SWTEST

PROBE TODAY, FOR TOMORROW

2023 CONFERENCE

Burn-in test system controlled in REAL TEMPERATURE

SEMICS

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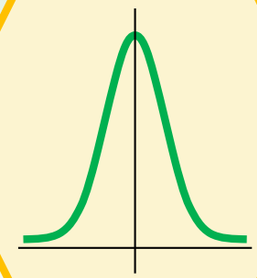
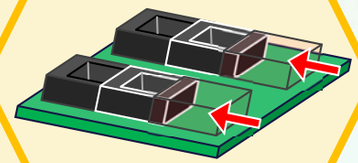
RND2, SEMICS Inc.

June 5 - 7, 2023

We are targeting for the new burn-in system.

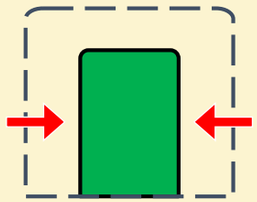
REAL(Intuitive) **Temperature Control**





2x Higher Density Board

Time-saving Setup & Maintenance

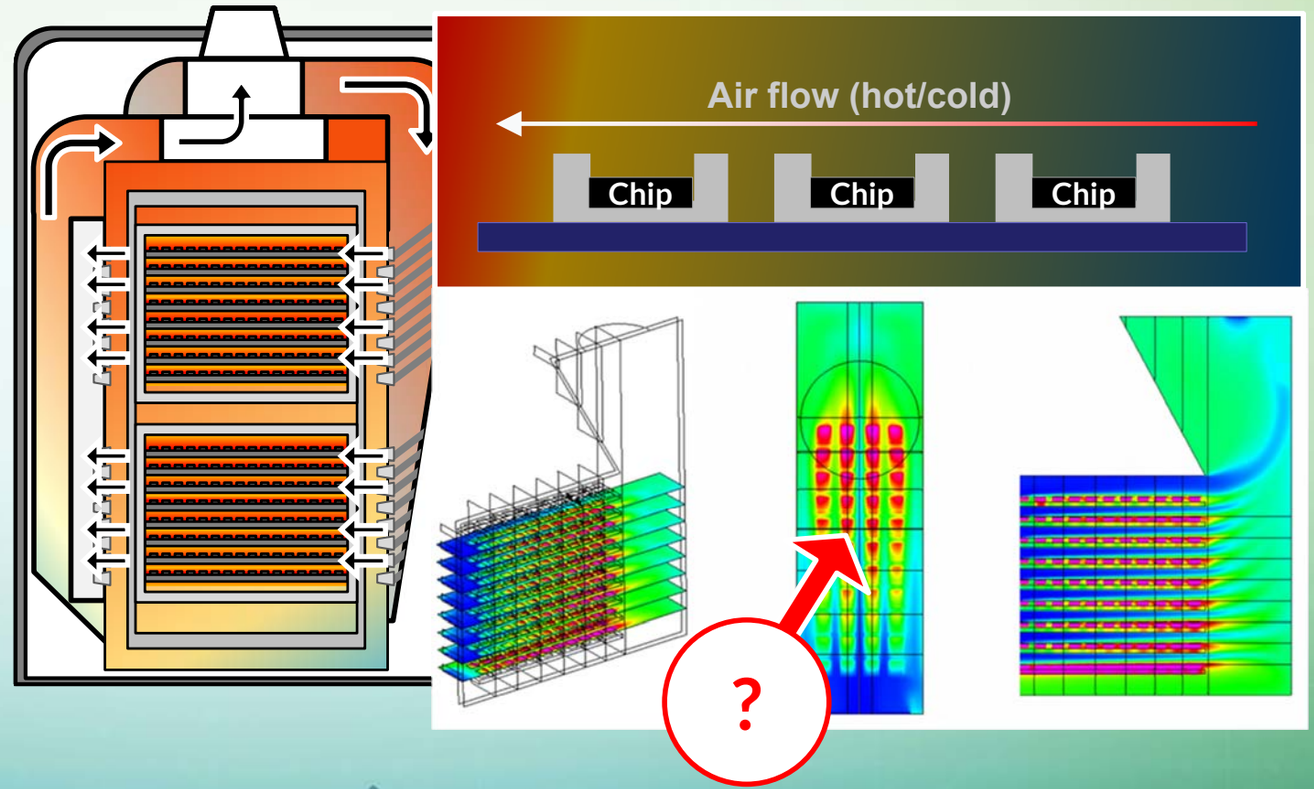


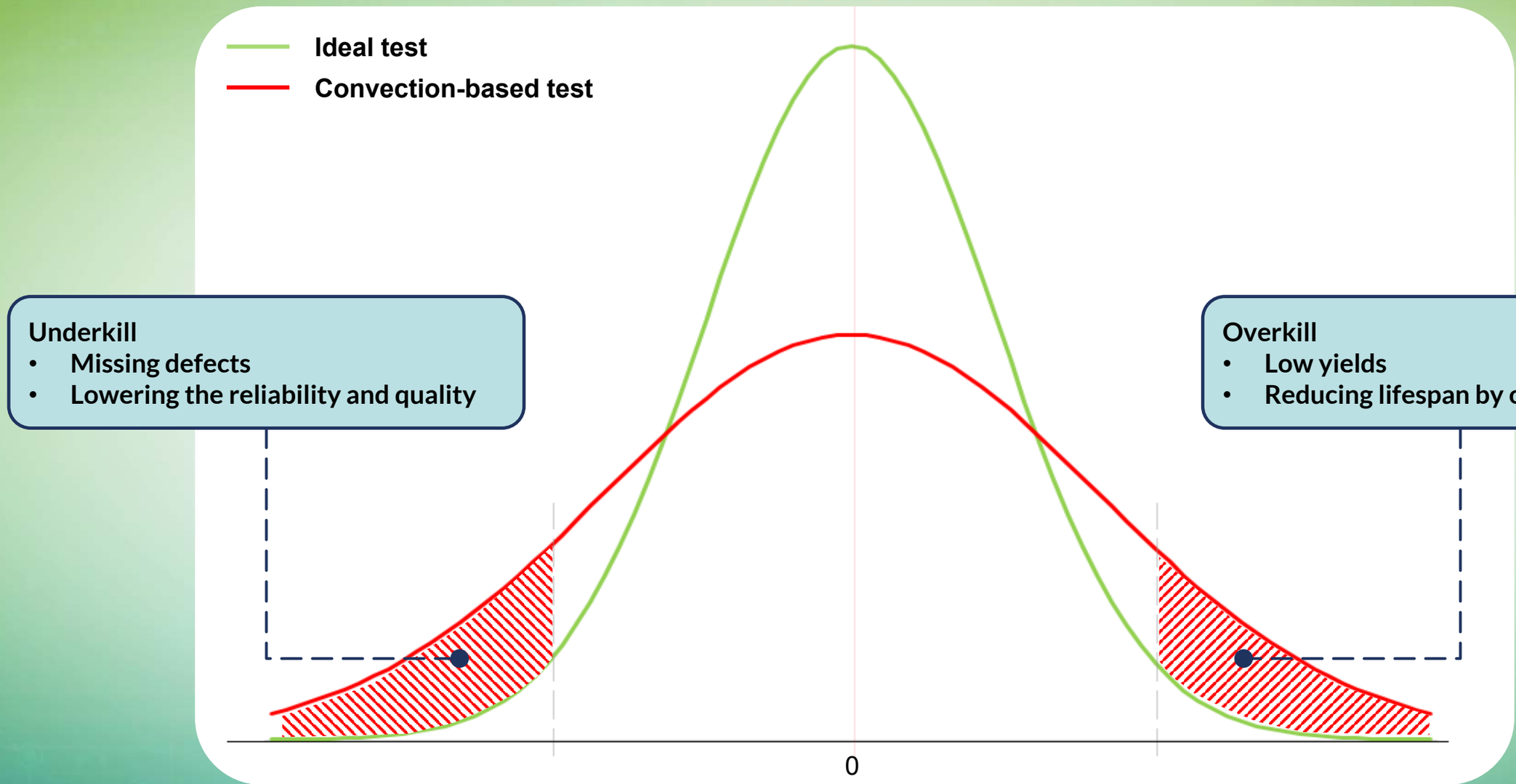
2x Efficient Footprint

What's going on... ; Temperature and setup

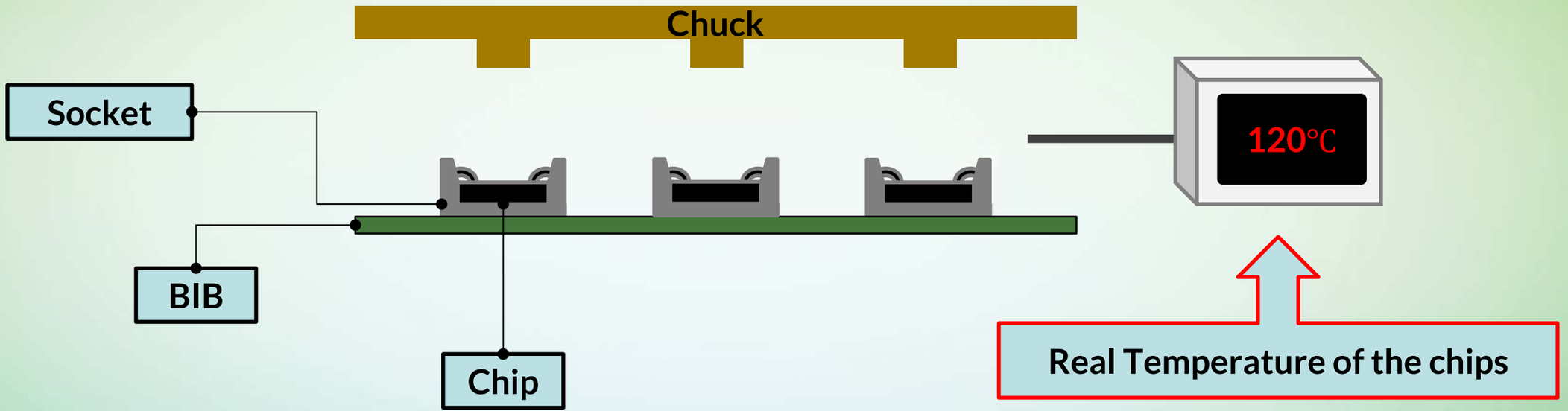
Endemic diseases breaking uniformity in your chamber

