

Sheet-type Thermal Conductive GEL

λ GEL[®] COH

◆ Lambda GEL/COH ◆

Outstanding thermal conductivity and flexibility for efficient heat dissipation.
Solutions for the heat problems associated with electronic components.



www.infratron.de

About λ GEL COH series

- ◆ λ GEL sheets are very soft, tacky sheet-type gel, facilitating excellent heat dissipation results.
- ◆ λ GEL sheets adhere to rough surfaces and drive out all air gaps.
- ◆ λ GEL sheets are good electrical insulators and are flame retardant. UL94, V-0 approved.
- ◆ λ GEL sheets are usable over a wide temperature range.

Product Line

Product	Features
COH-1002	Most cost effective, Softer, Excellent electrical isolation
COH-1002LVC	Siloxane cut down version of COH-1002
COH-6000LVC	Softest, High damping
COH-2003LVC	Medium thermal conductivity, Siloxane cut down version
COH-2003LVC-S	Softer and high damping version of COH-2003LVC
COH-4000	Excellent thermal conductivity: 6.5W/m·K
COH-4000LVC	Siloxane cut down version of COH-4000
New COH-4065LVC	Excellent thermal conductivity: 6.5W/m·K, Softer, High damping version of COH-4000LVC

Sheet type

Paste type

EM Noise

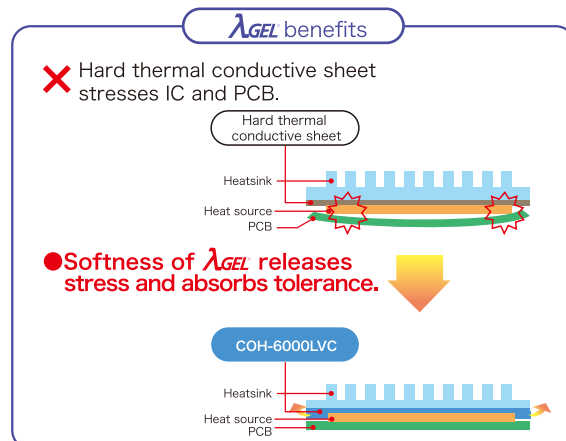
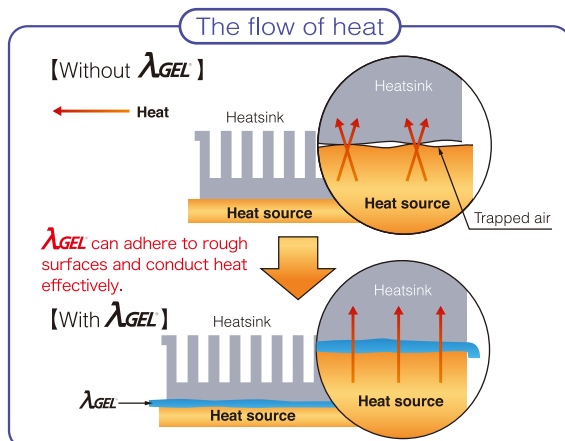
Siloxane Free

New
<One side non tacky version available>

Easy handling saves working time and is useful for rework.

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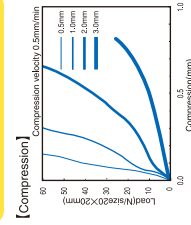
Typical Properties

