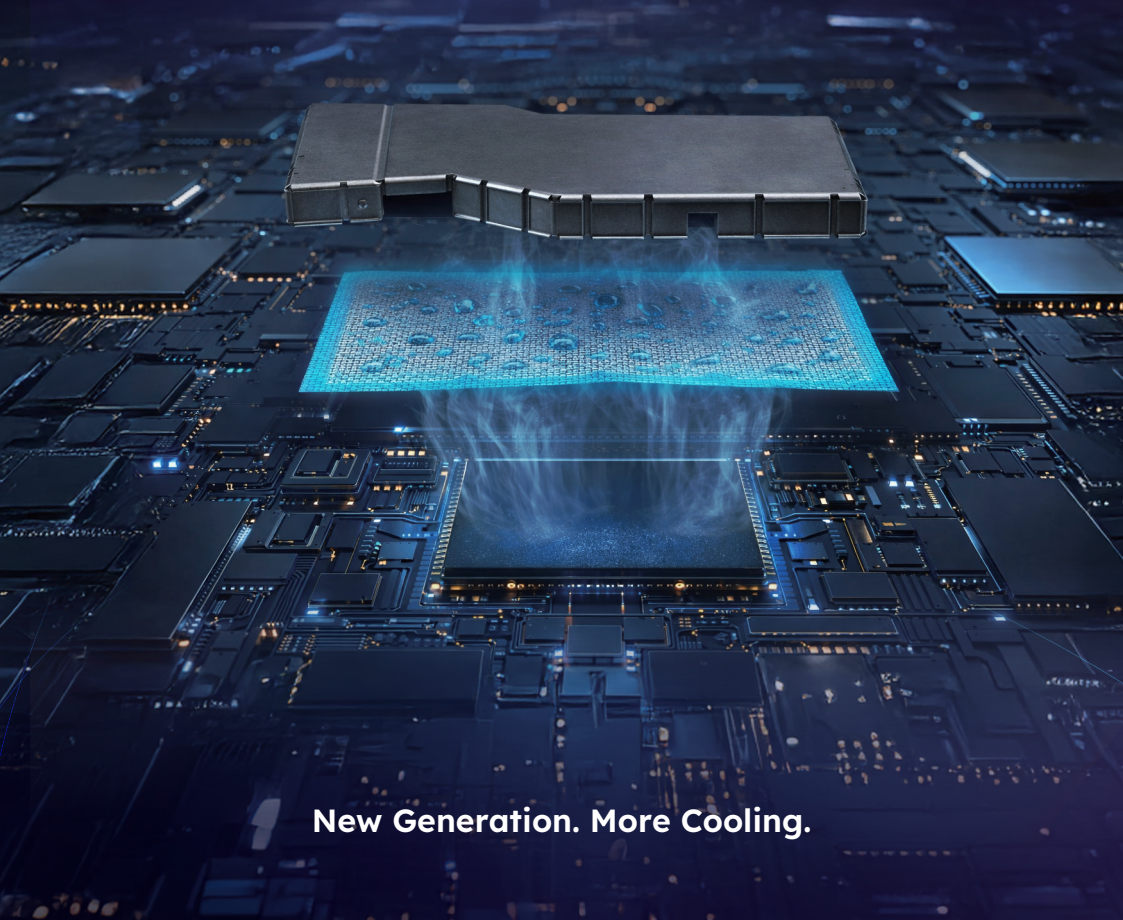
Xerendipity

HEAT SPREADERS

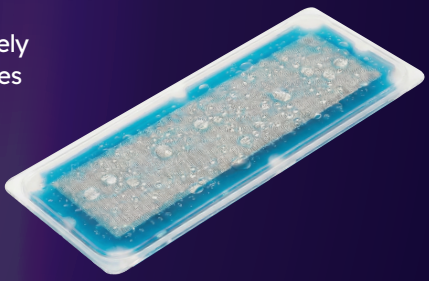
NMVC™ | Vapor-Pad™



New Generation. More Cooling.

NMVC™ | Non-Metal Vapor Chamber

A non-metal structure, paired with a precisely engineered wick and working-fluid core, enables rapid heat spreading, minimizes hotspots, and improves temperature uniformity.



Material Characteristics

- Impact resistance and strong plasticity
- Customizable evaporation activation point

Item	NMVC™	Test Standard
Thickness (mm)	0.35~3.0	–
Qmax (W)	<10	–
Two-phase Thermal Conductivity (W/m·K)	2500~3000	ASTM E1461 (LFA) modified
Temperature Cycling Test (°C)	-30~+105	IEC 60068-2-14
Salt Spray Test	Pass - 72 hours	ASTM B117
Hazardous Substances Test	Free of harmful substances like lead, mercury, and cadmium.	RoHS (2015/863/EU)
Signal Interference (Ω)	$10^{11}\Omega$	$<10^{8}\Omega$

VC vs. NMVC™ Comparison

Item	VC	NMVC™
Thickness (mm)	~0.35	0.35~3.0
Thermal Conductivity	High	High (up to 90%VC)
Weight	x	1/5 x
Electrical Conductivity	High	Insulation, no signal interference
Interference to Wireless	Yes	None
Design Flexibility	Rigid	Flexible

Vapor-Pad™

Vapor-Pad™ features a support-free capillary design optimized for consumer electronics, including smartphones and handheld devices. By integrating isolating thermal putty or a 0.1–0.3 mm ultra-thin thermal tape at the interface, microscopic surface gaps are bridged and contact thermal resistance is reduced—achieving performance comparable to conventional vapor chambers.

