THP-100 Series
熱硬化型穴埋めインキ
Thermal Curable Permanent Hole-Plugging Materials

特徴　Features

THP-100DX7

- 高 Tg ／低 CTE　High Tg/Low CTE
- 高信頼性（ボイド／クラック・フリー）High reliability
- 低硬化収縮　Reduced shrinkage after curing
- 環境対応／ハロゲンフリー　Halogen free

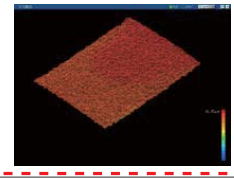
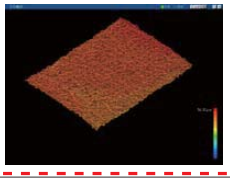
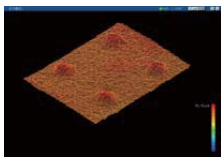
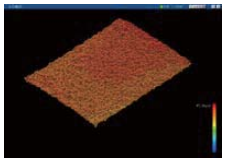
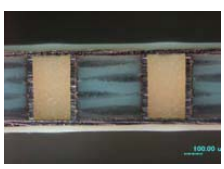
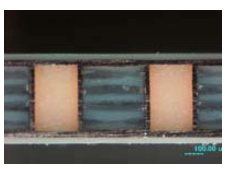
THP-100Z1

- 短時間硬化（150℃30min 硬化）Short curing time
- 高耐熱性（288℃／10sec／5cycle クラックなし）High thermal resistance
- 高アスペクト比基板に使用可能 Available for high aspect ratio board
- 環境対応／ハロゲンフリー　Halogen free

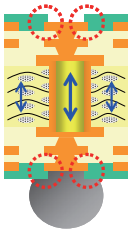
特性　Properties

	従来品 Conventional product	THP-100DX7	THP-100Z1	Test Condition
主な用途 Appliation	PKG	PKG	HDI	
ガラス転移温度(℃) Tg	150-160	165-175	155-165	TMA(Pulling mode) X-Y 方向 X-Y direction
線膨張係数(ppm) CTE(α1/α2)	30-35／100-110	18-23／55-65	43-48/110-120	
ヤング率(Gpa) Young's modulus	4.5-5.0	7.2-8.2	5.0-5.5	引っ張り法　Pulling mode（室温　room temperature）
破断点強度(MPa) Tensile strength	50-55	80-90	35-40	
伸び率(%) Elongation	2.0-2.5	2.0-2.5	1.5-2.0	
吸水率(%) Water absorption	＜1.0	＜1.0	＜1.5	D-24/23,塗膜厚み100μmt
ピール強度(N/m) Peel strength	＞6.0	＞5.0	＞6.0	引っ張り方向90° Vertical direction at 90°

THP-100DX7

	従来品 Conventional product	THP-100DX7
Before reflow		
After L2a reflow		
		

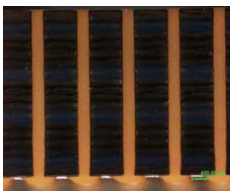
◇ Core
(T=0.4mmPTH=0.25mm)
◇ BU Layer
◇ Treatment
L2a（C-120/60/60）+
Reflow（270℃/5cycles）
※基板表面実温度



→Mismatch of thermal expansion enhances stress on outer layers possibly to create cracks of BU and SR (Red circled areas)

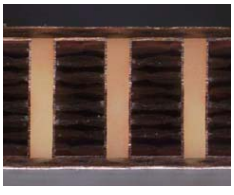
THP-100Z1

高アスペクト比基板
穴埋め硬化後
High aspect ratio board



(T=3.5mmPTH=0.25mm)

はんだ耐熱後
After solder heat
(288℃/10sec/5cycles)



TAIYO INK MFG. CO., LTD.