Item	COH-1002		COH-1002LVC		COH-6000LVC		COH-2003LVC		COH-4000		COH-4000LVC		COH-4065LVC		Remark
	Reasonable price	Standard grade	Middle grade	Middle grade	Middle grade	Middle grade	Middle grade	Middle grade	High damping	High grade	High grade	High grade	High grade	High grade	
Characteristics															
Thermal conductivity (W/m·K)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	6.5	6.5	6.5	6.5	6.5	6.5	
Our tests															
Hot Wire Method #1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1	2.1	2.1	2.1	JIS R 2616
Hardness(Needle penetration: 1/10mm)	70	60	90	90	90	90	90	90	50	45	45	45	45	45	JIS K 2207
Appearance	White	White	Blue	Blue	Blue	Blue	Orange	Orange	Gray	Gray	Gray	Gray	Reddish brown	Reddish brown	
Specific gravity	1.7	1.7	1.7	1.7	1.7	1.7	1.9	1.9	2.8	2.9	2.9	2.9	2.8	2.8	JIS K 6249
Tensile strength(MPa)	0.17	0.16	0.15	0.15	0.15	0.15	0.33	0.33	0.12	0.35	0.35	0.35	0.10	0.10	JIS K 6249
Volume resistivity															
Dielectric breakdown voltage (kV/mm)	18.0	13.8	12.5	12.5	12.5	12.5	13.7	13.7	5.7 × 10 ¹²	7.1 × 10 ¹³	7.1 × 10 ¹³	7.1 × 10 ¹³	4.4 × 10 ¹²	4.4 × 10 ¹²	JIS K 6249
Elongation(%)	164	139	350	350	350	350	78	78	7.2	12.5	12.5	12.5	13.6	13.6	JIS K 6249
Compression set(%)	69	58	49	49	49	49	61	61	220	68	68	68	132	132	JIS K 6249
(50Hz)	7.3	5.5	5.2	5.2	5.2	5.2	4.5	4.5	92	72	72	72	75	75	JIS K 6249
(1kHz)	4.8	4.1	3.7	3.7	3.7	3.7	4.1	4.1	8.6	5.6	5.6	5.6	6.8	6.8	JIS K 6249
(1MHz)	3.9	3.7	3.4	3.4	3.4	3.4	3.9	3.9	7.6	5.0	5.0	5.0	6.5	6.5	JIS K 6249
Dielectric constant	0.290	0.207	0.115	0.115	0.115	0.115	0.086	0.086	0.198	0.006	0.006	0.006	0.058	0.058	JIS K 6249
Dielectric dissipation factor	0.153	0.087	0.057	0.057	0.057	0.057	0.036	0.036	0.082	0.002	0.002	0.002	0.041	0.041	JIS K 6249
(1MHz)	0.013	0.007	0.005	0.005	0.005	0.005	0.004	0.004	0.054	0.0004	0.0004	0.0004	0.011	0.011	JIS K 6249
Low molecular weight Siloxane level (ppm)	301	6	19	19	19	19	2.8	2.8	209	13	13	13	72	72	
Solvent extraction method									Less than 1	Less than 0.1	Less than 0.1	Less than 0.1	—	—	
Head space Method #2	Less than 5	Less than 0.1	Less than 1	Less than 1	Less than 1	Less than 1	Less than 0.1	Less than 0.1	V-0(0.5mmt<)	V-0(0.5mmt<)	V-0(0.5mmt<)	V-0(0.5mmt<)	V-0(1.0mmt<)	V-0(1.0mmt<)	UL94
Flame retardance	V-1 (0.5mmt)	V-1 (0.5mmt)	V-1 (0.5mmt)	V-1 (0.5mmt)	V-1 (0.5mmt)	V-1 (0.5mmt)	V-1 (0.5mmt)	V-1 (0.5mmt)	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	
RoHS controlled substances	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	
Temperature range (C)	-40~150	-40~120	-40~150	-40~150	-40~150	-40~150	-40~120	-40~120	-40~200	-40~150	-40~150	-40~150	-40~150	-40~150	
New One side non tacky type	○	○	○	○	○	○	X	X	○	○	○	○	○	○	

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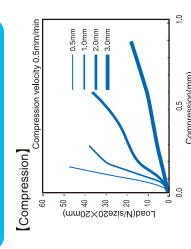
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COH-1002



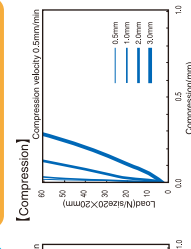
Thickness (mm)	Thermal resistance (CW)		
	10%	20%	30%
0.5	0.38	0.31	0.24
1.0	0.99	0.86	0.72
2.0	2.22	1.84	1.67
3.0	3.44	3.03	2.62

