

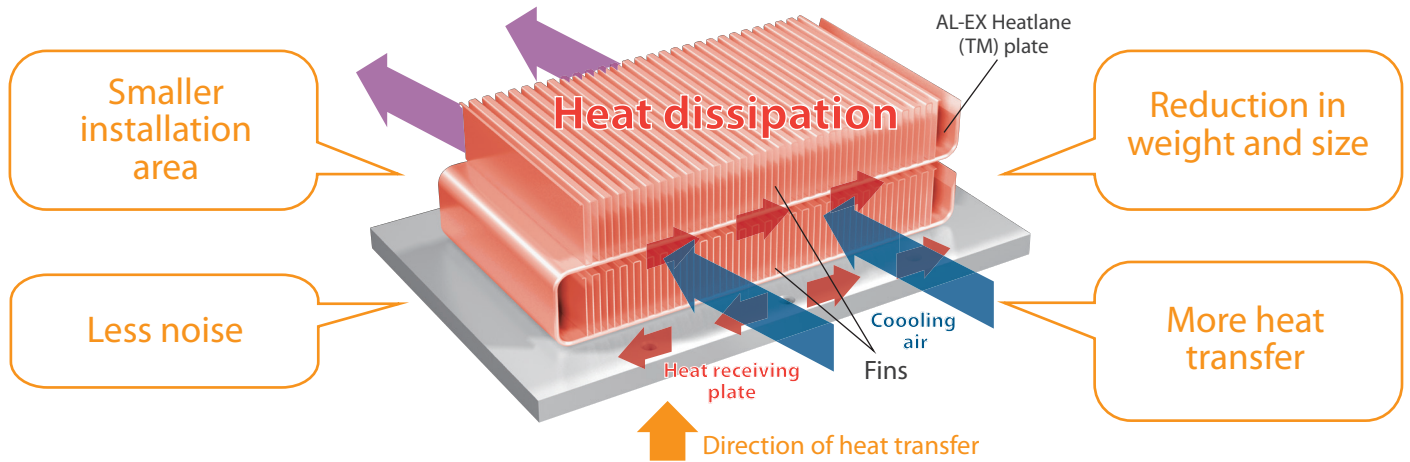
## Application Example of HEATLANE®

Case Study for Mizutani Electric Ind. Co., Ltd.



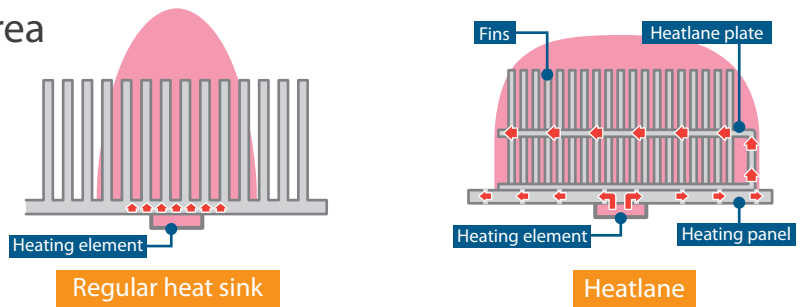
Patent, trademark registered

Designed to offer the best performance in the limited space



### Expand the Heat Dissipation Area

- Quickly dissipates heat and extends heat dissipation area
- Extremely effective when cooling down devices with high thermal density
- Thermal characteristics are reinforced by heat transfer through accumulated low-height fins on Heatlane



### Evaluation example

Model shape used:  
200 width x 130 length x 70 height, 8.2 base thickness (mm)

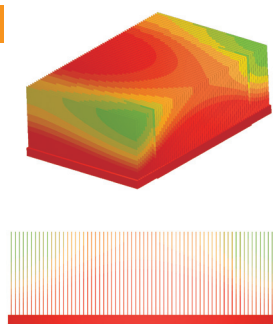
**Conditions** - Heating element: 140 x 130 (mm), 500 (W)  
- 2 m/s front velocity

Types	Modeling of fins (mm)	Thermal resistance (°C/W)	Mass (g)
Heatlane	0.5 (thickness) x 110 (length) x 28 (height), 56 fins x 2 layers	0.064	1130
Regular heat sink	0.5 (thickness) x 130L (length) x 61.8 (height) x 66 fins	0.088	1300

### CFD analysis application

#### Regular heat sink

Heat centers near the heating element. The degree of Fin effectiveness remains low as the heat dissipating area is small.

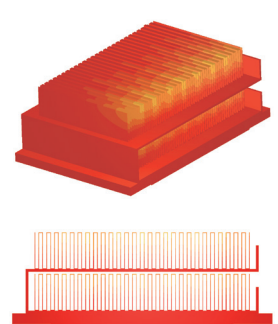


#### Heatlane

Heat is transferred to the entire fin through Heatlane plates. Functioning performance is optimized by high fin effectiveness and dissipated base heat.

	Thermal resistance (°C/W)
Measured value	0.065
Analysis value	0.064

Analysis and test values are virtually equal



### Customer Comments

Accurate thermal analysis is crucial for satisfying engineers' various needs today. scSTREAM and HeatDesigner are the very rare tools that enable us to simulate our designs in a way as close to actual measurements as possible. We are happy with Cradle's software and hope to continuously use it for more thermal analyses.