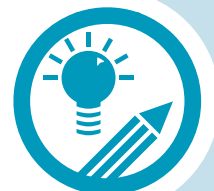
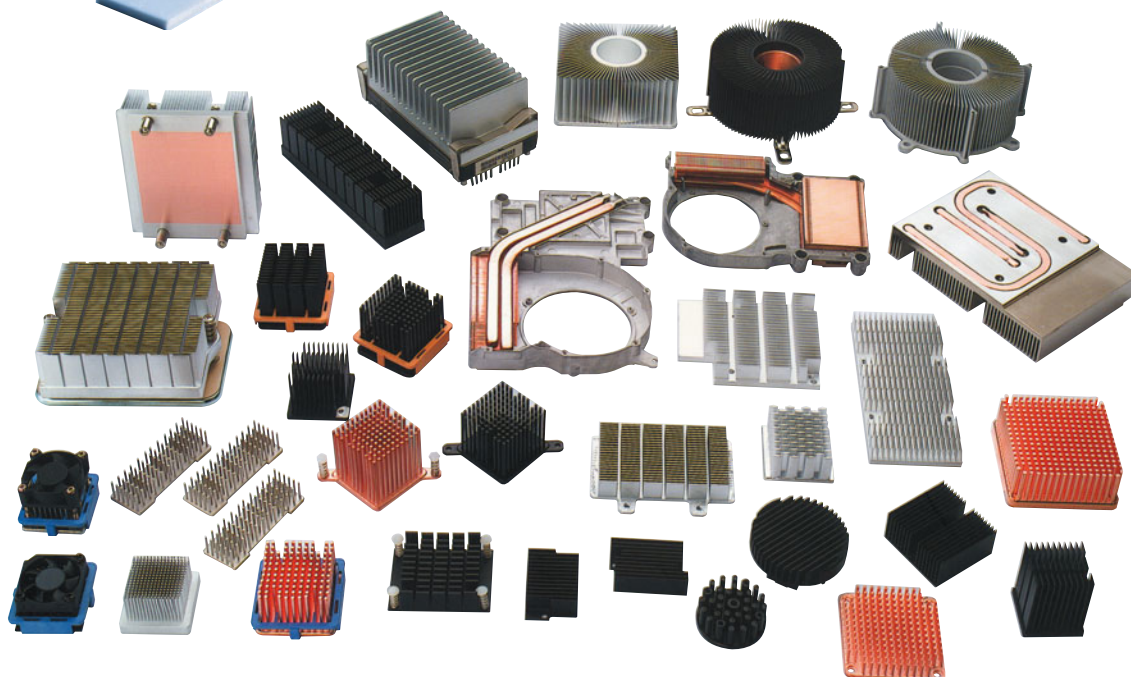
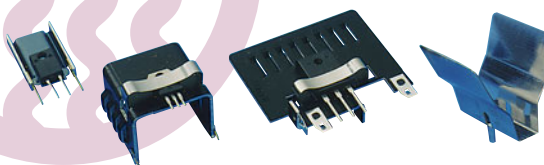
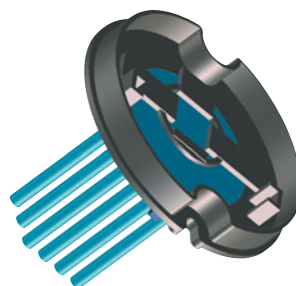
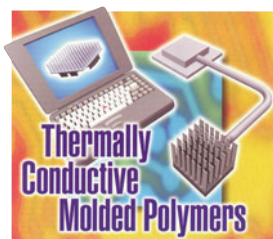
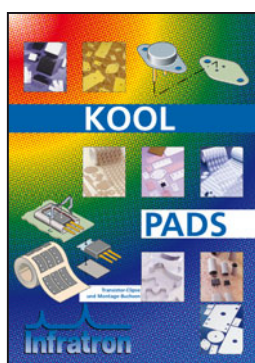
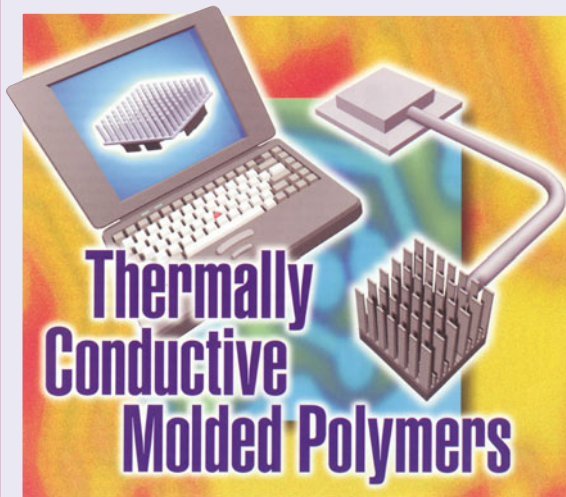


Programmübersicht Wärmeableitung

- Wärmeleitfolien
- Phase Change Materialien
- Gap Filler
- Kühlkörper
- Entwicklungs-Unterstützung



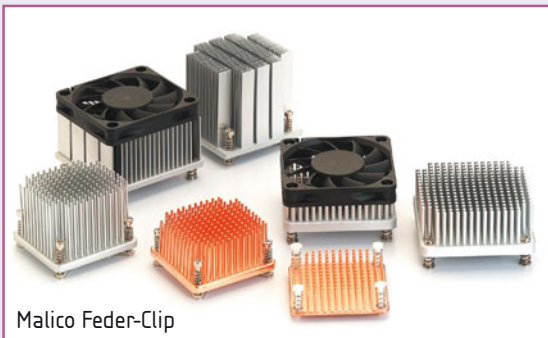
BGA-Kühlung – viele verschiedene Systeme zur Auswahl