1. Difficult setting flows
2. Gradual heat exchange
3. Different temp' caused by different heat sources

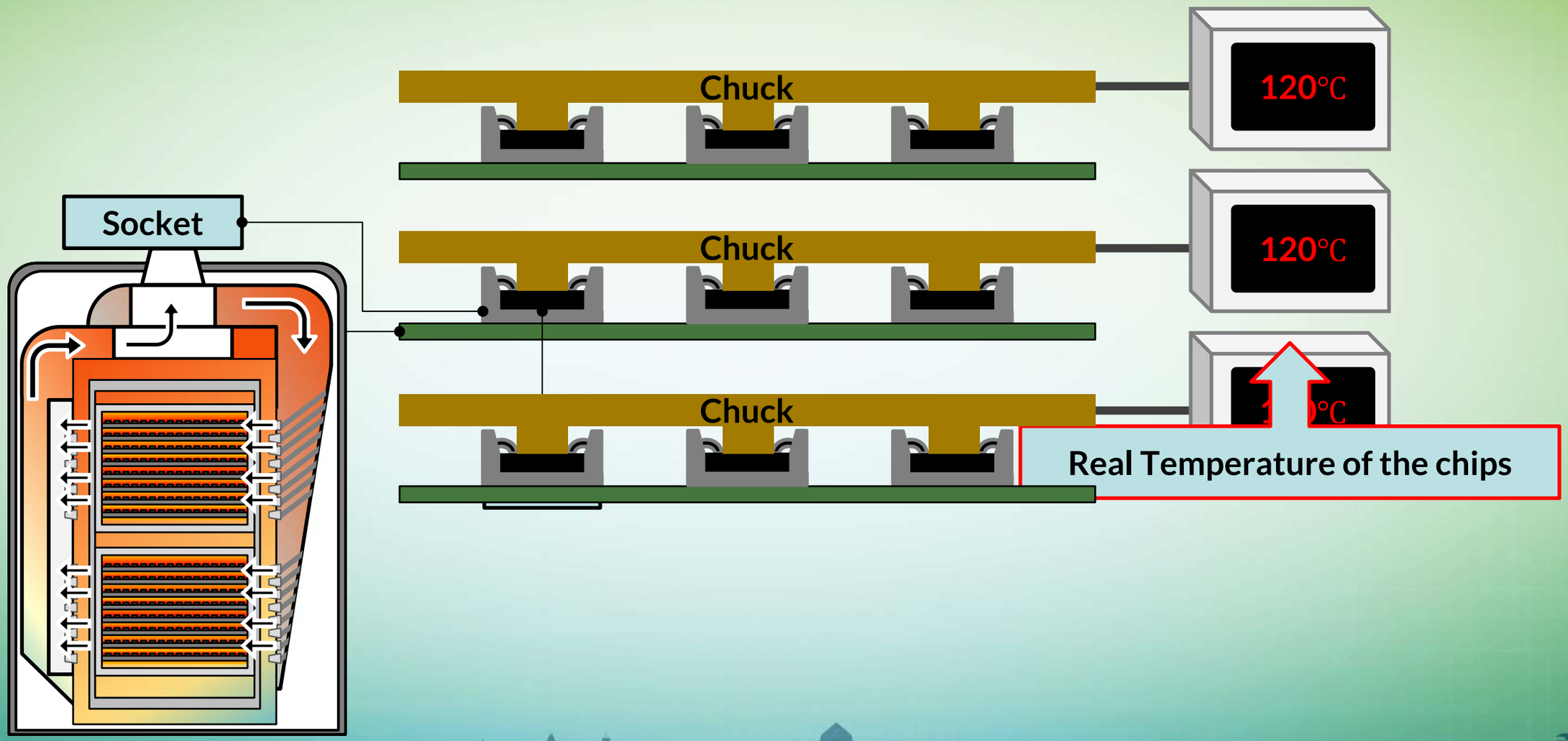



Ideal test
Convection-based test
Underkill
• Missing defects
• Lowering the reliability and quality
Overkill
• Low yields
• Reducing lifespan by over stresses
0

