



# **PROCESSING GUIDELINES**

**Laminate: S2126**



This product process guideline uses IPC-4101 Standard as a reference, and Shengyi make some changes according to the product characteristics of the actual situation as to making it more suitable for the Shengyi S2126 product use.

## **1. Storage condition**

### **1.1 Laminate**

#### **1.1.1 Storage condition**

- Pack with original forms on the platform or on the appropriate frame, avoiding stress, prevent sheet deformation caused by inappropriate storage which may impact the subsequent PCB processes.

#### **1.1.2 Storage environment**

- Sheets should be stored in ventilated, dry, at room temperature under environment control, avoiding direct sunlight, rain and avoid erosion of corrosive gas (stored environment directly affect the quality of material).
- For double-sided copper clad laminates (cores), to minimize shifting as to avoid scratching the surface of the product, with a suitable environment and condition for storage, the shelf life can be up to two years.
- For single-sided copper clad laminates, with a suitable environment and condition for storage, the shelf life can be up to one year.

#### **1.1.3 Operation manual**

- Wear clean gloves and carefully operate the cores. Copper foil collisions, sliding will cause damage of the cores. Bare hands action will cause contamination to copper foil surface. These defects are likely to cause adverse effects.

## **2. PWB Processing**

### **2.1 Panel cutting**

- Sawing (preferred) and shearing method is recommended. Be careful of potential edge cracks when using roller cutter or caused by improper gap or cutter blade abrasion.

### **2.2 Pre-baking**

- Because CEM-3 core material uses glass fiber paper as the reinforced material, the dimensional stability of CEM-3 is worse than that of FR-4. In PCB processing, baking after panel cutting can eliminate the stress and lower the dimensional shrinkage rate of the CEM-3 materials.
- Material pre-baking depends on the actual need. If materials are baked after cutting, it's recommended to rinse cutting panels first, which is able to remove resin powder brought by cutting and avoid etching problem.



- Baking condition: 150°C/3-5h, be sure to avoid materials directly contact with heater. Baking for 1.0mm thickness laminate, the stack up quantity does not exceed 30 panels; and for 1.6mm thickness laminate, the stack up quantity does not exceed 20 panels.

### **2.3 Film compensation**

- CEM-3 materials have large shrinkage rate because of the structure. Although pre-baking process will lower the shrinkage rate, in the following PCB process, materials will still occur different degrees of shrinkage or expansion and therefore will need the film compensation. Film compensation factor are determined by actual production experience or FA production experience.

### **2.4 Drilling**

- For 1.6mm thickness laminate, the suggested drilling parameters are: 3-4 panels per stack, drill speed 60000-70000r/min, feed speed 60-70μm/r; we also suggest customers to find the suitable drilling parameters according to their trial run experience.

### **2.5 Solder mask**

- Be careful of panel distortion or warpage due to improper stack-up at pose baking process.
- S2126 is high CTI material and contains inorganic fillers, the alkali resistance is not as good as normal materials, and so it is not recommended for solder mask rework process.

### **2.6 HAL**

- Suitable for non-lead free HAL process.

### **2.7 Punching**

- If punching process is chosen, pay attention to the hole edge and panel edge quality where it will easily occur white wicking phenomenon.

### **2.8 PWB Packaging**

- PWB baking before packaging is suggested, baking condition: 125°C/3-5h, to prevent moisture effect on the heat resistance of base material.
- For a long time storage, it's advised to wrap by aluminum pack.

## **3. PWB Soldering**

### **3.1 Shelf life of PWB**

- 3 months with packaging protection.
- Bake at 125°C/3~5h before assembly is recommended, especially when stored more than 3 months.

### **3.1 Reflow**

- Suitable for standard non-lead free reflow process.

### **3.3 Manual soldering**



- For separated or edge connected pad.
- Manual soldering temperature should range 350-380°C (Use temperature control soldering iron).
- Time for single point soldering: within 3 seconds.

This process guide is for reference only! Should you have any questions, please feel free to contact us. ShengYi will support you with prompt and effective service.