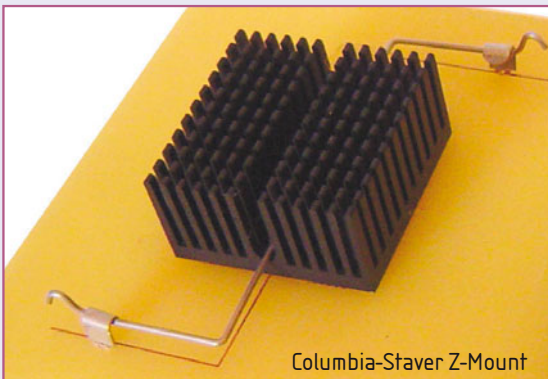
- BGA-Kühlung mit Feder-Clip von Malico
- BGA-Kühlung mit Talon™-Kunststoff-Clips von Malico
- BGA-Kühlung mit Smart Clip™ von Calgreg
- BGA-Kühlung mit Z-Mount von Columbia-Staver
- Kühlkörper als System-Montagen, verschiedene Materialien wie Alu, Cu, Al/Cu, wärmeleitfähige Polymere
- Kool Pads aus dem Infracool-Programm falls gewünscht
- Kundenspezifische Lösungen auch bei kleinen Stückzahlen



Malico Talon™

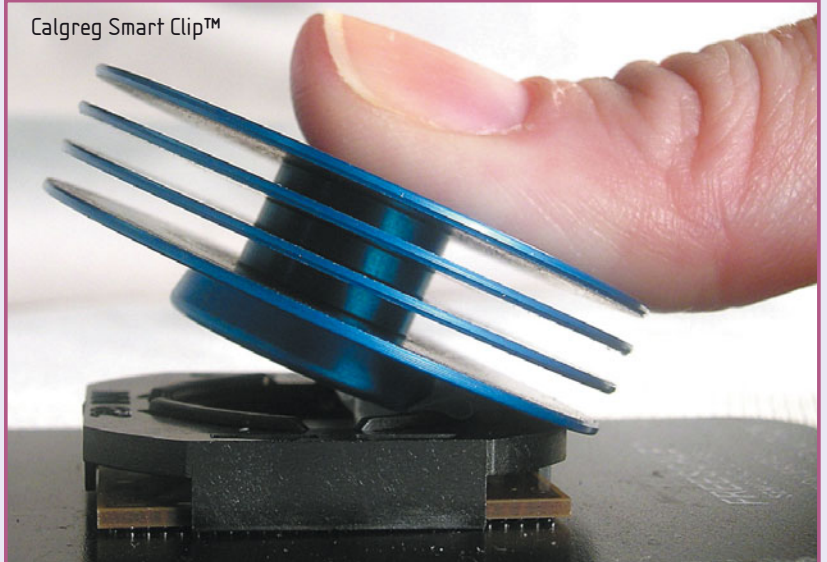


Malico Feder-Clip

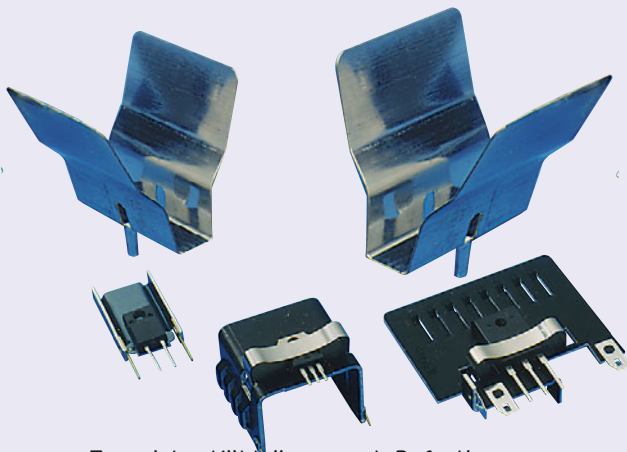


Columbia-Staver Z-Mount

Calgreg Smart Clip™



Andere Kühllösungen und Zubehör



Transistor-Kühlkörper und -Befestigungen sowie Blechteile aller Art, auch sehr kostengünstige kundenspezifische Lösungen.



Zubehör
Clips, Halter, Isolatoren, kundenspezifische Lösungen.

Phase Change Materialien und Wärmeleitpasten



Phase Change Materialien sind wachsähnliche Substanzen, die in einem definierten Temperaturbereich flüssig werden und dadurch alle Spalten und Hohlräume ausfüllen.

Nach der ersten Erwärmung besteht eine stabile thermische Verbindung, sofern ein konstanter Anpressdruck gewährleistet wird.

Erhältlich mit und ohne Trägerfolie, ein- und zweiseitig beschichtet.

Wärmeleitpasten

Product Identification	Units	KG6880	KG62500	KG61500
Thermal Resistance @ 50 psi	$^{\circ}\text{C} \times \text{in}^2/\text{W}$	0.010	0.017	0.020
Thermal Conductivity	$\text{W/m} \times \text{K}$	3.1	3.8	1.2
Viscosity	cP	3,000,000	2,500,000	1,500,000
MAX Operating Temperature	$^{\circ}\text{C}$	150	150	125
Volume Resistivity	@ 100 Volts DC	TBD	3.5×10^{12}	37.0×10^{11}
Dielectric Constant	@ 1KH/1MHz	TBD	5.7 / 5.6	5.9 / 5.8
UL Flammability Rating		94V0	94V0	94V0
Outgassing (TML, CVCM)	%	TBD	0.91, 0.15	0.79, 0.12

Phase Change Materialien

Product Identification	Units	KG7583	KG7HP105	KG7FSF52	KG7905C*
Composition			Free Standing Phase Change Material		
Thermal Resistance @ 50psi	$^{\circ}\text{C} \times \text{in}^2/\text{W}$	0.013	0.028	0.030	0.029
Thickness	mils	3	5	5	5*
Thermal Conductivity	$\text{W/m} \times \text{K}$	3.8	0.73	0.91	0.7
Max Operating Temperature	$^{\circ}\text{C}$	125	125	200	125
Phase Change Temperature	$^{\circ}\text{C}$	50-70	50-70	52	50-70

