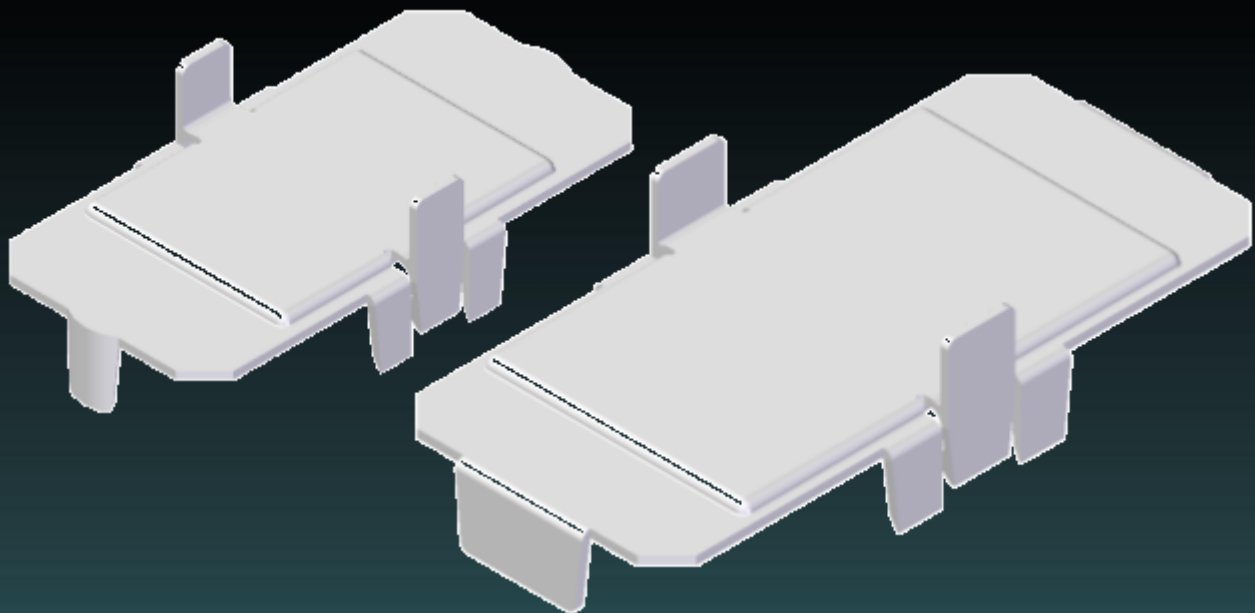




Vincotech

Handling Instructions

for *ProCap*



*This document is valid for all type of ProCaps:
flow0 and flow1*

Date: 26.07.2018

Revision:

