

Storage and Use Guidelines

GENERAL

Please read and follow these storage and use guidelines. Improper storage or use will invalidate any guarantees and regardless of any other agreement, contract, terms and conditions or likewise any loss or damage to other components or parts is the responsibility of the user.

STORAGE OF PRINTED CIRCUIT BOARDS

The materials used for manufacturing PCBs are hygroscopic - i.e. they will absorb moisture from the environment. Any absorbed moisture will vaporize (steam) rapidly during the solder process and may lead to delamination.

Both the conditions and the duration of storage have a direct influence on the absorption of moisture. Preferred conditions of storage: **temperature 20 - 25 °C, relative humidity: <50 %**

STORAGE TIMES

Storage times from production for finished surfaces to meet soldering requirements:

- HAL (Hot Air Levelling) = 12 months
- Nickel / Gold (ENIG) = 9 months
- Bondable Gold = 9 months
- Nickel / Palladium / Gold = 2 months
- Electrolytic Gold = 12 months +
- Immersion Silver = 12 months
- Immersion Tin = 9 months
- OSP = 12 months

The production date can be found on the sealed airtight package.

HANDLING

The PCBs should be stored in the sealed airtight packages until assembly takes place.

VPS always recommends a pre-dry step according to IPC-1601 before assembly. Note that pre-dry will **reduce the solder ability** of the PCBs.

Once the package is opened, maintain the following conditions:

1. Relative humidity <50%, temperature 20-25 °C.
2. Fingerprints must be avoided (wear gloves).
3. Do not expose the PCBs to a corrosive gas or liquid environment.
4. Do not expose the PCBs to direct sun light.
- 5. VPS always recommends a pre-dry step according to IPC-1601 before assembly**
6. Assembly must take place within 1 week and preferably immediately.

PRE-DRYING**Pre-drying according to IPC-1601;**

Surface Finish	Temperature	Time	Comments
Tin	105-125°C	4-6 Hours	Baking may reduce solder ability. See IPC 1601 3.4.1.5
Silver	105-125°C	4-6 Hours	Silver may tarnish. See IPC 1601 3.4.1.4
Nickel/Gold	105-125°C	4-6 Hours	Usually no issue with extended bake on Nickel/Gold finish. (See 3.4.1.2)
Organic coating	105°C	1 Hours	See IPC 1601 3.4.1.1
HASL/HAL	105-125°C	4-6 Hours	Final surface thickness below 0.77 μ [30 μ in] may turn into pure intermetallics and render the PCB unsolderable

If the PCBs are assembled beyond the recommended storage time, or are stored other than in the recommended way, then VPS will not accept any liability for assembly or post-assembly problems whatsoever.

USE OF PRINTED CIRCUIT BOARDS**MAXIMUM SOLDERING TEMPERATURE**

Do not expose the PCB to temperatures above 260°C.

It is not recommended to expose the PCB to this maximum temperature for more than 30 seconds.

By hot air reflow soldering:

- Maximum air temperature = 250°C (523K / 482°F)
- Maximum PCB temperature = 260°C (533K / 500°F)

By IR reflow soldering and IR pre-heat for wave soldering:

- Maximum PCB temperature = 260°C (533K / 500°F)
- most fluxes will become active at 100-110°C.

The contact time with the wave should be three to four seconds with a temperature of 250°C (Pb) or 260°C (Pb free).

Overheating, repeated thermal shocks and sustained high temperatures can all cause (micro-) cracks in via's and plated through holes, or delamination of the PCB.

Always use a minimum of one board from the batch to control the maximum temperature – as described below - before releasing the soldering program and soldering the entire batch.

To check the temperature parameters and to ensure that PCBs are not exposed to excessive heat loads VPS advises attachment of thermocouples to a pre-run PCB and to monitor the PCB temperature during the soldering process.

If it is not possible to attach thermocouples, then we advise the use of temperature stickers (for example: www.reatec.ch) to monitor the PCB temperature during the soldering process.

TECHNICAL SPECIFICATIONS OF USED BAGS

Vacuum sealed, ESD shielded moisture barrier bags.

Thickness	106µ
Surface resistance	<10 ¹¹ Ω
Decay Time	1000V – 100V < 0,02s
MVTR	≤ 0,0006g / 100 in□ / 24h
Conform to	EIA-583,EIA-541,EIA-625, IPC / JEDEC J-STD033, MIL-PRF-81705 Type1 Class 1 IEC 61340-5-1

COMMENTS PROCESS**GENERAL**

Unless specifically agreed otherwise all of our products are sold under our terms and conditions (T&Cs) of supply. If you would like to see a copy of these T&Cs we will send them to you by post or e-mail, you can also find them on our website. Opening the vacuum packaging surrounding the product implies acceptance of this statement.

CONTROL

Please control the quantity delivered and check the product visually for defects before taking further process steps. Products which have defects, errors or faults which are obvious to the naked eye but which nevertheless have been used in manufacturing processes will invalidate any guarantees and regardless of any other agreement, contract, terms and conditions or likewise any loss or damage to other components or parts is the responsibility of the user.

STORAGE AND USE

Please read and follow the storage and use guidelines. Improper storage or use will invalidate any guarantees and regardless of any other agreement, contract, terms and conditions or likewise any loss or damage to other components or parts is the responsibility of the user.

PRINCIPLES

We aim to deliver a quality product at the required time for an agreed price. To help ensure quality in our work and products we use the guidelines of ISO-9001 for our processes and of IPC-A-600 for our product.

HOW TO REGISTER A COMPLAINT

If you have a comment or complaint about the product then please register this as soon as possible or in any event within 10 days of receipt of goods by letter to the Quality Manager, or by e-mail to QA@v-ps.com

For urgent issues please also telephone your Account Manager.

NEXT STEPS

- We will contact you as soon as possible to arrange an intermediate solution
 - this may be replacement, use of the product without prejudice, or another workaround.
- We will undertake an investigation (as necessary).
 - In order to undertake the investigation we will require at least one sample returned to us. If we cannot obtain this sample then the complaint process will end.
- We will inform you of the likely duration and method of the investigation
 - This may include third party expertise.
- We will send you a report detailing the complaint, the investigation, the conclusions and (if applicable) the restitution.
- Within 10 working days of receipt of the report you may give feedback on the contents and conclusions.
- We will end the complaint process when:
 - 10 working days without feedback on the report have elapsed
 - You are satisfied with the conclusions and (if applicable) the restitution
 - You inform us that the complaint is withdrawn
 - Either party begins legal action

REFUNDS/REPLACEMENTS

Refunds or replacement will be made via the issue of a credit note. For replacements a new invoice will be issued after crediting the original order.

GUARANTEE

Once in use, we guarantee our product for 90 days against bad workmanship and poor materials.

All of the above does not detract from any statutory rights you may have.