*Available in multiple thicknesses

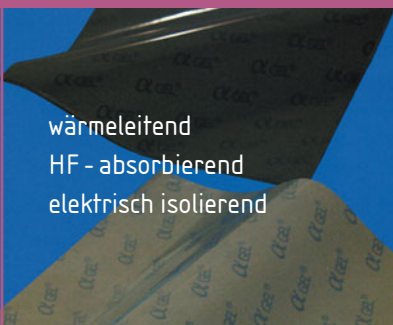
Phase Change Materialien

Product Identification	Units	KG82905*	KG82905C*
Composition		Foil w/ PCM coated on one side	
Thermal Resistance @ 20 psi	$^{\circ}\text{C} \times \text{in}^2/\text{W}$	0.07	0.11
Thickness	mils	5*	5*
Burn In Temperature		70 $^{\circ}\text{C}$ for 5 minutes	70 $^{\circ}\text{C}$ for 5 minutes
Max Operating Temperature	$^{\circ}\text{C}$	125	125
Phase Change Temperature	$^{\circ}\text{C}$	50-70	50-70
Burn In Temperature		70 $^{\circ}\text{C}$ for 5 minutes	70 $^{\circ}\text{C}$ for 5 minutes

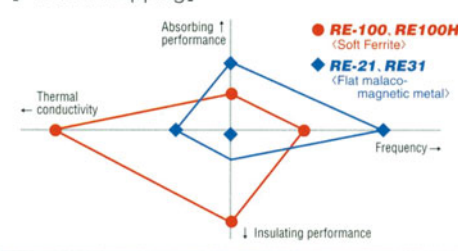
Ideal for reworkability

*Available in multiple thicknesses

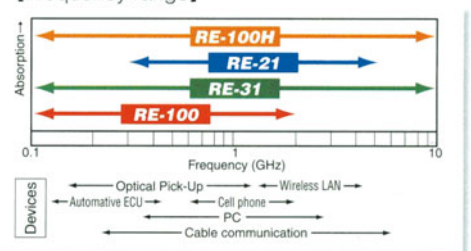
RE Gel – Wärmeableitung plus EMV-Absorption



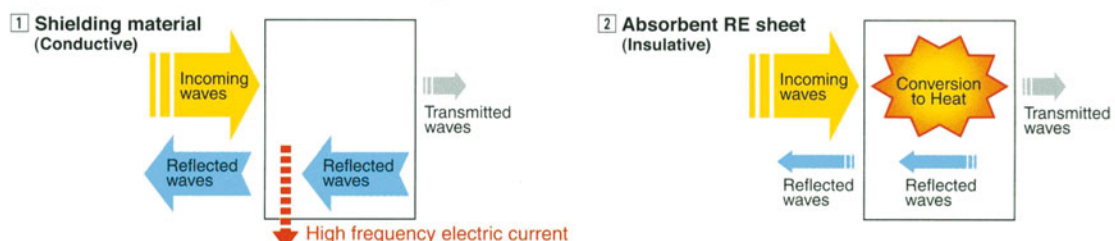
【Product mapping】



【Frequency range】

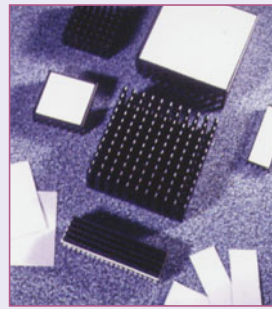
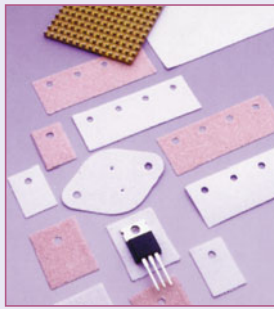


Comparison between the traditional shielding materials and absorbent RE materials:



In either case, transmitted waves can be minimized, but most electromagnetic energy is reflected and stay inside in case of shielding materials unless it is grounded. With the absorbent RE materials, it is absorbed and converted into heat, and therefore interference can be minimized. Also, the absorbent RE materials are insulative while shielding materials are conductive.

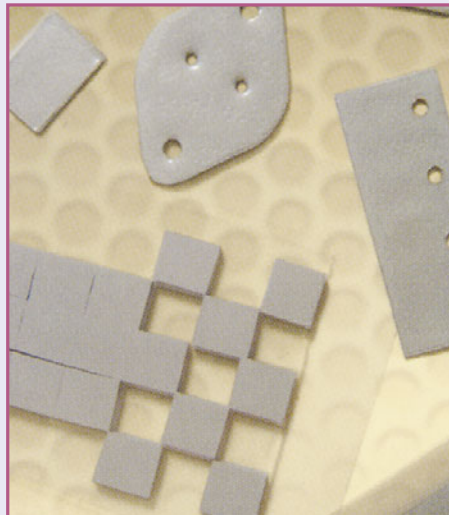
Kool Pads – Wärmeleitfolien



Specification	Units	KG252	KG25000	KG23000	KG2310	KG2500	KG2228
Breakdown Voltage	Volts, AC	6,000	>6,000	>6,000	>6,000	6,000	4,500
Volume Resistivity 50mm probe	Ohm x cm	$>10^{12}$	$>10^{12}$	$>10^{12}$	$>10^{12}$	$>10^{12}$	$>10^{12}$
Thermal Resistance @ 345 kPa (50psi)	°C x cm ² /W	1.48	2.26	2.90	1.30	2.90	5.50
	°C x in ² /W	0.23	0.35	0.45	0.20	0.45	0.85
Thermal Resistance TO-220 @ 345 kPa	°C/W	1.5	2.0	2.4	1.4	2.4	4.4
UL 94 Flame Rating		V0	V0	V0	V0	V0	V0
Temperature Range	°C	-60 - 150	-60 - 180	-60 - 180	-60 - 180	-60 - 180	-60 - 180
Tensile Strength	mPa	93	40	52	5	9.5	16
Elongation	%	85	45	85	5	5	5
Reinforcement		MT Kapton	Polyimide Film	PEN Film	Fiberglass	Fiberglass	Fiberglass
Thickness	mm (inch)	0.076 (0.003)	0.127 (0.005)	0.127 (0.005)	0.254 (0.010)	0.230 (0.009)	0.230 (0.009)
Color		Amber	Tan	Brown	White	Brown	Gray
Standard Roll Size	mm x m	300 x 91	457 x 100	483 x 100	N/A	457 x 50	300 x 100
	in x ft	11.7 x 300	18 x 328	19 x 328	N/A	18 x 165	11.7 x 328
Standard Sheet Size	mm	305 x 305	457 x 457	457 x 457	365 x 406	457 x 457	305 x 305
	inch	12 x 12	18 x 18	18 x 18	14 x 16	18 x 18	12 x 12