COH-6000LVC



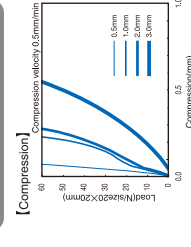
Thickness (mm)	Thermal resistance (CW)		
	10%	20%	30%
0.5	0.36	0.28	0.22
1.0	0.97	0.85	0.68
2.0	2.11	1.89	1.65
3.0	3.11	2.86	2.50

COH-2003LVC



Thickness (mm)	Thermal resistance (CW)		
	10%	20%	30%
0.5	0.28	0.21	0.17
1.0	0.75	0.64	0.54
2.0	1.66	1.48	1.37
3.0	2.49	2.25	2.04

COH-4000



Thickness (mm)	Thermal resistance (CW)		
	10%	20%	30%
0.5	0.14	0.10	0.06
1.0	0.46	0.39	0.32
2.0	1.11	0.97	0.82
3.0	1.77	1.55	1.33

Directions

- ◆ Slowly peel off one side of the protective film of **λGEL COH**.
- ◆ Carefully place the **λGEL COH** sheet on the heat source or heatsink without trapping air.
- ◆ Peel the remaining layer from **λGEL COH** with no airtrapped in between the sheet and heat dissipating device or heat generating device.

Delivery Format

[Basic Specifications]

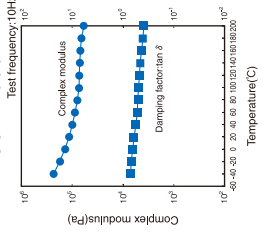
Sheet size	400mm×400mm
Sheet thickness	0.5, 1.0, 2.0, 3.0mm

※COH-4065LVC 1.0, 2.0, 3.0mm

[Custom Products]

λGEL COH can be tailored for the application by a custom sheet size or thickness, tacky or powdered surface.

[Thermal dependency] COH-4000





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λGEL® DP

◆ **Lambda GEL/DP** ◆
 Fill gaps around the heat source for improved heat dissipation.
 Chemical bonds in the **λGEL DP** eliminate running and vaporization problems.
λGEL DP easily spreads over heat generating devices.

About λGEL DP series

- ◆ **λGEL DP series** are very soft paste-type (grease) gel with heat conducting properties.
- ◆ Cross-linked particles of the **λGEL DP** eliminate running and vaporization problems seen with other traditional grease and phase change materials.
- ◆ Electrically insulative, **λGEL DP series** are ideal for electronic devices.

Product Line

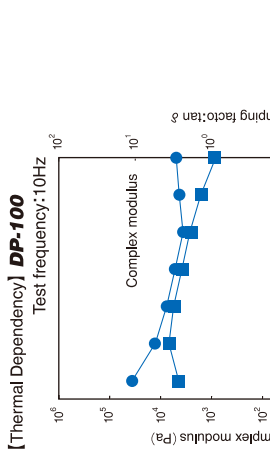
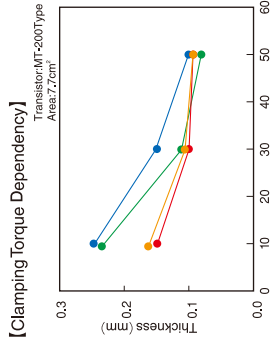
Product	Features
DP-100	High thermal conductive type : 6.5W/m·k
DP-200	Soft type, Easily spreadable
DP-300	Most cost effective, Softer type
REP-100	Thermal conductive and electromagnetic noise absorbent type