Created by: J. Szabó

Rev. 01



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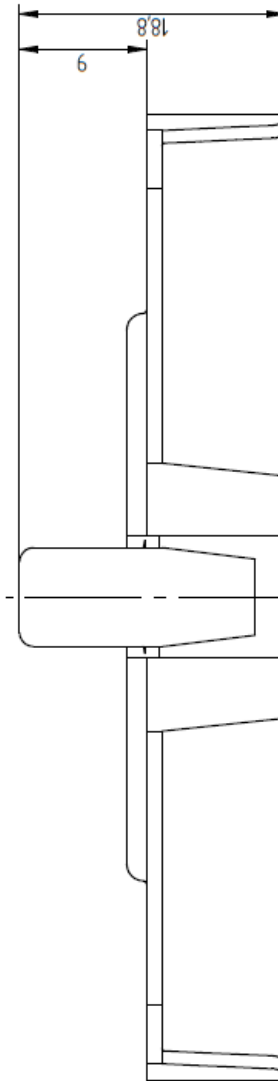
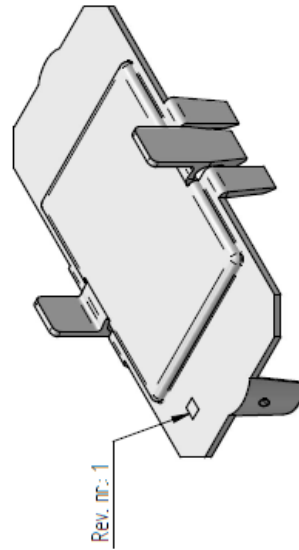
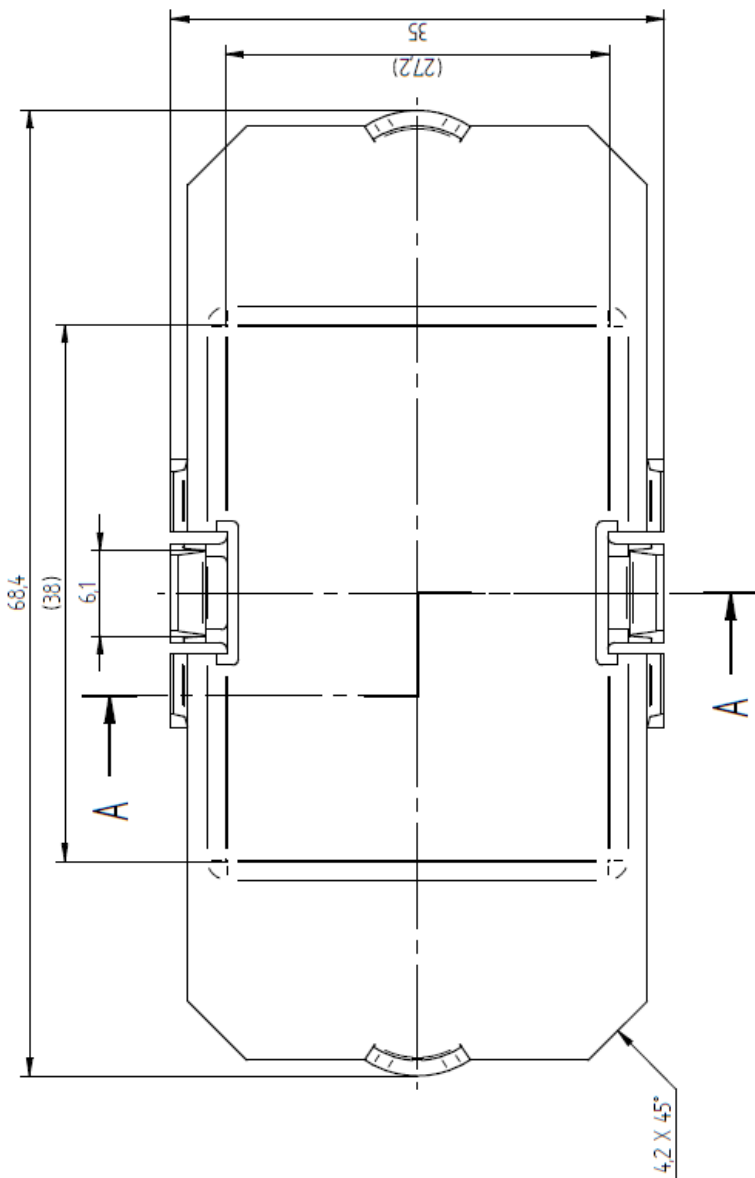
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Revision History