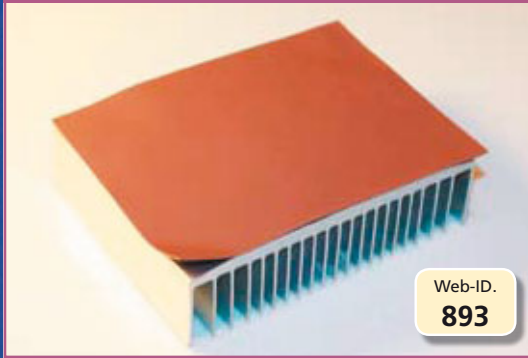
	KG9805	KG9808	KG9810	KG9820	Test Method
Construction & Composition	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite	
Color	Pewter	Pewter	Pewter	Pewter	Visual
Thickness	0.005" (0.13mm)	0.008" (0.20mm)	0.010" (0.25mm)	0.020" (0.51mm)	
Thickness Tolerance	+/- 0.001" (+/- 0.025mm)	+/- 0.001" (+/- 0.025mm)	+/- 0.001" (+/- 0.025mm)	+/- 0.002" (+/- 0.05mm)	
Density	2.20 g/cm ³	2.20 g/cm ³	2.20 g/cm ³	2.20 g/cm ³	Helium Pycnometer
Hardness	85 Shore A	85 Shore A	85 Shore A	85 Shore A	ASTM D2240
Tensile Strength	650 psi	650 psi	650 psi	650 psi	ASTM D412
Outgassing TML	0.15%	0.15%	0.15%	0.15%	ASTM E595
Outgassing CVCM	0.09%	0.09%	0.09%	0.09%	ASTM E595
UL 94 Flame Rating	V0	V0	V0	V0	
Temperature Range	-240°C to 300°C	-240°C to 300°C	-240°C to 300°C	-240°C to 300°C	
Thermal Conductivity	5W/m x K	5W/m x K	5W/m x K	5W/m x K	ASTM D5470 (modified)
Thermal Resistance					
	@ 100 psi 0.07°C x in ² /W @ 681 kPa 0.42°C x cm ² /W	0.09°C x in ² /W 0.57°C x cm ² /W	0.10°C x in ² /W 0.66°C x cm ² /W	0.17°C x in ² /W 1.07°C x cm ² /W	ASTM D5470 (modified)
Volume Resistivity	11 x 10 ⁻⁴ ohm x cm	11 x 10 ⁻⁴ ohm x cm	11 x 10 ⁻⁴ ohm x cm	11 x 10 ⁻⁴ ohm x cm	ASTM D257

Gap Filler Materialien



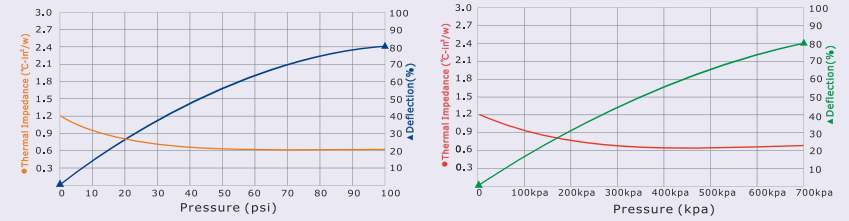
	KG3200	KG3200VO	KG4500	KG4600	KG5 502	KG5 504	Test Method
Construction & Composition	Boron nitride filled silicone sheet	Ceramic filled silicone sheet	Ceramic filled silicone sheet	Boron nitride filled silicone sheet	Reinforced boron nitride filled silicone elastomer	Ceramic filled dispensable silicone gel	
Color	Multiple Colors	Light Gray	Blue	Blue-Violet	White	Light Gray	Visual
Thickness Range	0.010" (0.25mm)–0.20" (5.08mm)	0.020" (0.5mm)–0.20" (5.08mm)	0.020" (0.5mm)–0.20" (5.08mm)	0.020" (0.5mm)–0.20" (5.08mm)	0.020" (0.5mm)–0.20" (5.08mm)	N/A	
Thickness Tolerance	+/- 10%	+/- 10%	+/- 10%	+/- 10%	+/- 10%	N/A	
Density	1.44 g/cm ³	1.73 g/cm ³	3.0 g/cm ³	1.34 g/cm ³	1.38 g/cm ³	2.78 g/cm ³	Helium Pycnometer
Hardness	70 Shore OO	45 Shore OO	40 Shore OO	25 Shore OO	05 Shore OO	N/A	ASTMD2240
Tensile Strength	35 psi	48 psi	66 psi	15 psi	N/A	N/A	ASTMD412
% Elongation	5	63	57	75	N/A	N/A	ASTMD412
Outgassing TML (Post Cured)	0.07%	0.34%	0.29% (not post cured)	0.13%	0.11%	0.34%	ASTME595
Outgassing CVCN (Post Cured)	0.02%	0.10%	0.04% (not post cured)	0.05%	0.06%	0.09%	ASTME595
UL Flammability Rating	94 HB	94 VO	94 VO	94 HB	94 HB	94 VO	E180840
Temperature Range	-45°C to 200°C	-45°C to 160°C	-45°C to 200°C	-45°C to 200°C	-45°C to 200°C	-45°C to 200°C	
Thermal Conductivity	6 W/mK	1.1 W/m x K	2.5 W/m x K	3.0 W/m x K	3.0 W/m x K	1.8 W/m x K	ASTMD5470 (modified)
Thermal Resistance @ 40 mils, 20 psi @ 1mm, 138kPa	0.37°C x in ² /W 2.45°C x cm ² /W	1.57°C x in ² /W 10.13°C x cm ² /W	0.50°C x in ² /W 3.23°C x cm ² /W	0.62°C x in ² /W 4.00°C x cm ² /W	0.49°C x in ² /W 3.16°C x cm ² /W	N/A N/A	ASTMD5470 (modified)
Percent Deflection @ 10 psi	4%	5%	10%	20%	25%	30%	ASTMD575 (modified)
Percent Deflection @ 50 psi	6%	25%	30%	40%	50%	55%	ASTMD575 (modified)
Percent Deflection @ 100psi	10%	40%	45%	60%	75%	85%	ASTMD575 (modified)
Thermal Expansion	51 ppm/°C	229 ppm/°C	37.4 ppm/°C	430 ppm/°C	92 ppm/°C	N/A	IPC-TM-650 2.4.24
Breakdown Voltage	>150 Volts AC/mil	>250 Volts AC/mil	>200 Volts AC/mil	>200 Volts AC/mil	>200 Volts	>500 VAC/mil	ASTMD149
Volume Resistivity	5 x 10 ⁻¹³ ohm x cm	4 x 10 ⁻¹³ ohm x cm	9.6 x 10 ⁻¹³ ohm x cm	2 x 10 ⁻¹³ ohm x cm	5 x 10 ⁻¹³ ohm x cm	>10 ⁻¹⁴ ohm x cm	ASTMD257
Dielectric Constant @ 1MHz	3.2	5.5	13.61	3.31	3.20	N/A	ASTMD150