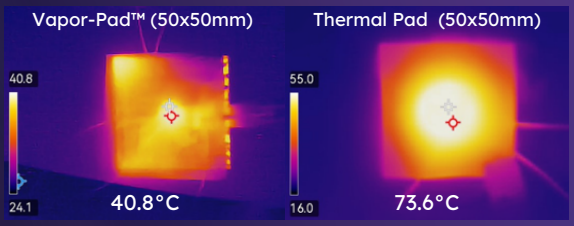
Item	Vapor-Pad™	Traditional Thermal Pad	Test Standard
Function	Z-Conduct + XY-Spread	Z-Conduct Only	–
Thickness (mm)	0.35~3.0	0.25~5.0	ASTM D374
Thermal Conductivity @1mm Thickness (W/m·K)	Kxy = 800~1200 Kz = 15~25	Kxyz = 3~15	ASTM D5470 modified / Laser Flash
Density (g/cm³)	<4.5	3.5~4.5	ASTM D792
Flame Rating	V-0	V-0	UL94
Operating Temperature (°C)	-30~+105	-50~+150	–
Volume Resistivity (Ohm·m)	10^{12}	10^{12}	ASTM D257
Hardness (Shore OO)	50~70	25~70	–
Elongation (%)	5~10	>20	ASTM D412

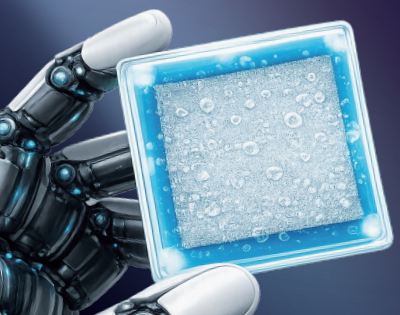
*x = ES sample stage

Surface Temperature Distribution: Vapor-Pad™ vs. Thermal Pad

Under identical heat input, Vapor-Pad™ improves heat spreading, producing a more uniform surface temperature distribution and lower peak temperatures compared to conventional thermal pads.

Heater Size: 10 × 10 mm | Test Duration: 20 min





Note:
Specifications are subject to change without notice.
Users are responsible for testing the suitability of the product for their specific application, especially regarding pressure and temperature limits.

Customization Process

01 | Inquiry
Customer requirements and specifications for the NMVC™ and related cooling modules are defined.

02 | Design and Sampling
Design NMVC™ solutions, validate internal parameters, and produce samples.

03 | Sample Confirmation
Samples are provided for customer confirmation to ensure design requirements are met.

04 | Trial & Mass Production
Integrate product lines to deliver vapor chambers and thermal modules on schedule.

FAQ

NMVC™

1 Does NMVC™ deliver reliable thermal performance compared to metal vapor chambers?

Yes. NMVC™ provides thermal performance close to metal vapor chambers (approximately 80–90%, depending on application conditions) while maintaining durability and leak resistance. Its proprietary multi-layer barrier design is SGS-certified and validated through thermal shock and high-humidity aging tests.

2 Can NMVC™ be designed for complex form factors?

Yes. NMVC™ supports flexible manufacturing, allowing 3D contours and ultra-thin designs for tight, irregular spaces in compact devices.

3 What are the primary applications of NMVC™?

NMVC™ is optimized for antenna-rich systems requiring high RF performance, including 5G smartphones and CPEs, and for weight-critical applications such as AR/VR headsets.

Vapor-Pad™

1 Is Vapor-Pad™ considered a thermal pad or a vapor chamber?

Vapor-Pad™ is a hybrid innovation that combines Z-axis conduction with X-Y vapor-chamber heat spreading, enabling effective hotspot mitigation beyond the capability of conventional silicone pads.

2 What pressure or structural limitations should be considered?

Because it lacks internal supporting pillars to maintain flexibility and thinness, Vapor-Pad™ is not designed to be a structural support component. It works best with uniform "peel & stick" application.

3 Why is the maximum operating temperature limited to 105 °C?

The specification is optimized for consumer electronics, such as smartphones and handheld devices, where operating temperatures remain well below 105 °C. The temperature limit is defined by the internal capillary structure and bonding materials to ensure long-term reliability in its intended applications.

Xerendipity

We are pleased to introduce Xerendipity (XR), a newly established company created to focus exclusively on advanced cooling and next-generation thermal solutions for high-performance, high-density electronic systems.

While Xerendipity is a new brand, it is built on the same engineering foundation, teams, and technical expertise you trust from T-Global Technology — allowing for a more focused and agile approach to increasingly complex thermal challenges.

Our Story

XR was established with a singular focus on solving the growing thermal challenges of modern electronics. As power density increases across AI, HPC, and data-center systems, conventional cooling solutions are reaching their limits. XR brings together advanced thermal engineering and hands-on manufacturing experience to deliver cooling technologies designed to perform reliably in real-world applications.

Our Mission

Our mission is to engineer advanced thermal solutions that enable the next generation of high-performance computing. XR focuses on liquid cooling, vapor chamber, and integrated thermal modules designed to solve the challenges of high heat density, limited space, and long-term reliability.

Experienced Leadership

From concept design to system integration, XR approaches thermal management as a complete engineering discipline. XR optimize heat paths, fluid flow, and material selection to ensure consistent performance under demanding operating conditions. Every solution is developed with a balanced focus on efficiency, manufacturability, and system compatibility.

New Generation. More Cooling.

Xerendipity

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Version 02