Typical Properties

Item	Paste-type Thermal Conductive Gel DP Series				EMi absorbent + Thermal Conductive Gel	Remark
	DP-100	DP-200	DP-300	REP-100		
Thermal conductivity (W/m·K)	6.5	4.8	4.8	1		—
Hot Wire Method #1	2.1	1.6	1.6	0.6		JIS R 2616
Hardness (Core penetration /10mm, not mixed)	51	55	60	60		JIS K 6249 (1/4cone)
Appearance	Gray paste	Gray paste	White paste	Black paste		—
Specific gravity	2.8	2.6	2.7	2.9		JIS K 6249
Volume resistivity (Ω·cm)	5.9×10 ¹³	7.2×10 ¹⁴	1.4×10 ¹⁴	2.0×10 ¹¹		JIS K 6249
Dielectric breakdown voltage (kV/mm)	5.0	5.6	9.6	4.0		JIS K 6249
Dielectric constant	(50Hz)	7.6	4.4	—		JIS K 6249
	(1kHz)	7.8	6.7	4.2	—	JIS K 6249
	(1MHz)	7.0	6.6	4.0	—	JIS K 6249
Dielectric dissipation factor	(50Hz)	0.234	0.017	0.005	—	JIS K 6249
	(1kHz)	0.061	0.007	0.004	—	JIS K 6249
Low molecular weight Siloxane level (ppm)	Solvent extraction method	less than 700	less than 900	less than 300	less than 300	—
	Head space Method #2	less than 1	less than 3	less than 1	less than 1	—
RoHS controlled substances	Not detected	Not detected	Not detected	Not detected	Not detected	—
	Temperature range (°C)	-40~200	-40~150	-40~120	-40~150	—



*1 Hot Wire Method - Using the OTM-650 Quick Thermal Conductivity Meter, from Kyoto Electronics Manufacturing Co., LTD.
 *2 Head Space Method at 70°C



Sheet type

Paste type

EM Noise

Siloxane Free



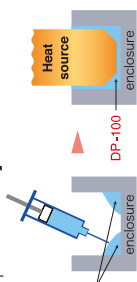
Thickness (mm)	0.10	0.15	0.20	0.30
DP-100	—	0.13	0.15	0.18
DP-200	0.13	—	0.17	0.22
DP-300	0.09	—	0.17	0.25
REP-100	0.22	—	0.36	0.50

(C/W)
 Transition/MT-200Type
 Heat input/2W

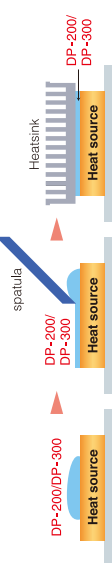
Suggested Uses

- Gaps around heat sources such as high performance semiconductors.
- The surface, underside, and lead lines of heat sources such as ICs.
- Sources of heat where it is difficult to fix sheet-type thermal gel.
- Where there is insufficient room for thermal conductive material.

[Filling Example DP-100]



[Coating Example DP-200 / DP-300]



Delivery Format

DP-100/DP-200	DP-300	REP-100
Syringe 30cc	Bottle 30cc	Bottle 20cc

Other package is also available.

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Electromagnetic Noise Absorbent Gel

λGEL® RE

◆ **Lambda GEL/RE** ◆

Minimizing EMI noise in new all-in-one solution for electromagnetic noise, heat and shock.

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About λGEL RE series

- ◆ **λGEL RE Series** sheets have both electromagnetic noise absorbent and thermal conductive characteristics.
- ◆ **λGEL RE Series** sheets adhere to rough surface with its softness, and show excellent heat dissipation and electromagnetic absorbing performance.
- ◆ **λGEL RE Series** sheets are good electrical insulators and are flame retardant.
- ◆ **λGEL RE Series** sheets are usable over a wide range of temperature range.