H48-2 · Thermal Conductive Pad



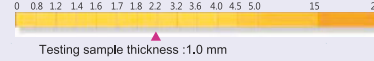
Web-ID.
893

Thermal Resistance V.S Pressure V.S Deflection



Properties

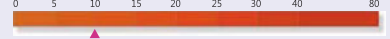
Thermal Conductivity: 2.2 W/m.k
(W / m.k - Z Axis)



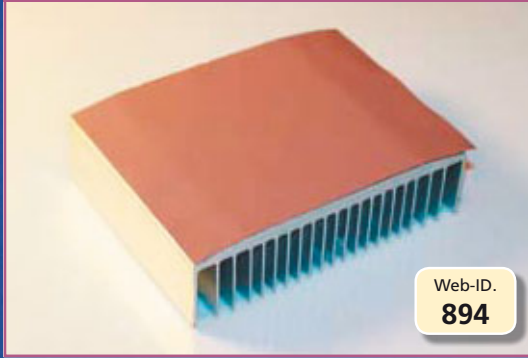
Testing sample thickness : 1.0 mm

REACH Compliant
RoSH Compliant

Hardness: 10 (Shore A)
(Shore A)



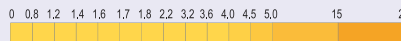
H48-2K · Thermal Conductive Pad



Web-ID.
894

Properties

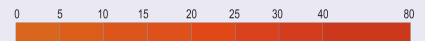
Thermal Conductivity: 1.8 W/m.k
(W / m.k - Z Axis)



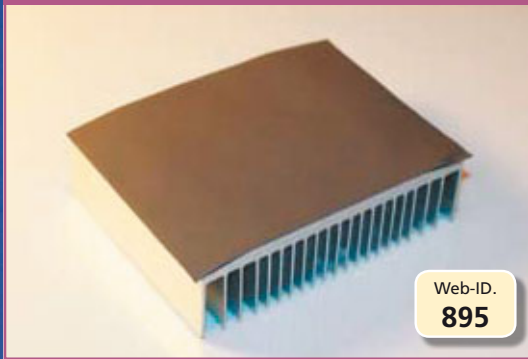
In the thermal resistance vs pressure vs deflection charts H48-2K provides low thermal impedance.
As the pressure increases the thermal impedance decreases. H48-2K provides good compliance and softness.

REACH Compliant
RoHS Compliant

Hardness: 60 (Shore A)
(Shore A)

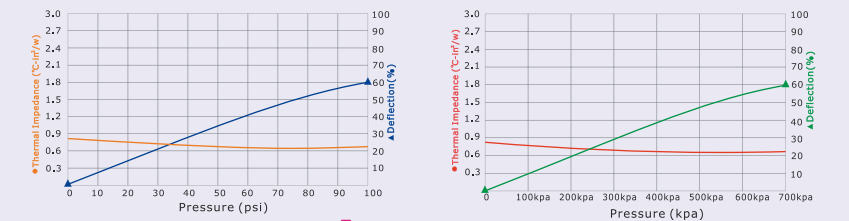


H48-6 · Thermal Conductive Pad



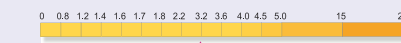
Web-ID.
895

Thermal Resistance V.S Pressure V.S Deflection



Properties

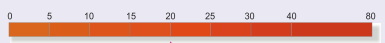
Thermal Conductivity: 3.2 W/m.k
(W / m.k - Z Axis)



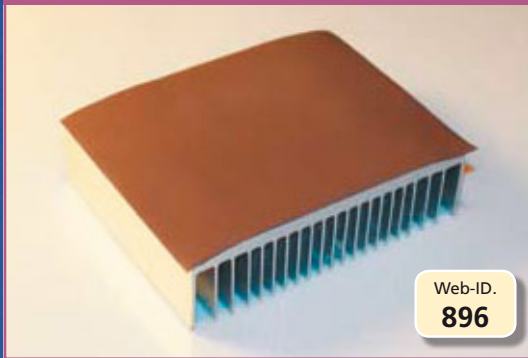
Testing sample thickness : 1.0 mm

REACH Compliant
RoHS Compliant

Hardness: 20 (Shore A)
(Shore A)

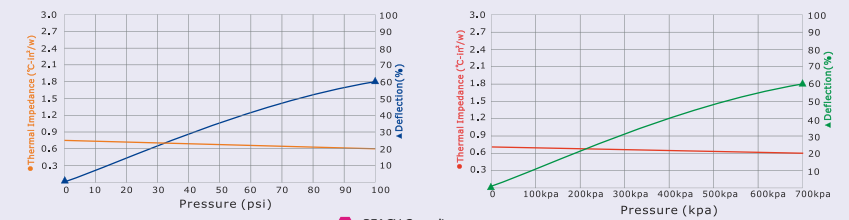


H48-6A · Thermal Conductive Pad



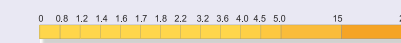
Web-ID.
896

Thermal Resistance V.S Pressure V.S Deflection



Properties

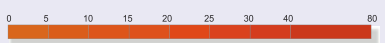
Thermal Conductivity: 4 W/m.k
(W / m.k - Z Axis)