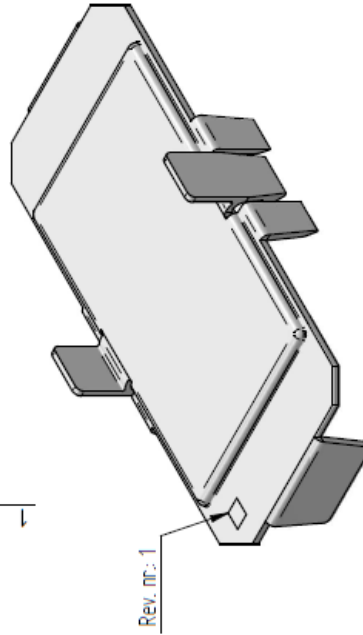
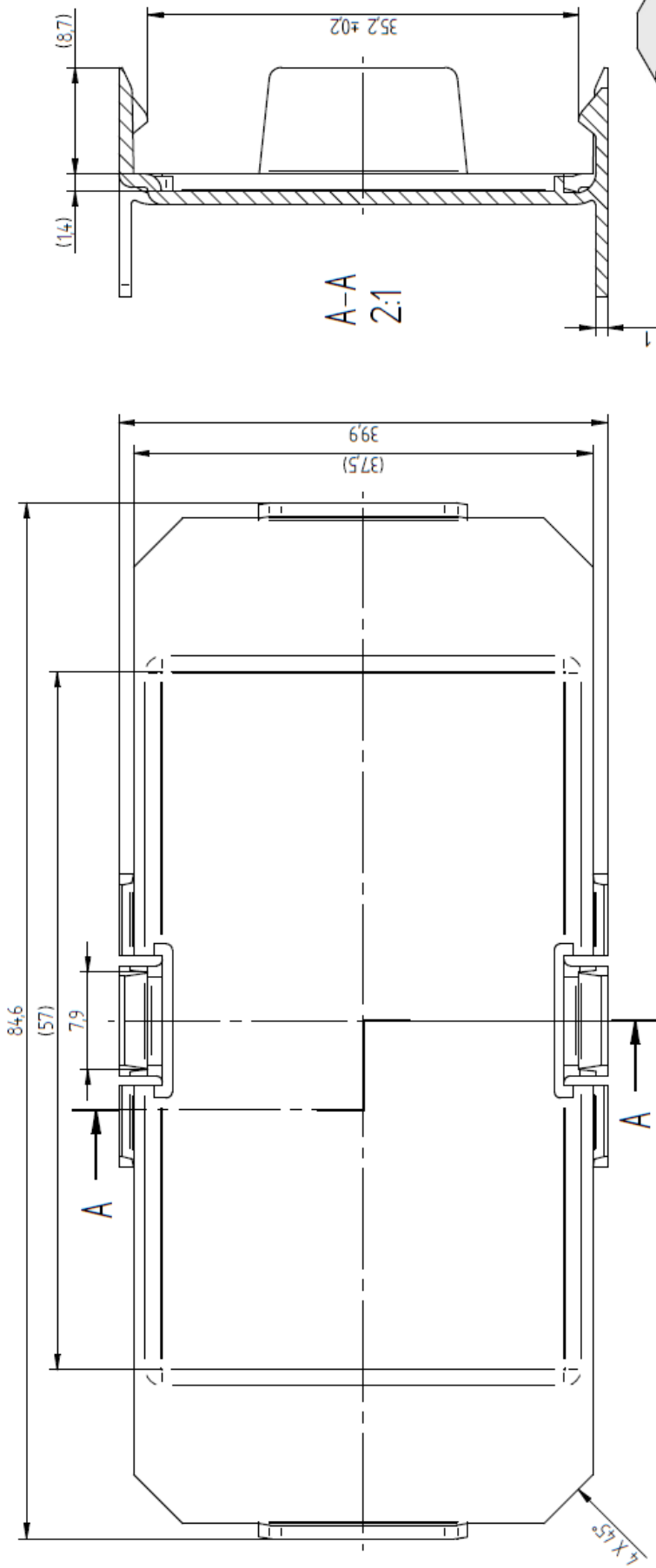
Date	Revision Level	Description	Page Number(s)
26.02.2018	01	New document	9





1. Material: PBT Pocan B4235 000000, 30% glass fibres
Color: RAL-7035, UL94 V-0 and 5-VA
2. Parts may be reused several times
3. Maximum useable temperature:
short term < 30min 205°C
long term < 125°C

01	20.06.2018	Initial release	Géczy M.	Gyétrai T.	Designed / Approved	Protection Cap	View scale 2:1
General tolerances ISO 2768 - m, K Linear dimensions: $x < 0.5 \pm 0.05$ $0.5 \leq x < 1.0$ $1.0 \leq x < 2.0$ $2.0 \leq x < 5.0$ $5.0 \leq x < 10.0$ $10.0 \leq x < 25.0$ $25.0 \leq x < 50.0$ $50.0 \leq x < 100.0$ $100.0 \leq x < 200.0$ $200.0 \leq x < 500.0$ $500.0 \leq x < 1000.0$ Chamfers, radii: $x < 0.3 \pm 0.05$ $0.3 \leq x < 0.5$ $0.5 \leq x < 1.0$ $1.0 \leq x < 2.0$ $2.0 \leq x < 5.0$ $5.0 \leq x < 10.0$ $10.0 \leq x < 25.0$ $25.0 \leq x < 50.0$ $50.0 \leq x < 100.0$ $100.0 \leq x < 200.0$ $200.0 \leq x < 500.0$ $500.0 \leq x < 1000.0$						Page 1/1	
References Inspectional dim: Revision number (Rev.): * IP Development Vincotech Drawing alteration in revision:						FLOW0-PROCAP-01.1-L	