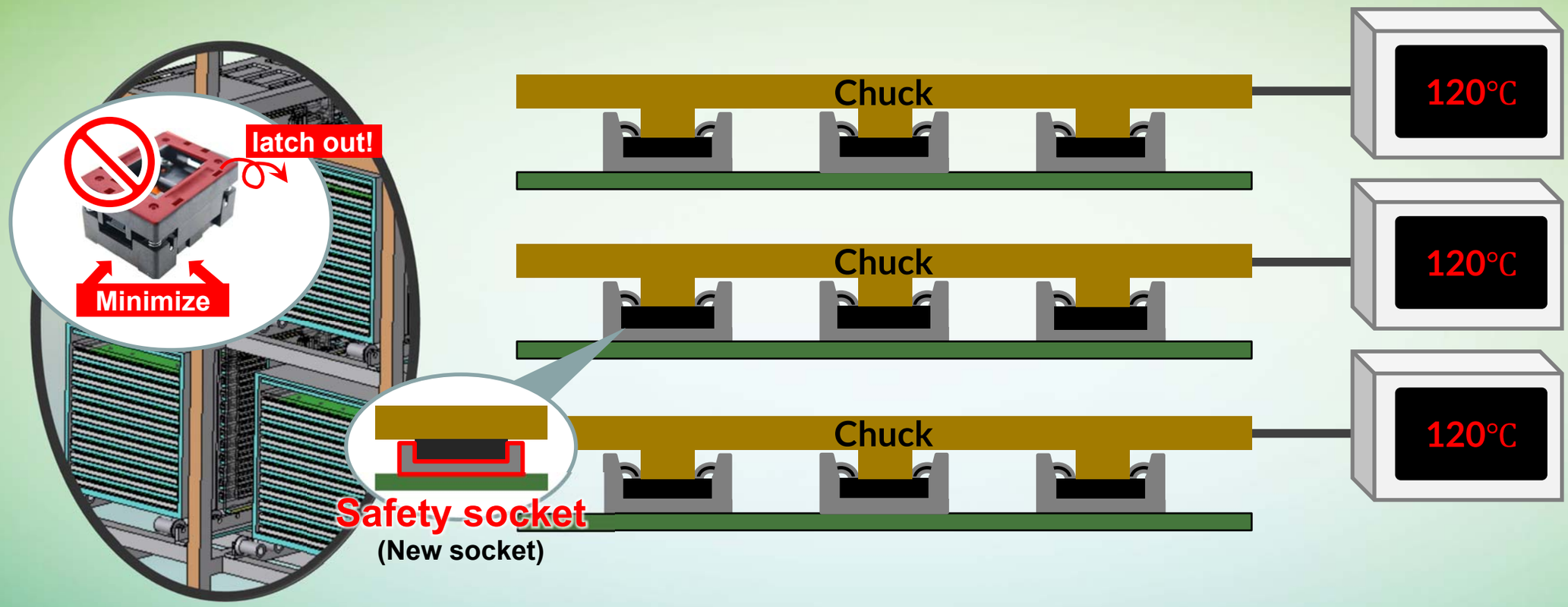
Real temperature and Time-saving



Real temperature and Time-saving



2x Higher Density Board ; Economy shuttle & Safety socket



