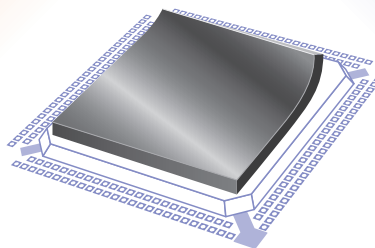
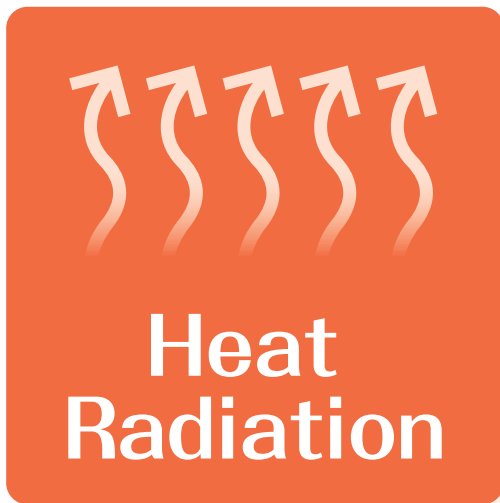


Heat Conducting Magnetic Sheet Liquialloy™ (with Noise Suppression)

**NEW
2009**

HMFTW Series

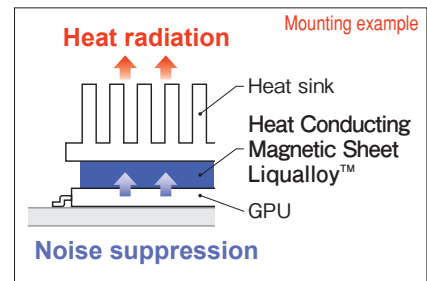
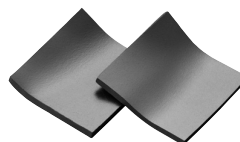
Dual function on 1 sheet



Multi-functions of heat conduction and noise suppression in one device through our original magnetic material technology. The best heat and noise solutions for GPU/CPU optimum performance.

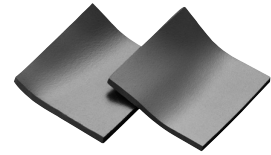
- Superior noise suppression in a wide frequency range from 10MHz to 5GHz.
- Low molecule siloxane compatible (20 ppm max.)
- Flame resistance of 94V-0.
- Complies with the RoHS Directive.

RoHS Directive: Restriction of the use of certain Hazardous Substances in electrical and electronic equipment.



Heat Conducting Magnetic Sheet Liquallow™ (with Noise Suppression)

HMFTW Series



**Multi-functions of heat conduction and noise suppression in one device through our original magnetic material technology.
The best heat and noise solutions for GPU/CPU optimum performance.**

Applications

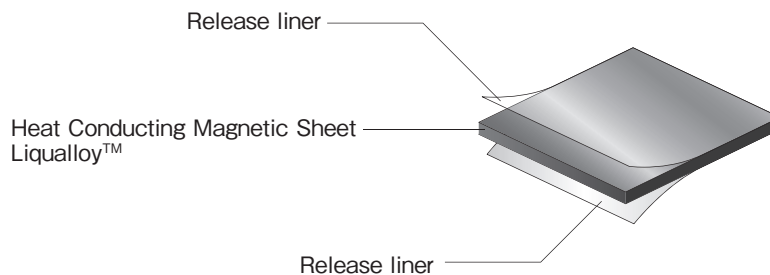
Flat panel TVs, car navigation systems, notebook PCs, etc.

Typical Specifications

| Items | Specifications |
|-----------------------------|---------------------------|
| Frequency range | 10MHz to 5GHz |
| Operating temperature range | -40°C to +150°C |
| Specific gravity | 3.4g/cm ³ |
| Hardness | E40 |
| Volume resistance | 1.0×10 ¹³ Ω·cm |
| Thermal conductivity | 1.2W/mk(Hot-wire method) |
| Initial permeability (μ') | 10 |
| Low molecule siloxane | 20 ppm max. |
| Flame resistance | 94V-0 |
| Maximum dimensions | 100mm×100mm |
| Standard thickness | 1mm, 2mm, 3mm |

Structure

Remove release liners before use.



Precautions when handling our products

- For the export of products which are controlled items subject to foreign and domestic export laws and regulations, you must obtain approval and/or follow the formalities of such laws and regulations.
- Products must not be used for military and/or antisocial purposes such as terrorism, and shall not be supplied to any party intending to use the products for such purposes.
- Unless provided otherwise, the products have been designed and manufactured for application to equipment and devices which are sold to end-users in the market, such as AV (audio visual) equipment, home electric equipment, office and commercial electronic equipment, information and communication equipment or amusement equipment. The products are not intended for use in, and must not be used for, any application of nuclear equipment, driving control equipment for aerospace or any other unauthorized use.
With the exception of the above mentioned banned applications, for applications involving high levels of safety and liability such as medical equipment, burglar alarm equipment, disaster prevention equipment and undersea equipment, please contact an Alps sales representative and/or evaluate the total system on the applicability. Also, implement a fail-safe design, protection circuit, redundant circuit, malfunction protection and/or fire protection into the complete system for safety and reliability of the total system.
- Before using products which were not specifically designed for use in automotive applications, please contact an Alps sales representative.

Cautions for using this catalog

- The colors of the products in the catalog may slightly differ from those of the actual products.
- The external appearance, functions and other specifications herein may be changed for improvement and other reasons without prior notice. Furthermore, the products herein may discontinue without prior notice.
- Liquallow is a trademark of Alps Electric Co., Ltd.
- All product names, company names and names of standards described in this catalog are trademarks or registered trademarks of their respective owners.
- The contents of this catalog are according to Alps Electric as of January 2009.
- This catalog is valid until the end of December 2009.

Inquiries about products

Products information center
+81 (3) 5499-8154
Products information site
<http://www3.alps.com/e/>

Perfecting the Art of Electronics
ALPS[®]
ALPS ELECTRIC CO., LTD.
1-7, Yuki-gaya-otsukamachi, Ota-ku, Tokyo, 145-8501, Japan