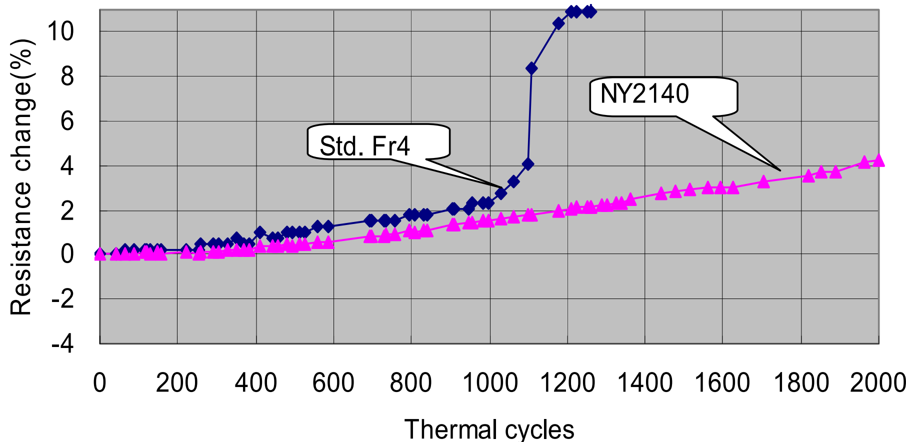
产品编号：**NY2140**

Normal Tg, PN Curing and Contains Fillers, Low Z-CTE, CAF Resistance

特点	***FEATURES***
● **Tg ≥135℃**无铅兼容 **FR-4** 板材	**Tg ≥135℃ Lead-free compatible**
● 优秀的剥离强度	**Excellent Peel Strength**
● 低 **Z-CTE** 值	**Low Z-axis CTE**
● 优秀的耐 **CAF** 性能	**Excellent Anti-CAF Performance**
● **UV Blocking** 和 **AOI** 兼容	**UV Blocking/AOI Compatible**
● 较低的吸水率	**Lower Water Absorption**
● 优秀的尺寸安定性	**Excellent Dimension Stability**

应用领域	***APPLICATIONS***
● 消费电子类	**Consumer Electronics**
● 电源、仪器仪表类	**Power supplies, Instrumentations**
● 通讯设备类	**Communications**
● 汽车电子类	**Automotives, and etc.**

● 优秀的耐热稳定性 **Excellent Thermal Resistance**



Test condition:
(IPC-TM-650 2.6.7.2)
-55℃ × 15min. <=> 125℃×15mins, transfer time ≤2min.
Test samples: PCB 6 layers, thickness 2.0mm hole diameter: 0.35mm pitch:0.7mm

● 优秀的耐 CAF 稳定性 **Excellent Anti-CAF Performance**

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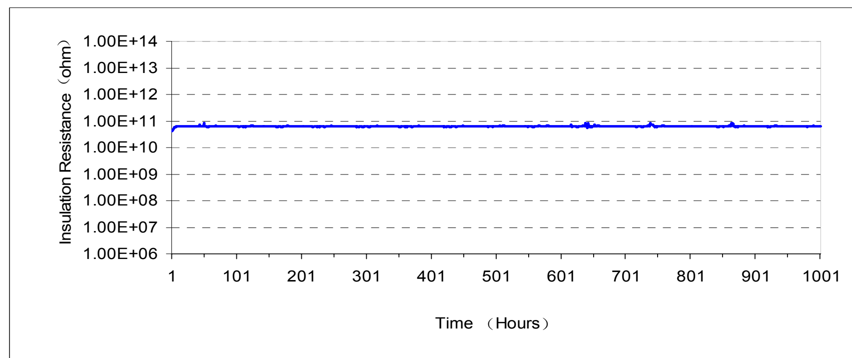


TEST ITEM	CONDITIONS	RESULTS
TH-TH (0.7mm)	SONY 6 Layer TV 85℃/85%RH 50V DC bias	>1000 hr
PA-PA (0.1/0.1mm)		>1000 hr
TH-PA (0.35mm)		>1000 hr
LA-LA		>1000 hr

● NY2140 采购信息 PURCHASING INFORMATION

基板厚度 **Thickness**	厚度公差 **Tolerance**	铜箔 **Copper foil**	标准供应尺寸 **Standard Size**
0.03mm to 3.2mm	IPC4101 Class C/M	1/4 oz to 6 oz	915×1220mm (36″×48″), 1020×1220mm (40″×48″), 1070×1220mm (42″×48″), 1830×1220mm (72″×48″), 2040×1220mm (80″×48″), 2140×1220mm (84″×48″)

*其它尺寸和厚度亦可供应 Other sheet size and thickness could be available upon request.