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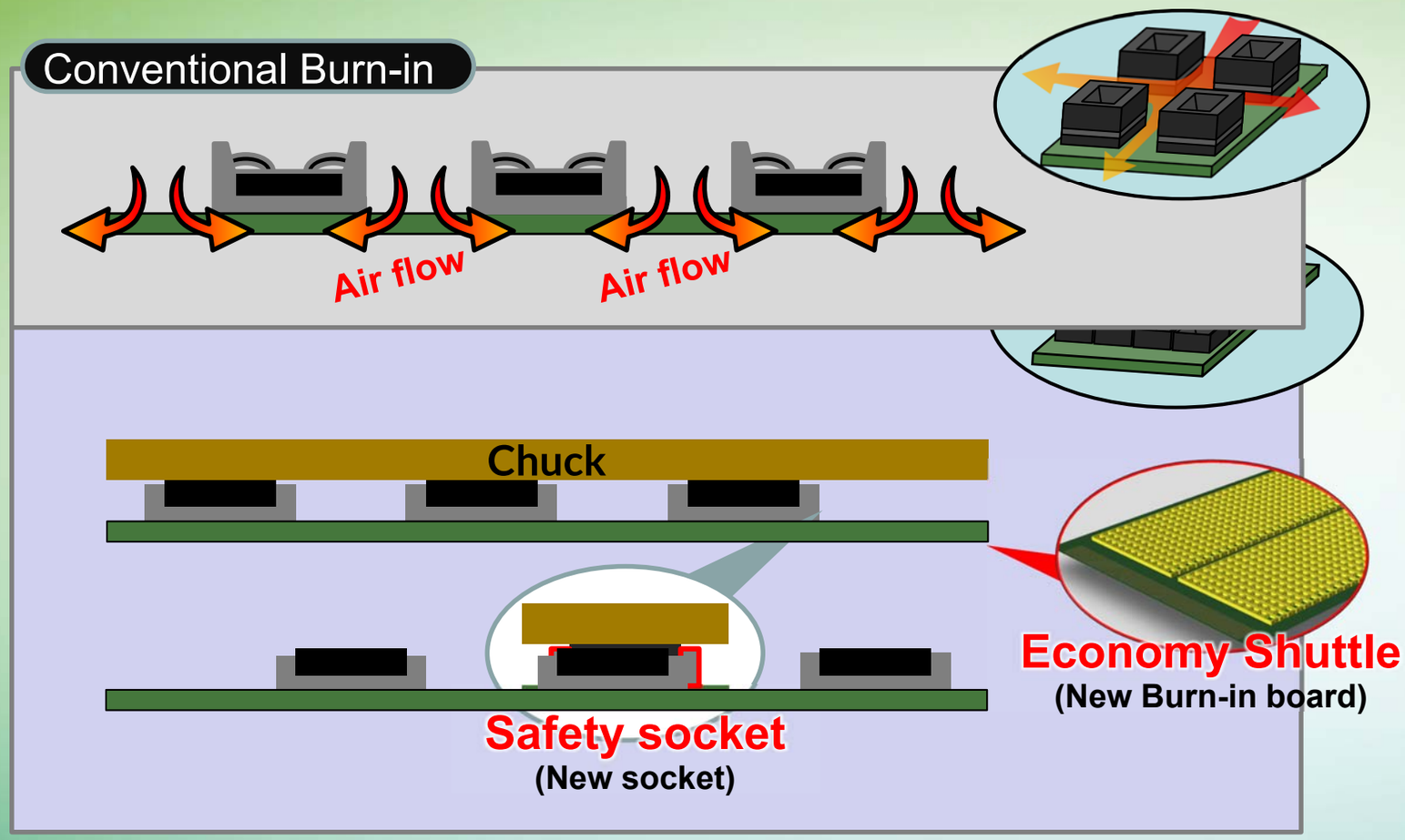
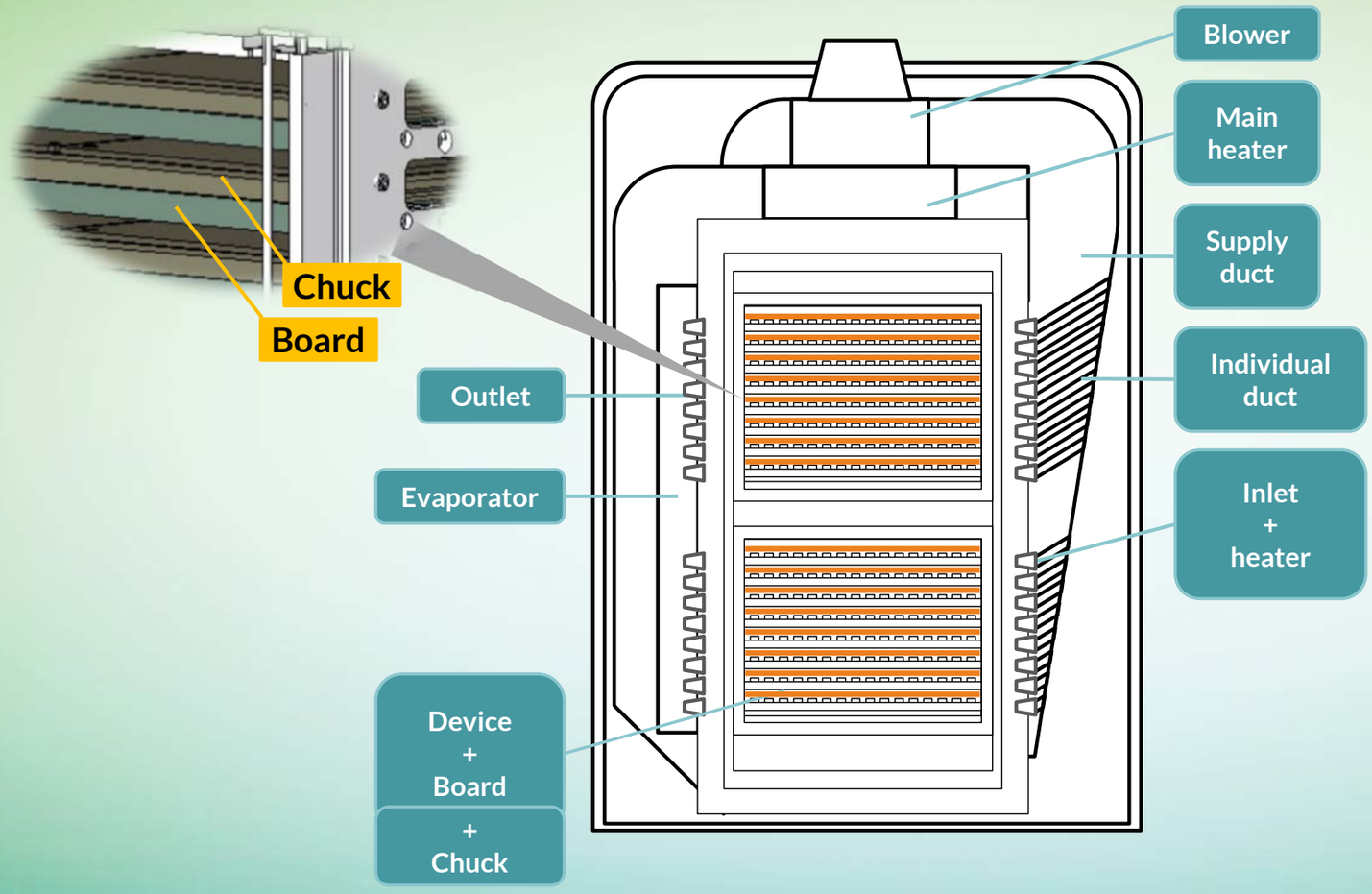


