

VK-XR420W

High-Flow, Ultra-Low Stress Thermal Gel

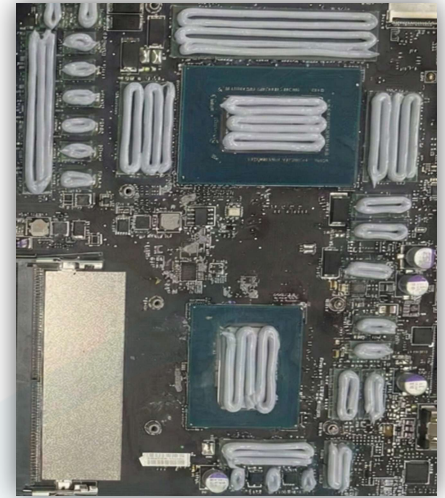


Product Description

VOT VK-XR420W is a pre-cured, single-component thermal gel, VK-XR420W is designed to deliver a high thermal conductivity of 4.6 W/m-K, while offering an unprecedented combination of high-speed dispensability and exceptional vertical stability.

It features a unique thixotropic index that allows the material to lower its viscosity instantly under shear stress (during dispensing or screen printing), achieving a dispensing rate exceeding 50 g/min. This characteristic ensures compatibility with high-volume automated manufacturing lines, significantly increasing Units Per Hour (UPH) while reducing cycle times.

Furthermore, VK-XR420W is engineered for Ultra-Low Stress applications. With the increasing miniaturization of electronics, fragile components and delicate solder joints are susceptible to damage from the compressive forces of traditional thermal pads. VK-XR420W flows effortlessly into microscopic surface imperfections and accommodates varying gap heights across multiple heat sources with a single dispensing shot. It can achieve an industry-leading Bondline Thickness (BLT) as thin as 0.06 mm, minimizing thermal resistance



PROPERTY	VK-XR420W	TEST METHOD
Construction	Filled Silicone Dispensable	N/A
Color	Ligh Grey	Visual
Density	3.0 g/cc	ASTM D792
Flow Rate,30cc Syringe	> 50g/min	90 psi, no tip
Bulk Thermal Conductivity	4.2 W/m-K	ASTM D5470
Thermal Resistance		
10 psi & 60°C	0.28 °C-cm ² /W	ASTM D5470
50 psi & 60°C	0.18 °C-cm ² /W	
Constant gap of 0.1mm	0.35 °C-cm ² /W	
Constant gap of 1.0mm	2.30 °C-cm ² /W	
Operating Temperature Range	-40°C to 150°C	VOT Test Method
Minimun BLT	~60um	VOT Test Method
Dielectric Constant	8 @1MHz	ASTM D150
Volume Resistivity	10 ¹³ Ω-cm	ASTM D257
Flammability Rating	V-0	UL 94

Typical Applications

- Optical Transceivers & Fiber Optic Modules
- Automotive ADAS Sensors
- 5G Telecommunication Infrastructure
- High-Performance AI Processors & ASICs
- Automotive Electronic Control Units (ECUs)
- High-Speed NVMe SSDs & Memory Controllers
- Multi-Chip Modules with Variable Gap Tolerances & Height Differences
- Handheld Devices, Tablets & Gaming Consoles

Storage Conditions

- Storage Temperature: 15°C to 35°C, RH <50%
- Shelf Life:6 months under above conditions

Availability

- Cans
- Pails
- Syringes

Features & Benefits

- **High Thermal Conductivity:** 4.6 W/m-K performance with minimal thermal resistance.
- **Precision Rheology Control:** High flow rate (>50 g/min) with non-slump vertical stability.
- **Ultra-Low BLT:** Compresses to 0.06 mm for optimized heat transfer.
- **Siloxane-Free Purity:** D3–D20 not detected (<50 ppm); zero oil bleeding risk.
- **Low Stress Formulation:** Ultra-soft consistency protects fragile components and pins.
- **Pre-Cured Convenience:** 1-part reworkable system; no mixing or curing needed.
- **Structural Integrity:** Excellent reliability against pump-out and vibration.

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Limited Warranty: For a period of 12 months from the date of first sale, VOT warrants this product(s) to be free from defects in manufacturing. Our only obligation will be to provide replacement product for any portion proving defective, or at our option, to refund the purchase price thereof. User assumes all other risks, if any, including the risk of injury, loss or damage, whether direct or consequential, arising out of the use, misuse, or inability to use this product(s).

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