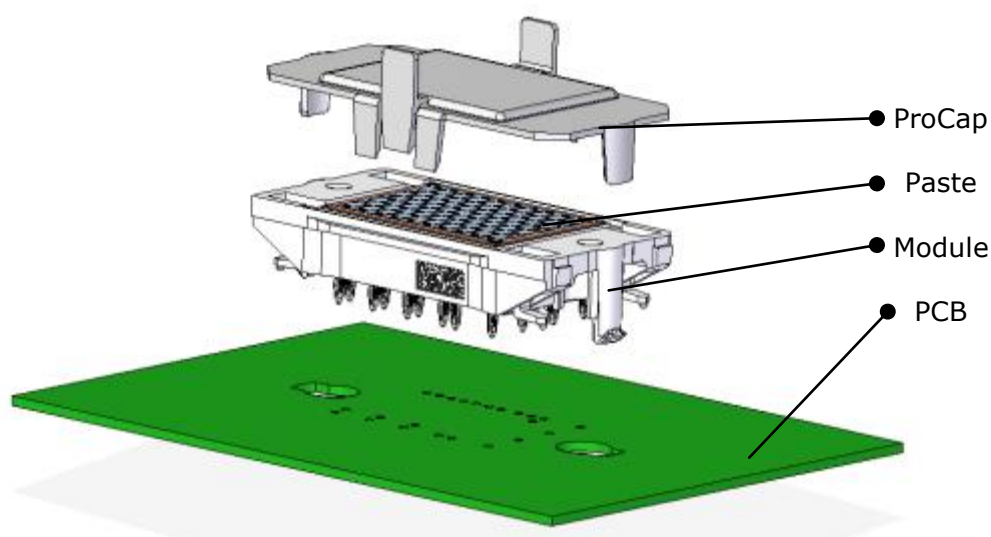
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View scale	2:1	Page	1/1
Protection Cap	FLOW1-PROCAP-01-L Drawing alteration in revision: 0		
Rev.	01	Date	29.06.2018
Initial release	Géczy M. Gyevai T. Designed / Approved		
Alteration	Ps A4		
General tolerances ISO 2768 - m, K	k<0.5 ±0.05 0.5≤k<0.1 0.5≤k<0.12 0.5≤k<0.15 ±0.3 0.20±0.05		
Linear dimensions	x<0.5 ±0.05 0.5≤x<0.15 ±0.1 0.5≤x<0.12 3≤x<6 ±0.5 6<x≤1		
Chamfers, radii	Inspectional dim. □ Revision number (Rev.): *		
References	IP Development		



2 General assembly instructions

The ProCaps (short for Protecting Cap) are available for *flow0* and *flow1* type power modules. The parts were designed to protect the pre-applied thermal interface material of *flow* modules during and after PCB assembly. The caps may be clipped-on the modules by hand; there is no need for any tooling. The following exploded view (1. Figure) shows the main components of the assembly.