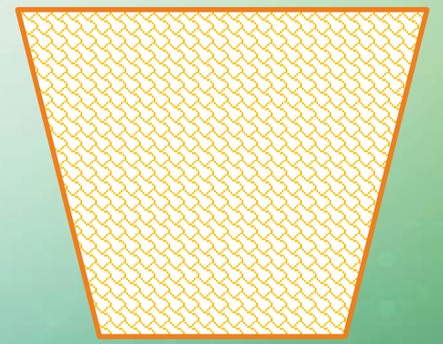
- Without clamps
- Direct heat transfer from a chuck
- Minimized margins
- High density

2x Efficient Footprint

Compactness by eliminating units for air flow

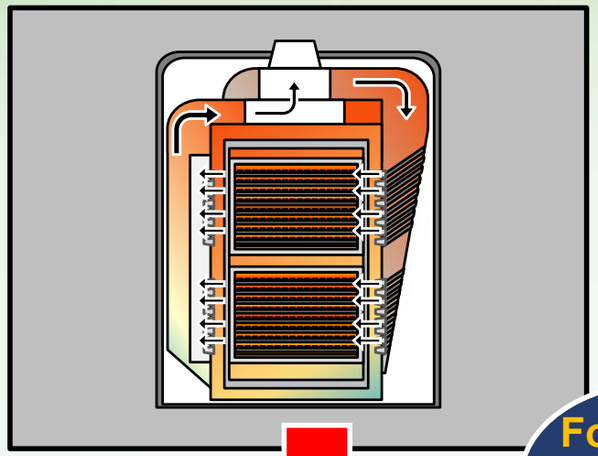


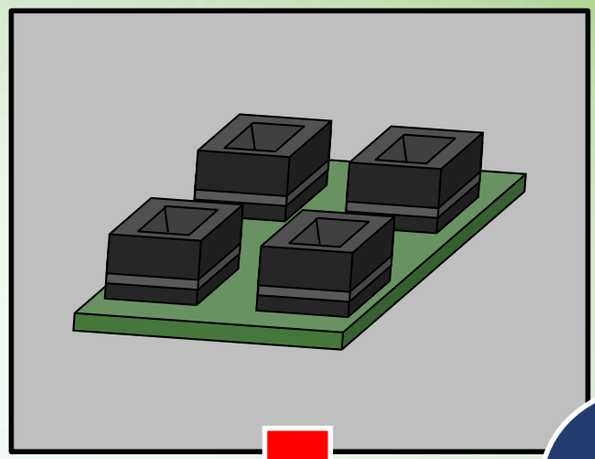
Footprint wasters



Convection-based Chamber VS Conduction-based system with new ways

Conventional Burn-in



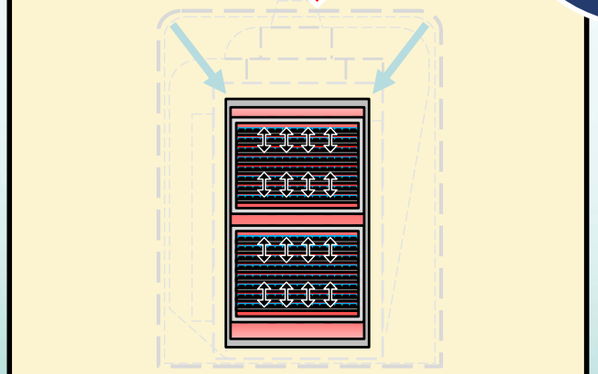


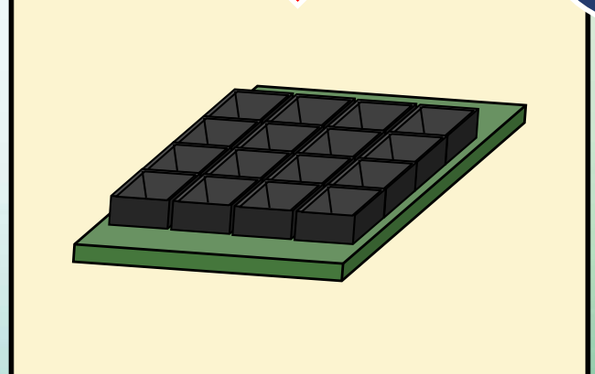
Footprint Efficiency x2

Chip Density x2

New system

(Conductional Burn-in)

