

# Solder paste NP303-ZYA-1

## Product description

GENMA SMD solder paste – our NP303-ZYA-1 solder paste was developed for printing finest structures. It convinces with its outstanding printability, highly precise contours, long open time, and consistent adhesiveness in the pick-and-place process. Its extremely good wetting properties, also on difficult surfaces, produce perfect soldering joints on BGAs. Hardly any voids in the solder connections. Cleaning after soldering is not necessary. The solder paste can be soldered under air or nitrogen reflow. Please note: The follow-up product NP303-COSMO-LH-T5 has an improved wetting properties and the stability and printability was improved as well.

## Technical properties

|  | Specific value   | Testing method                       |
|--|--|--------------------------------------|
| <b>Alloy</b>   | Sn 96,5 / Ag 3,0 / Cu 0,5 / SAC305                               |                                      |
| <b>Melting temperature range</b>                       | 217 - 221  | IEC61189-11                          |
| <b>Powder size (µm)</b>                                | 10 - 25, type 5  | IPC-TM-650-2.2.14.2                  |
| <b>Viscosity (Pa · s)</b>                              | 220 ± 20   | IPC-TM-650-2.4.34.3                  |
| <b>Flux content (wt %)</b>                             | 12 ± 0,3   | IPC-TM-650-2.3.34.1                  |
| <b>Flux type</b>                                       | ROL0, no clean   | IPC J-STD-004B                       |
| <b>Printing pitch (mm)</b>                             | 0,3  |                                      |
| <b>Halide content (wt %)</b>                           | 0,02 ± 0,01  | IPC-TM-650-2.3.35                    |
| <b>Slump in print (mm)</b>                             | ≤ 0,2  | IPC-TM-650-2.4.35                    |
| <b>Slump in heat (mm)</b>                              | 0,2 - 0,3  | IPC-TM-650-2.4.35<br>(150°C / 60sec) |
| <b>Insulation resistance (Ω)</b>                       | ≥ 1 x 10 <sup>11</sup> ( 40°C 90 % r. L )                        | IPC-TM-650-2.6.3.3                   |
| <b>Insulation resistance (Ω)</b>                       | ≥ 5 x 10 <sup>8</sup> ( 85°C 85 % r. L )                         | IPC-TM-650-2.6.3.3                   |
| <b>Migration test</b>                                  | No migration   | IPC-TM-650-2.6.14.1                  |
| <b>Copper mirror test</b>                              | No corrosion   | IPC-TM-650-2.3.32                    |
| <b>Packaging</b>                                       | Jar (0,5 kg)<br>Semco cartridge (0,65 kg, 1,2 kg)                |                                      |
| <b>Shelf life</b>                                      | 6 month at 0- 10°C   |                                      |
| <b>Transport</b>                                       | Keep cool  |                                      |
| <b>Tempering the solder paste</b>                      | Set to room temperature before opening<br>to avoid condensation. |                                      |
| <b>Recommended printing speed (mm/s)</b>               | 20 - 50  |                                      |
| <b>Recommended temperature during print ( °C )</b>     | 25 ± 3   |                                      |
| <b>Recommended relative humidity in % during print</b> | 50 ± 20  |                                      |

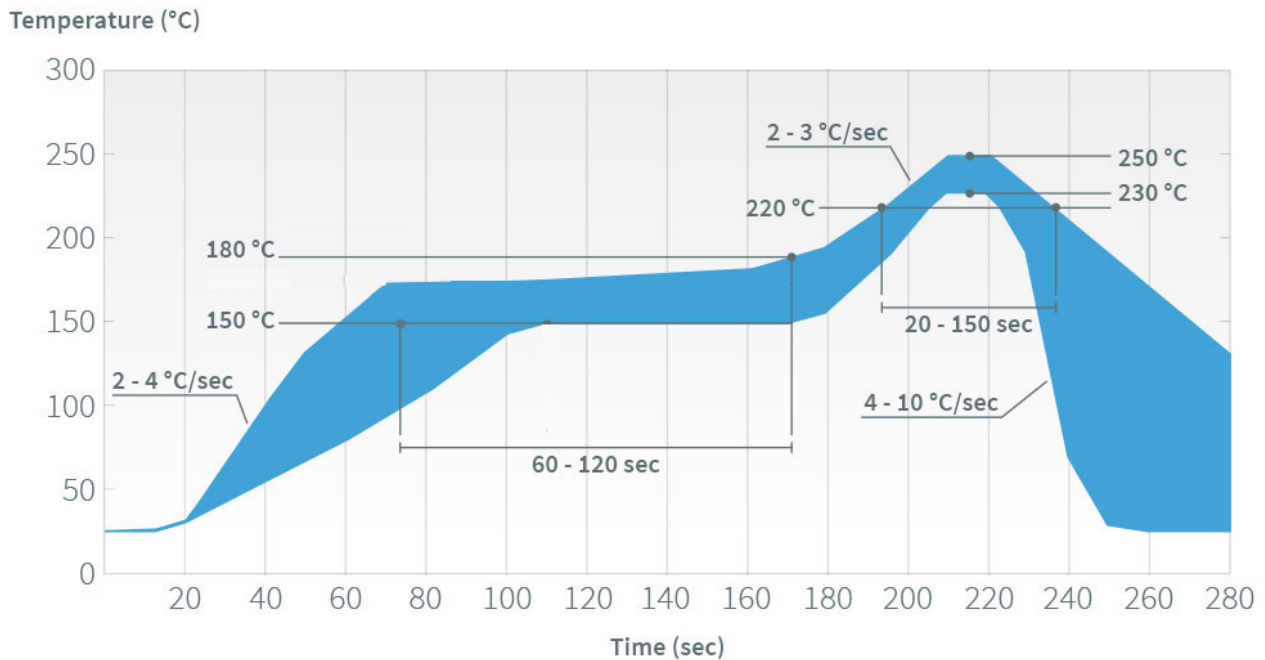
## Compliance

Conform with RoHS-Regulation 2011/65/EU and 2015/863/EU

Contains no substances more than threshold (0,1%) according to REACH legislation EG Nr. 1907/2006 (SVHC list 1 - 26.04.2024)

## Recommended Reflow Profile

---



### Preheating

---

The temperature increase should be 2°C to 4°C/sec until the preheating zone is reached. If the temperature rises too quickly this may cause a running of the solder paste.

To achieve a temperature spread ( $\Delta t$ ) on the circuit board that is as limited as possible, the temperature in the preheating zone should be between 150 and 180°C and the preheating time should be 60 to 120 seconds. If the temperature is too low or the preheating time too short, the temperature spread ( $\Delta t$ ) on the circuit board will be too high. If the temperature is too high and the preheating time too long the activators will get lost which may lead to poor melting of the solder paste.

### Reflow peak

---

We recommend keeping the temperature at 220°C for 20 to 150 seconds, if possible. If this is impossible, a temperature of up to 250°C can be maintained for a shorter period of time. It must be ensured, however, that the components are suited for the higher temperature.

### Cooling down

---

The cooling rate should be between 4 and 10°C/sec. If the cooling rate is too low components may be displaced or come up and reduce the strength of the solder connections. If the cooling rate is too high, however, components can be damaged through thermal shock.