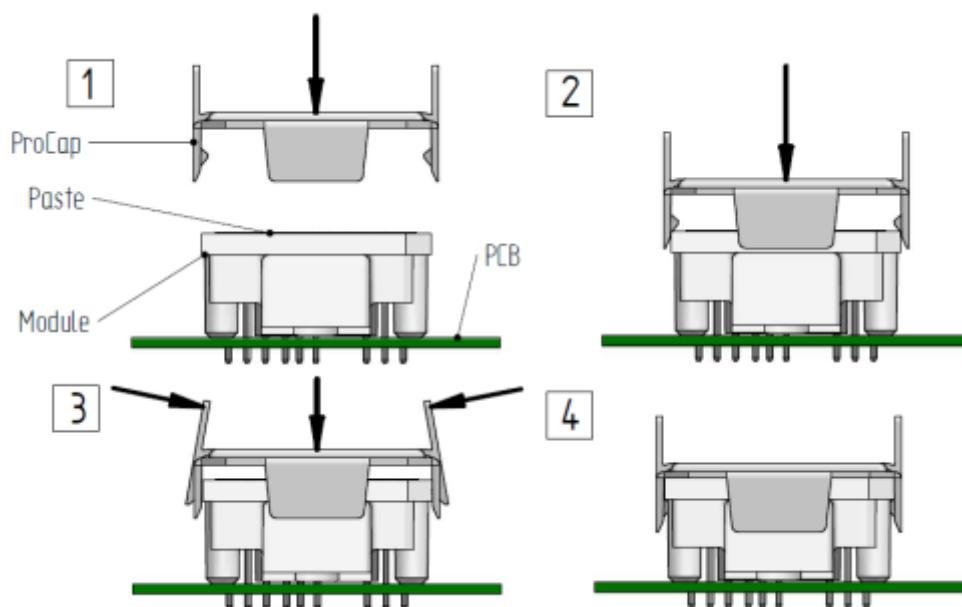


1. Figure: ProCap, module, paste and PCB

The ProCap is applicable for both solder pin and Press-fit pin modules. Depending on which process is used to connect the PCB to the module we can separate the time of the installation into two cases. In case of solder pins the ProCap may be assembled onto the module before soldering. The material of the ProCaps can withstand the temperature of the wave soldering oven without warpage or damage.

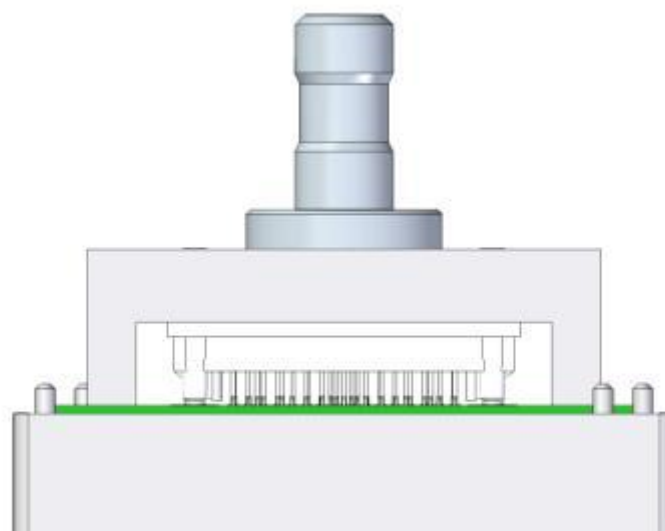
The typical (recommended) assembly sequence for modules with solder pins (2. Figure):

1. Position the ProCap over the module (It is optional if before or after the PCB-mounting)
2. Position the guiding flaps embracing the power module, without touching the pattern of the thermal conductive paste
3. Outspread the cantilever snap-fit by pushing its prolonged tongues towards each other and push the ProCap down, this way fixing the cap on the module.
4. Ready for further assembly steps.



2. Figure: Assembling the ProCap and the module (*flow1* solder pin)

In case of Press-fit technology the ProCap may only be assembled after the press-in process, as there is no way to press the module in the PCB with the ProCap assembled. 3. Figure shows the module during press-in. It can be seen, that there is no place for the ProCap.

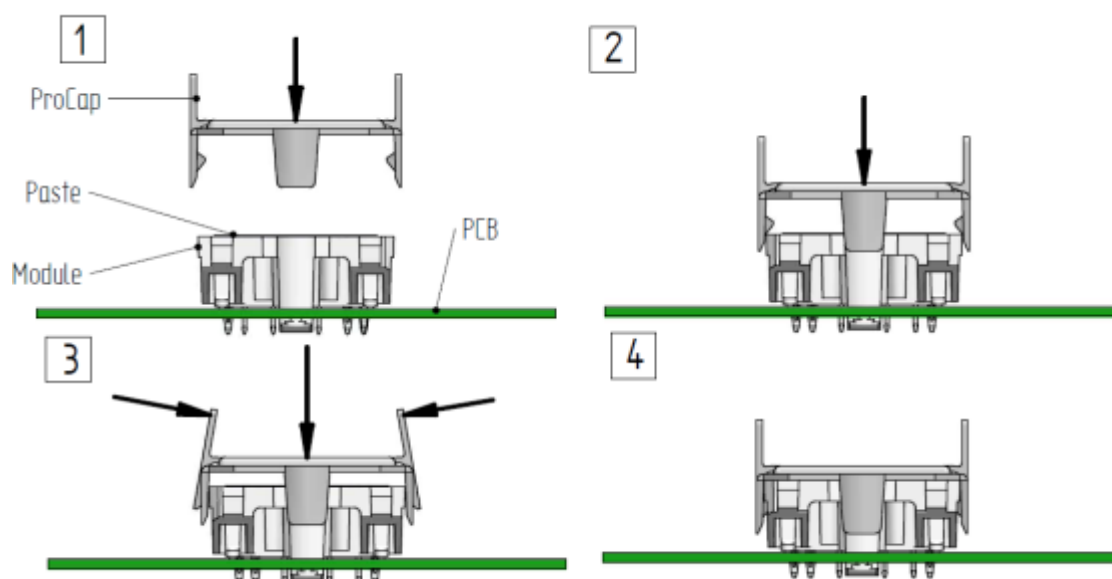


3. Figure: Press-in tools closed, module is pressed in



The typical assembly sequence for modules with Press-fit pins (4. Figure):