Product Line

Product	Features
RE-100	Thermal conductive and electromagnetic noise absorbent type
RE-100H	EM noise shielding material applied on one side of RE-100

Typical Properties

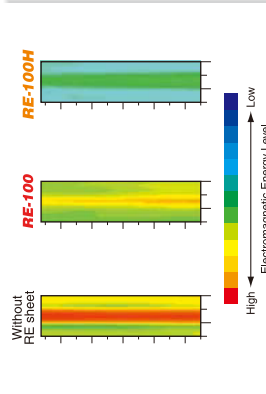
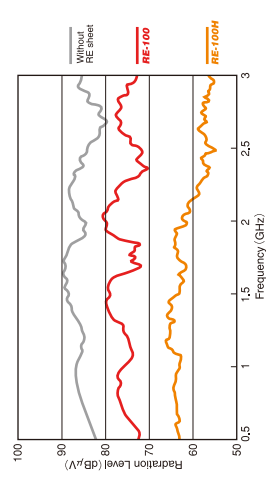
Item	RE-100	RE-100H	Remark
Thermal conductivity (W/m·K)	2.0		—
Our tests Hot Wire Method #1	1.0		JIS R 2616
Hardness (Needle penetration·1/10mm)	60		JIS K 2207
Appearance	Black		—
Specific gravity	2.9		JIS K 6249
Volume resistivity (Ω·cm)	2×10 ¹¹		JIS K 6249
Dielectric breakdown voltage (kV/mm)	4.5	10.0	JIS K 6249
Low molecular weight siloxane level (ppm)	less than 300		—
Solvent extraction method	less than 1		—
Head space ZD4-10 (ppm)			—
Flame retardance	V-1 (0.5~2mmt)	—	UL94
RoHS controlled substances	Not detected		—
Temperature range (°C)	-40~150		—
Other Specification	—	w/Reflective layer and adhesive tape	—



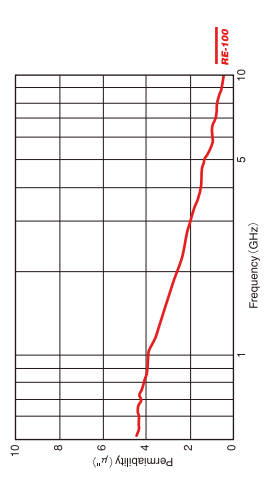
#1 Hot Wire Method: Using the OTM-500 Quick Thermal Conductivity Meter, from Kyoto Electronics Manufacturing Co., Ltd.
#2 Head Space Method: at 70°C



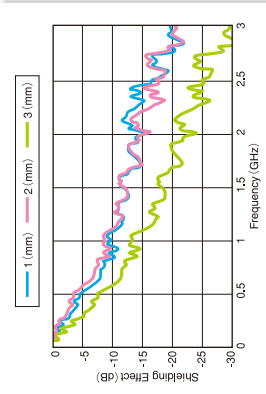
[Electromagnetic Noise Absorption <Microstripline 0.5~3GHz sheet = t1.0mm>]



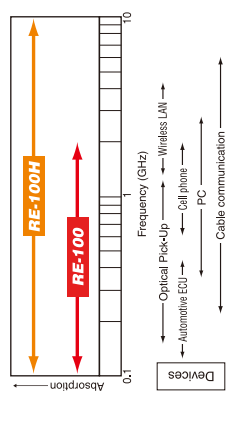
[Electromagnetic Noise Absorption] **RE-100**



[Shielding Effect] **RE-100H**



[Frequency Range]



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[Directions]

- ◆ **RE-100 is protected by the films on both sides.**
 - Slowly peel off one side of the protective film of RE-100.
 - Carefully place the RE-100 sheet on the heat source or heatsink without trapping air.
 - Peel the remaining layer from RE-100 with no air trapped in between the sheet and heat dissipating device or heat generating device.
- ◆ **RE-100H has logo-film on one side and an adhesive tape on the other side.**
 - Peel off the separator on the adhesive tape side, place and fix RE-100H on the enclosure.
 - After fixation, peel off the logo-film, place the heat source or heatsink on RE-100H without trapping air.

[Delivery Format]

[Basic Specifications]

Sheet size	400mm×400mm
Sheet thickness	0.5, 1.0, 2.0, 3.0mm

[Custom Products]
λGEL RE can be tailored for the application by a custom sheet size, thickness, tackiness of the surface, or the kinds of separator films.



Sheet type

Paste type

EM Noise

Siloxane Free

Sheet type

Paste type

EM Noise

Siloxane Free