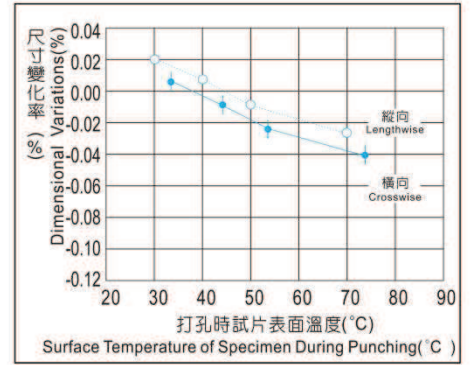
■ 焊錫中耐熱性之溫度特性

Characteristics of Solder Heat Resistance



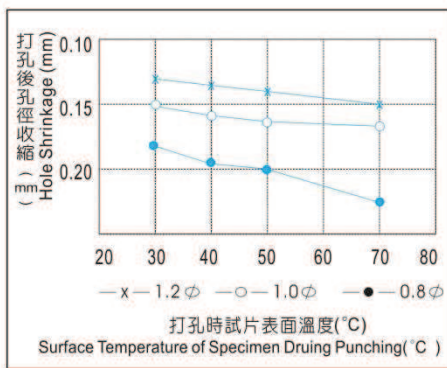
■ 在打孔工程中之尺寸變化

Dimensional Variations During Punching



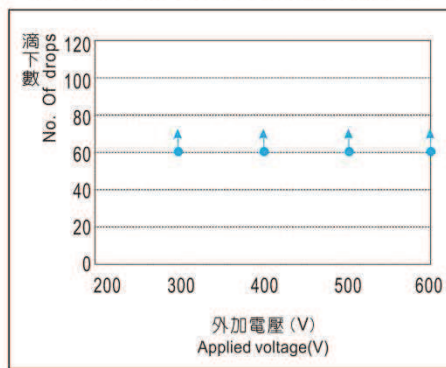
■ 打孔後孔徑收縮

Hole Shrinkage after Punching



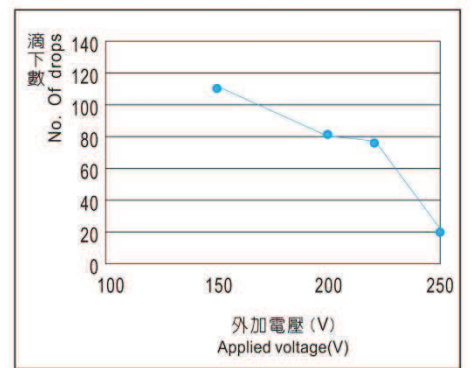
■ 耐漏電破壞性(IEC法0.1%NH₄Cl)(電極間隔:4mm)

Anti-tracking Performance (IEC method 0.1%NH₄Cl)(The space of electrode:4mm)



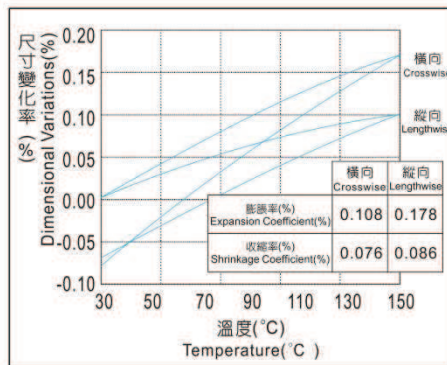
■ 耐漏電破壞性(PATTERN法0.1%NH₄Cl)(回路間隔:0.4mm)

Anti-tracking Performance (Pattern method 0.1%NH₄Cl)(The space of electrode:0.4mm)



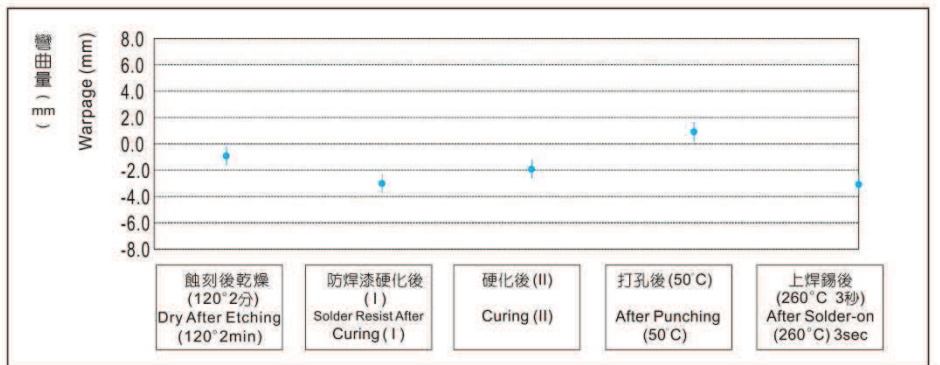
■ 加熱膨脹收縮率

Heat Expansion and Cooling Shrinkage



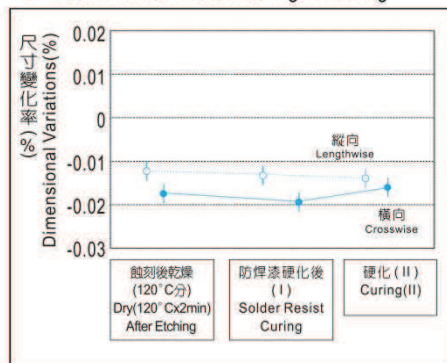
■ 印刷電路板加工時之彎曲(板厚1.6mm單面銅箔)

Warpage During Processing(thickness 1.6mm, single side)



■ 在印刷工程中之尺寸變化

Dimensional Variations During Punching



■ 彎曲隨時間之變化, 加熱後及上焊錫後之彎曲

Warpage vs. Time and Warpage after Heating and Solder-On