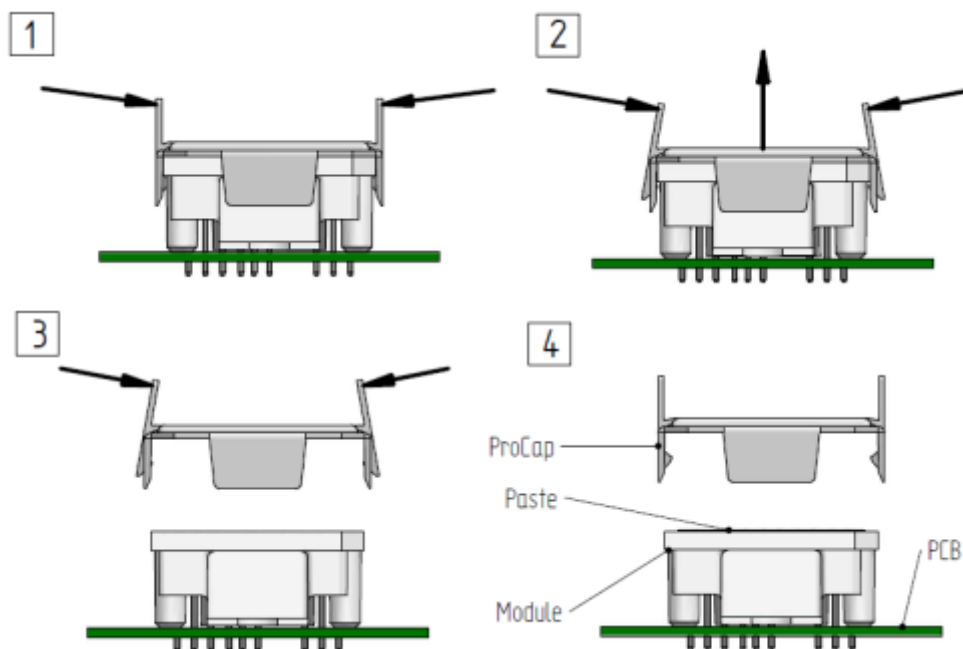
1. Position the ProCap over the module (PCB-mounting must already be done)
2. Position the guiding flaps embracing the power module, without touching the pattern of the thermal conductive paste
3. Outspread the cantilever snap-fit by pushing its prolonged tongues towards each other and push the ProCap down, this way fixing the cap on the module.
4. Ready for further assembly steps.



4. Figure: Assembling of the ProCap and the module (*flow0* Press-fit pin)

When the ProCap's role is fulfilled and it is needed to be disconnected from the module, then the typical (recommended) disassembly sequence is the following (5. Figure):

1. Push the prolonged tongues towards each other until the cantilever snap-fits outspread enough to not touch the side of the module's housing
2. Slowly pull off the cap from the module pushing the tongues all the way down, paying attention not to harm the pattern of the thermal paste
3. If the cantilever snap-fits are past the side of the module, the tongues' pushing can be stopped
4. Disassembling is ready



5. Figure: Disassembling of the ProCap and the module

3 Environmental conditions

Flammability classification of the plastic material for *ProCaps* are V-0 and 5-VA (self-extinguishing, no dripping of flaming particles) according to UL 94, IEC 60695-11-10 and IEC 60695-11-20 test methods.

Modules are sensitive to electrostatic discharge which can damage or destroy sensitive semiconductors. All modules are ESD protected in the shipment box by semi conductive plastic trays. During the handling and assembly of the modules it is required to wear a conductive grounded wrist band and ensure a conductive grounded working place.

Please take into consideration the following standards for handling electrostatic-sensitive devices: IEC 61340-5-1, ANSI/ESD S20.20

4 Disclaimer

The information and recommendations in this document are based on standards and common engineering practices. Customer specific applications and specifications may require additional processes and tests that may supersede those recommended in this document.