Testing sample thickness : 1.0 mm

REACH Compliant
RoHS Compliant

Hardness: 25 (Shore A)
(Shore A)

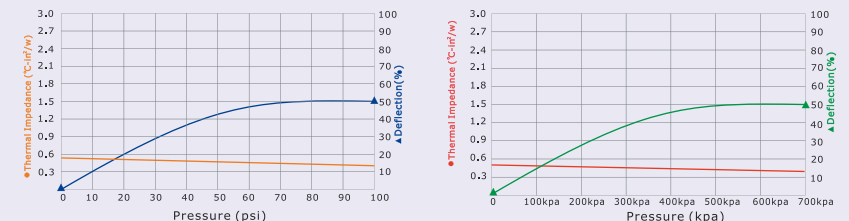


H48-6G · Thermal Conductive Pad



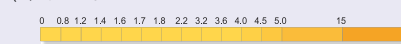
Web-ID.
897

Thermal Resistance V.S Pressure V.S Deflection



Properties

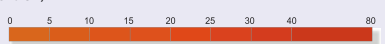
Thermal Conductivity: 6 W/m.k
(W / m.k - Z Axis)



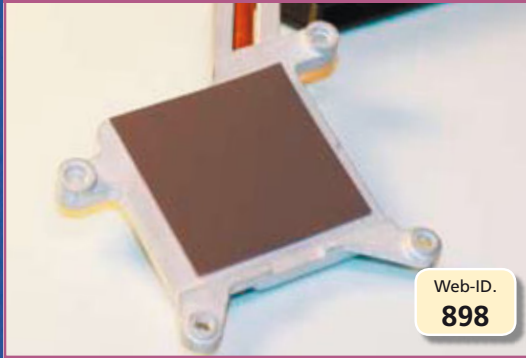
Testing sample thickness : 1.0 mm

REACH Compliant
RoHS Compliant

Hardness: 14 (Shore A)
(Shore A)

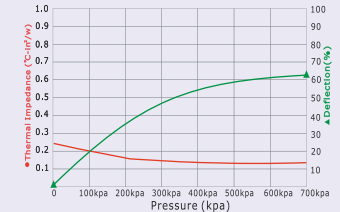
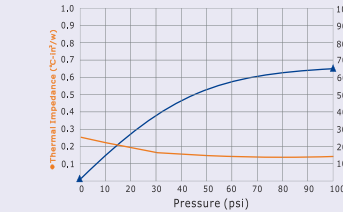


H48-6S · Thermal Conductive Pad



Web-ID.
898

Thermal Resistance V.S Pressure V.S Deflection



Properties

Thermal Conductivity: 1.8 W/m.k

(W / m.k - Z Axis)

REACH Compliant

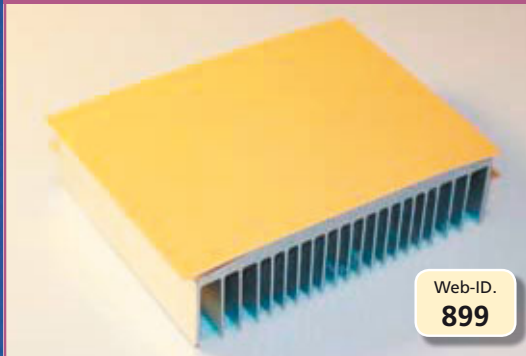
RoSH Compliant

Hardness: 16 (Shore A)

(Shore A)

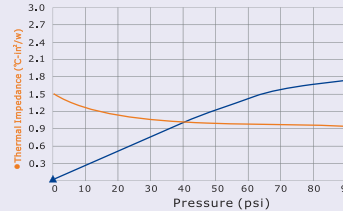
Testing sample thickness : 1.0 mm

L37-3 · Thermal Conductive Pad



Web-ID.
899

Thermal Resistance V.S Pressure V.S Deflection



Properties

Thermal Conductivity: 1.7 W/m.k

(W / m.k - Z Axis)

REACH Compliant

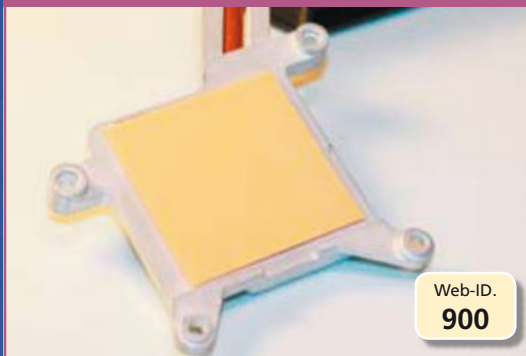
RoHS Compliant

Hardness: 5 (Shore A)

(Shore A)

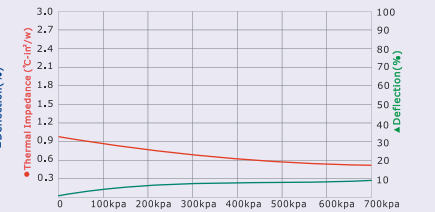
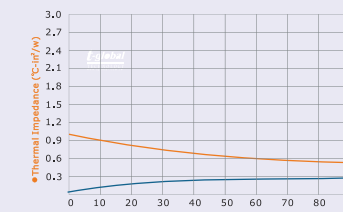
Testing sample thickness : 1.0 mm

L37-3F · Thermal Conductive Pad



Web-ID.
900

Thermal Resistance V.S Pressure V.S Deflection



Properties

Thermal Conductivity: 1.4 W/m.k

(W / m.k - Z Axis)

REACH Compliant

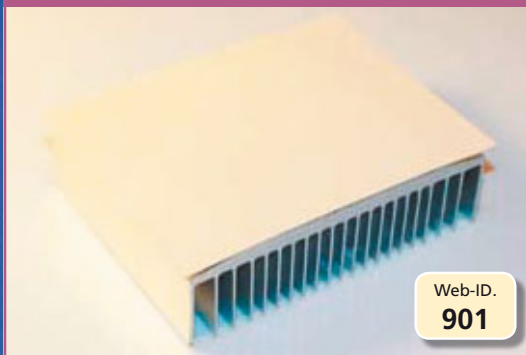
RoHS Compliant

Hardness: 80 (Shore A)