半固化片 **Prepreg**	标准供应尺寸 **Standard Size**	常用玻纤布型号 **Normal Glass Type**
Normal Anti-CAF LDPP (for HDI)	49.5” ×300 m 49.5” ×150 m	Normal (106, 1080, 2113, 2313, 3313, 2116, 1652, 1506, 7628) Anti-CAF (106, 1080, 2113, 2313, 3313, 2116, 1652, 1506, 7628) Laser Drillable (106, 1037, 1067,1078, 1080, 1086)

*其它裁片尺寸和卷长度亦可供应 Other sheet size and roll length could be available upon request.

● 半固化片产品规格表 Specification Sheet for Prepreg

NY2140 半固化片 **NY2140 Prepreg**	单位 **Units**	产品规格 **Specification**	典型值 **Typical Value**	测试方法 **Test Method**
1. 玻纤布 Reinforcement	-	As per IPC-4412 or AABUS		
2. 树脂含量 Resin Content	%	±2	±2	2.3.16.1C By treated weight
3. 胶化时间 Gel Time	sec	±20	±20	2.3.18A
4. 树脂流量 Resin Flow	%	±5	±5	2.3.17D
5. 挥发份含量 Volatile content	%	<1.5	<1.5	2.3.19C
6. 储存期 Shelf Life (条件1Condition 1 /条件2Condition 2)	Days	180/90	180/90	AABUS
7. 燃烧性 Flammability (压合后as laminated)	rating	V-0	V-0	UL94
8. 其它 Other	-	As per IPC-4101 or AABUS		

*AABUS = 供需双方商定 As agreed upon between user and supplier.
*储存期 Shelf Life (条件1Condition 1 / Temp.: <5℃, 条件2Condition 2/Temp.: <23℃ R.H.: <50%).

- **NY2140基板产品规格表 Specification Sheet for Laminate**

NY2140覆铜箔板 **NY2140 Laminate**	**单位Units**	产品规格 **Specification**		典型值 **Typical Value**	测试方法 **Test Method**
	Metric(English)	<0.50mm	≧0.50mm	1.60mm CCL	IPC-TM-650
1. 抗剥强度 Peel Strength, 收货时 As received A. 1/2 盎司及以下铜箔 17 micron copper B. 1盎司铜箔 35 micron copper C. 2盎司铜箔 70 micron copper D. 3,4,5盎司及以上铜箔 105, 140, 175 micron copper and above	N/mm(lb/inch), minimum	≥0.70 (4.0) ≥0.79 (4.5) ≥0.88 (5.0) ≥0.96 (5.5)	≥0.70 (4.0) ≥1.05 (6.0) ≥1.40 (8.0) ≥1.58 (9.0)	1.42 (1oz)	2.4.8 2.4.8.2 2.4.8.3
2. 体积电阻 Volume Resistivity, A. 恒温恒湿C-96/35/90 B. 耐湿后After moisture resistance C. 高温下 At elevated temperature E-24/125	MΩ-cm, minimum	10^6 --- 10^3	--- 10^4 10^3	--- 6.5×10^8 5.6×10^6	2.5.17.1
3. 表面电阻 Surface Resistivity, A. 恒温恒湿C-96/35/90 B. 耐湿后After moisture resistance C. 高温下 At elevated temperature E-24/125	MΩ, minimum	10^4 --- 10^3	--- 10^4 10^3	--- 3.6×10^7 2.8×10^6	2.5.17.1
4. 吸水率 Moisture Absorption	% maximum	-	0.5	0.12	2.6.2.1
5. 击穿电压 Dielectric Breakdown	kV minimum	-	40	42	2.5.6
6. 介电常数 Permittivity at 1 MHz, (Laminate & Prepreg as laminated)	- maximum	<5.4	<5.4	4.8	2.5.5.3 2.5.5.5 2.5.5.6
7. 介质损耗 Loss Tangent at 1 MHz, (Laminate & Prepreg as laminated)	- maximum	<0.035	<0.035	0.014	2.5.5.3 2.5.5.3 2.5.5.9
8. 弯曲强度 Flexural Strength, A. 纵向 Length direction B. 横向 Cross direction	N/mm^2, minimum	- -	415 345	515 405	2.4.4
9. 高温弯曲强度 Flexural Strength at Elevated Temperature, length direction,	N/mm^2 minimum	-	-	-	2.4.4.1
10. 耐电弧性 Arc Resistance	S minimum	60	60	105	2.5.1
11. 热应力冲击 Thermal Stress A. 未蚀刻 Unetched B. 蚀刻 Etched	10 sec at 288℃	Pass Visual Pass Visual	Pass Visual Pass Visual	Pass Pass	2.4.13.1
12. 电气强度 Electric Strength (Laminate & Prepreg as laminated)	kV/mm minimum	30	--	--	2.5.6.2
13. 燃烧性 Flammability (Laminate & Prepreg as laminated)	Rating	V-0	V-0	V-0	UL94
14. 玻璃态转化温度 Glass Transition Temperature	℃	--	≥135	139	2.4.24 2.4.25
15. 热分解温度 Decomposition Temperature	℃	--	≥310	354	TBD (5% wt loss)
16. 膨胀系数Z-Axis CTE A. Alpha 1 B. Alpha 2 C. 50 to 260 ℃	PPM/℃ PPM/℃ %	-- -- --	≤60 ≤300 ≤4.0	32 276 3.4	2.4.24
17. 耐热性(除去铜箔) Thermal Resistance (Copper removed) A.T260 B.T288 C.T300	Minutes Minutes Minutes	-- -- --	≥30 ≥5 AABUS	>60 30 --	2.4.24.1
18. 耐CAF性能 CAF Resistance	Pass/Fail	--	AABUS	Pass	2.6.25

*AABUS = 供需双方商定 As agreed upon between user and supplier.