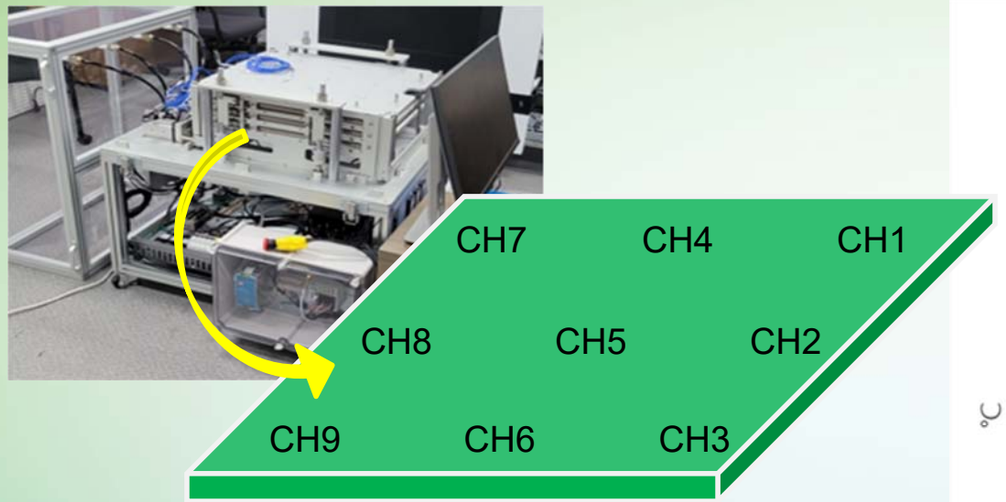


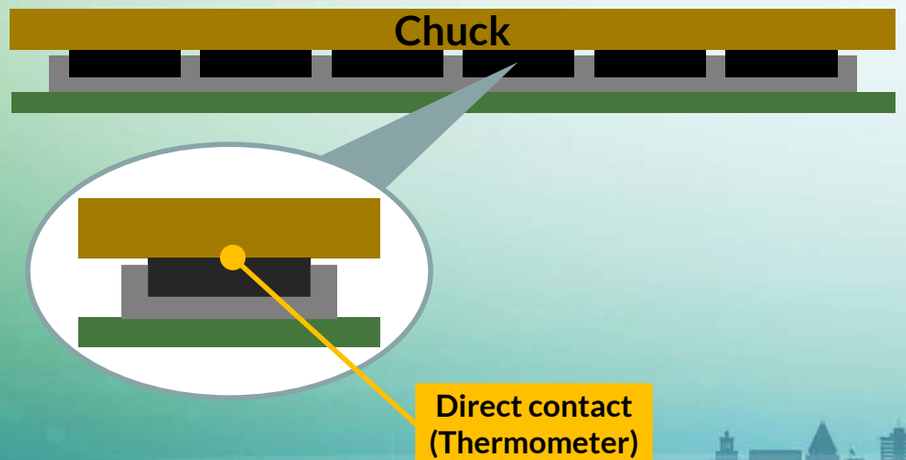


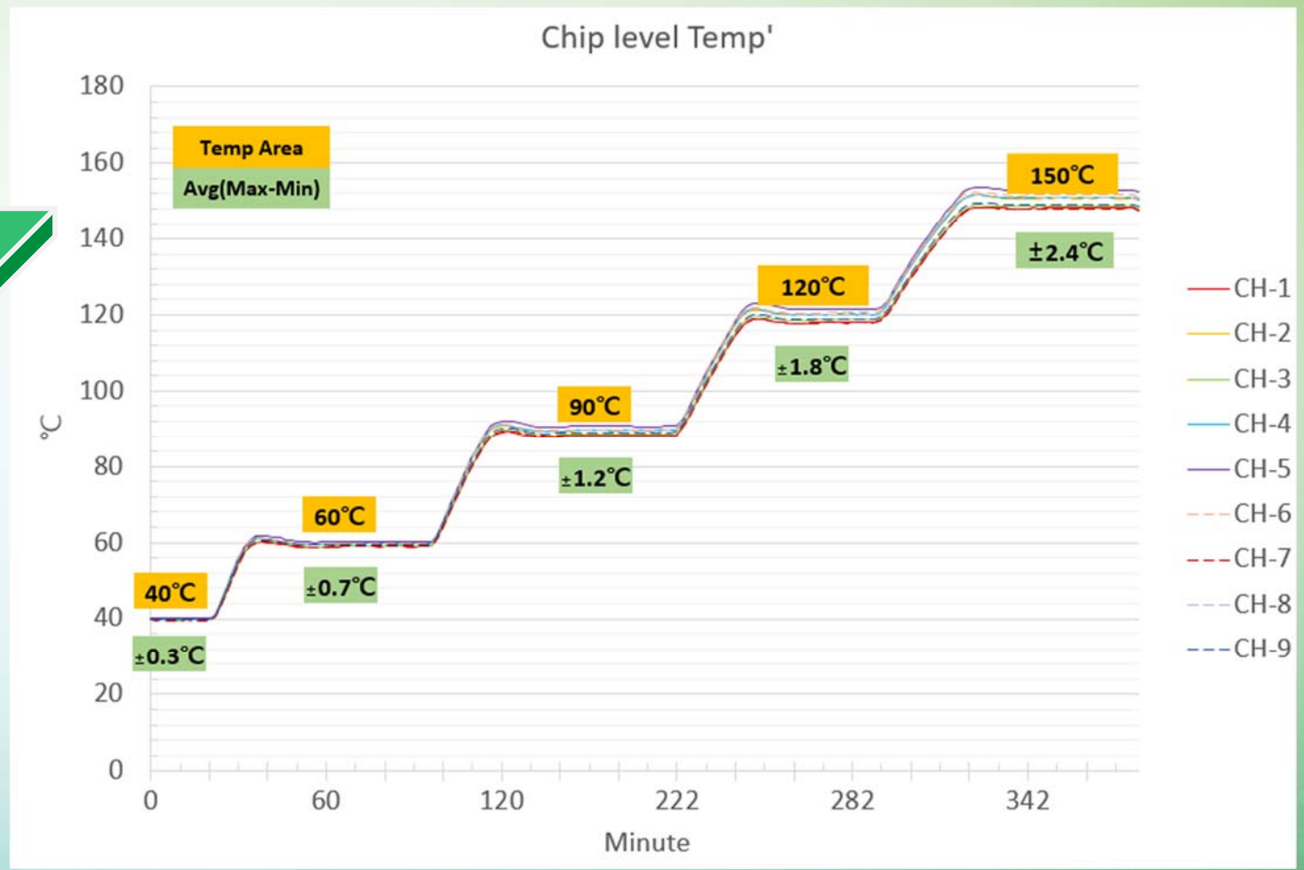
Total quadruple(x4) density keeping real temperature !!!

Bench test in conduction-based kit

Conduction-based method with improved uniformity

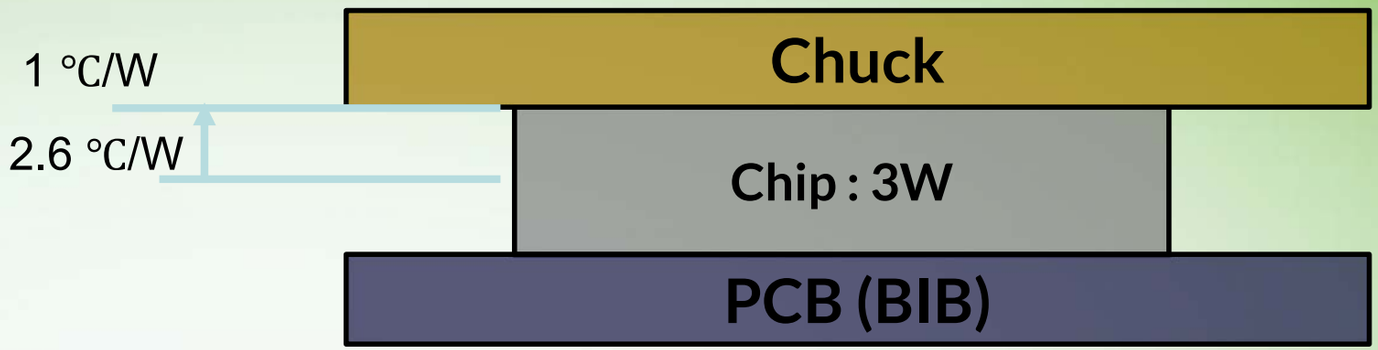






Temperature control by a chuck

Size : 20mm x 10mm
Chuck temp: 120 ℃
PCB temp: 120 ℃
Heat from junction: 3W
Junction to top : 2.6 ℃/W
Junction to bottom : 12.8 ℃/W
Contact resistance: 1℃/W