(Shore A)

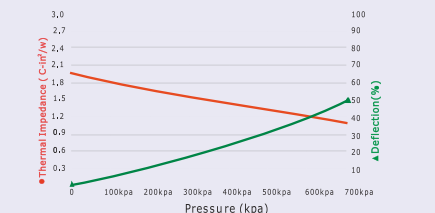
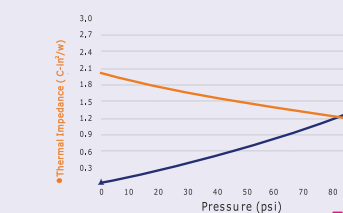
Testing sample thickness : 0.25 / 0.3 / 0.45mm

L37-3L · Low Bleed Thermal Pad



Web-ID.
901

Thermal Resistance V.S Pressure V.S Deflection



Properties

Thermal Conductivity: 1.5 W/m.k

(W / m.k - Z Axis)

REACH Compliant

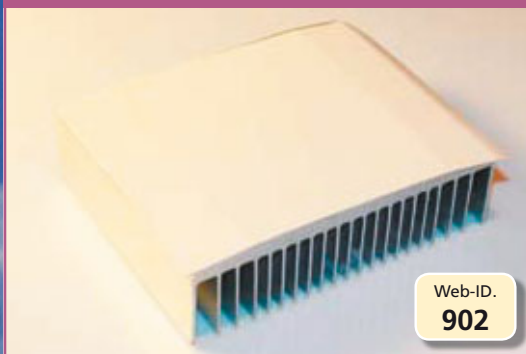
RoHS Compliant

Hardness: 15 (Shore A)

(Shore A)

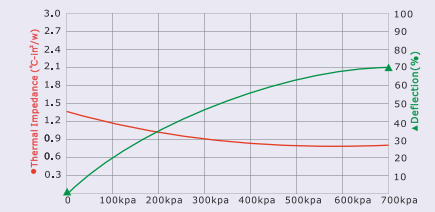
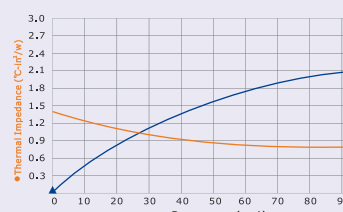
Testing sample thickness: 1.0 mm

L37-3S · Thermal Conductive Pad



Web-ID.
902

Thermal Resistance V.S Pressure V.S Deflection



Properties

Thermal Conductivity: 1.95 W/m.k

(W / m.k - Z Axis)

REACH Compliant

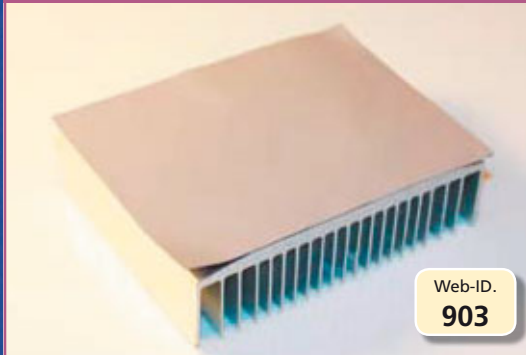
RoHS Compliant

Hardness: 5 (Shore A)

(Shore A)

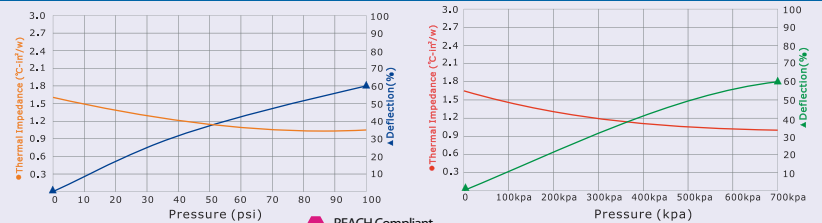
Testing sample thickness : 1.0 mm

L37-5 · Thermal Conductive Pad



Web-ID.
903

Thermal Resistance V.S Pressure V.S Deflection



Properties

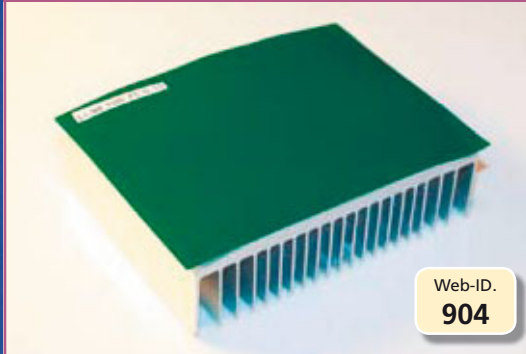
Thermal Conductivity: 1.6 W/m.k
(W / m.k - Z Axis)

Hardness: 15 (Shore A)
(Shore A)

Testing sample thickness : 1.0 mm

REACH Compliant
RoHS Compliant

Li-98 · Thermal Tape

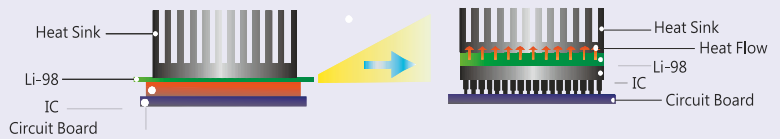


Web-ID.
904

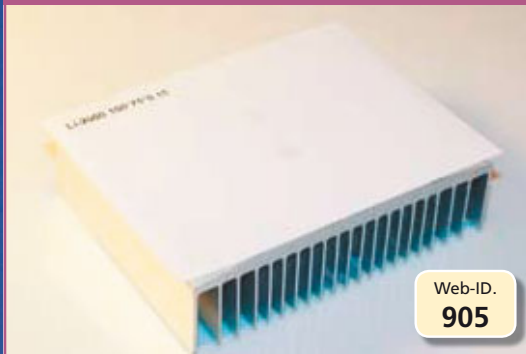
Properties

Thermal Conductivity: 0.95 W/m.k
(W / m.k - Z Axis)