● NY2140 产品使用指引 Process guideline

1. 搬运及储存要求 Handling and Storage：

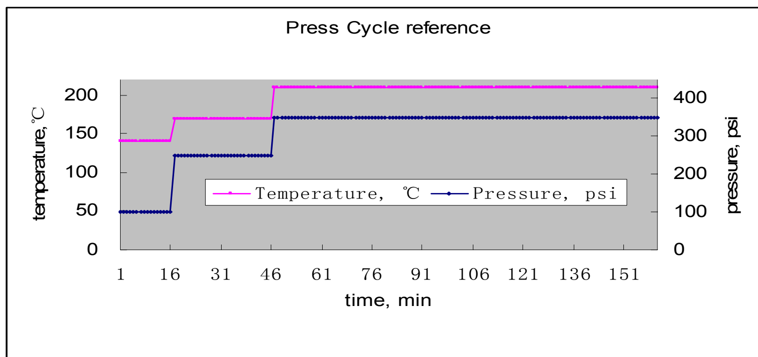
- 半固化片和基板必须水平平坦放置，轻拿轻放，避免折伤。
  Prepreg and Laminate should always be stored flat and horizontally. To avoid damage is recommended.
- 半固化片可以在干冷的环境下保存 3 个月（温度<23℃，相对湿度: <50%）
  Shelf life is 3 months when prepreg stored in a cool dry environment (Temp.: <23℃ R.H.: <50%).
- 基板可以在常温干燥的环境下保存 1 年。
  Shelf life is 1 year when laminate stored in a dry environment.

2. PCB 内层制作指引 PCB Inner Layer Process guideline：

- 基板在用于量产前，必须先做首板测试并得到合适制作参数（尺寸补偿系数等）。
  First around must be taken and find a suitable parameter (as dimension compensation, etc) before mass production.
- 内层线路板在棕化后必须烘烤 120 摄氏度 30 分钟以上，以去除水气。
  Inner layers should be baked for at least 30 min at 120℃ after black or brown oxides treatment

3. PCB 压合制作参考 Multi-layer Lamination Suggestion：

- 升温速率 Heating rate (80℃~ 140℃) / 高压设定 Highest Pressure：
  慢升温速率：1.0~2.0℃/min 高压设定：350~400 psi，快升温速率：2.0~3.0℃/min 高压设定：300~350 psi。
  Slow heating rate: 1.0~2.0℃/min, Pressure: 305~400 psi. Fast heating rate: 2.0~3.0℃/min, Pressure: 300~350 psi.
- 固化条件：压机每本中间层板温必须在 190 摄氏度以上保持 40 分钟，以保证树脂完全固化。
  Curing condition: Temperature of the inner boards, keep at least 40 minutes at 190℃ and above.
- 降温速率：中间层板温高于 140 摄氏度时，降温速率应在 2.0℃/min 以下，以确保热应力完全释放。
  Cooling rate: <2.0℃/min, when the temperature of the inner boards is over 140℃, in order to relax the thermal stress.
  (建议压合程式如下图 Recommended Press Cycle as below).



4. 其它制程 The other processes：

- 钻孔：钻孔参数必须依据钻咀质量、孔径、铜厚、板厚、层数、及叠板高度等条件设定，并且在量产前必须进行首板试验。
  Drilling parameters are mainly dependent on the drill bit quality, hole size, copper thickness, layer thickness, layer number and stack height, and etc. First around must be taken and find a suitable parameter before mass production.
- 烘烤：建议钻孔后及除胶渣前烘烤 150 摄氏度 2 小时以上，以去除释放机械应力。
  To bake after drilling 150°C/ 2 hours, in order to relax the mechanical stress.
- 除胶渣：一般情况下普通 Fr4 的除胶渣条件可能不适合此款材料，建议咨询药水供应商并作适当调整，如除胶时间、温度等。
  The typical parameters used to desmear Normal FR-4 may not produce optimum hole topography for NY2140, so you should consult with your chemical supplier to optimize your desmear condition, as desmear time or temperature, etc.
- 外型加工：一般情况下普通的冲模条件可能不适合此款材料，建议咨询设备供应商并作适当调整，如冲床重量、模具类型等。
  The typical punching parameters may not produce optimum hole topography for NY2140, so you should consult with your equipment supplier to optimize your punching condition, as punching power or die type, etc.

--- 以上指引，仅供参考。**The above process guideline is for general reference only.** ---