Junction temp.= 120 + (2.6+1)* 3 =130.8℃ (+10.8)
But If we set chuck temp at 109.2 then junction temperature will be 120℃ sharp!!

temp. error :

Heat deviation* 3.6 + chuck temp deviation + contact resistance deviation* 3W

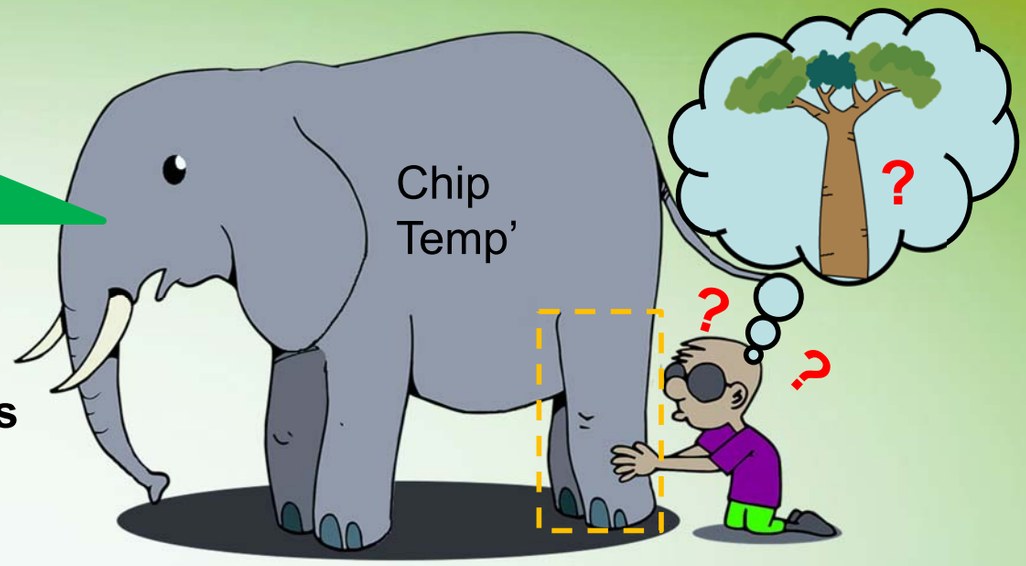
Upto the state of the chip

Upto the system

We are trying to make this term as small as possible

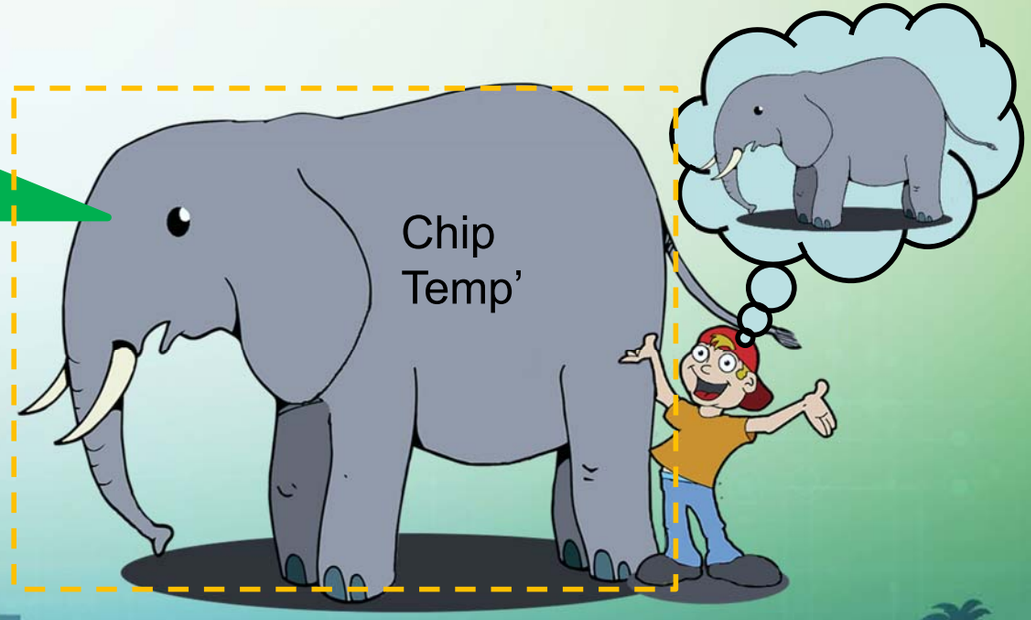
So it's time to say Bye to

1. Indirect temperature control ; Uniformity
2. Bulky gas chamber with units for convective condition
3. Rough board including flow paths and latch type sockets



And to say Hello to

1. Intuitive temperature control and improved uniformity
2. Spatially efficient system and high density board
3. Improved throughput



Thank you