REACH Compliant
RoHS Compliant



Li-2000 · Thermal Tape

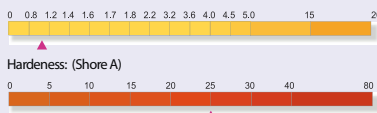


Web-ID.
905

Properties

Thermal Conductivity: 1.0 W/m.k

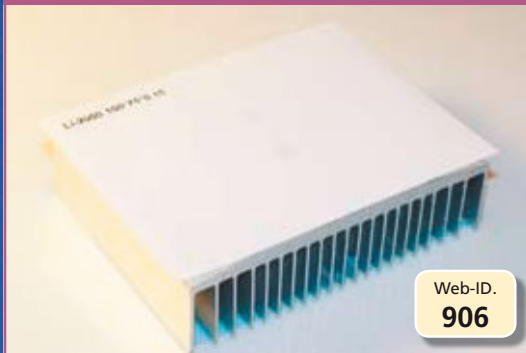
Thermal Resistance V.S Pressure V.S Deflection



REACH Compliant
RoHS Compliant



Li-2000A · Thermal Tape

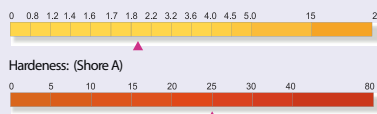


Web-ID.
906

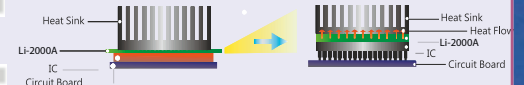
Properties

Thermal Conductivity: 1.9 W/m.k

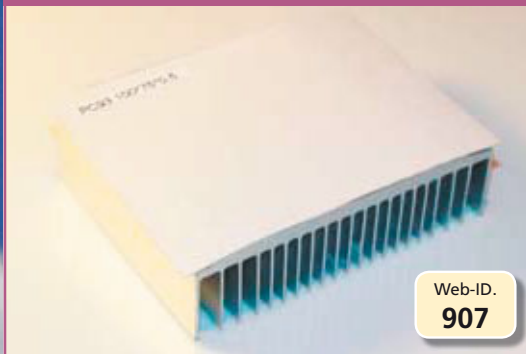
Thermal Resistance V.S Pressure V.S Deflection



REACH Compliant
RoHS Compliant

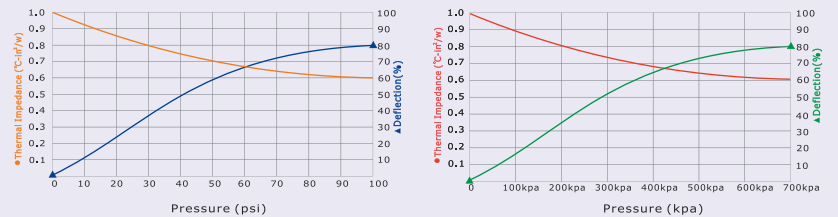


PC93 · Non-Silicone Thermal Conductive Pad



Web-ID.
907

Thermal Resistance V.S Pressure V.S Deflection



Properties

Thermal Conductivity: 2 W/m.k
(W / m.k - Z Axis)

Hardness: 60 (Shore 00)
(Shore 00)

Testing sample thickness : 1.0 mm

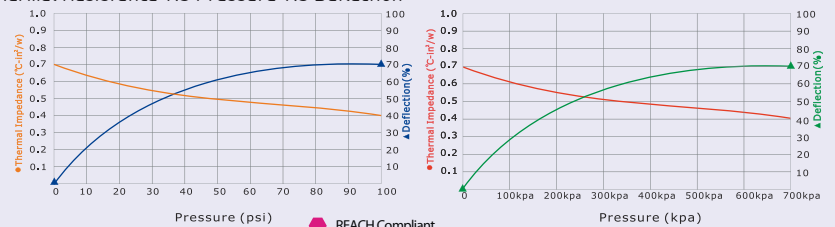
REACH Compliant
RoHS Compliant

PC94 · Non-Silicone Thermal Conductive Pad



Web-ID.
908

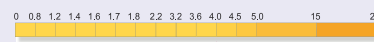
Thermal Resistance V.S Pressure V.S Deflection



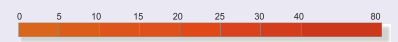
Properties

Thermal Conductivity: 4 W/m.k
(W / m.k - Z Axis)

Hardness: 60 (Shore 00)
(Shore 00)



Testing sample thickness : 1.0 mm



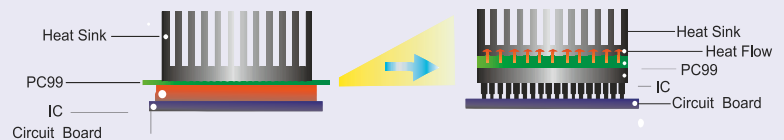
PC99 · Phase Change Material



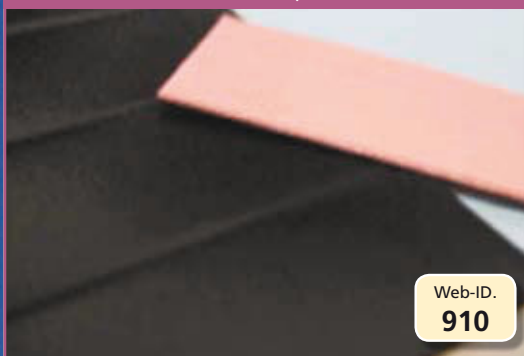
Web-ID.
909

Properties

REACH Compliant
RoHS Compliant



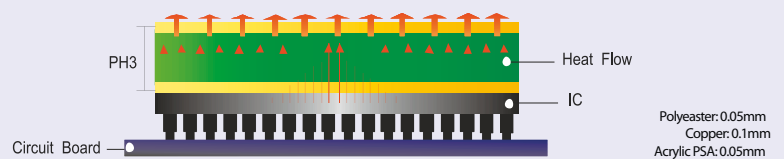
PH3 · Heat Spreader



Web-ID.
910

Properties

REACH Compliant
RoHS Compliant



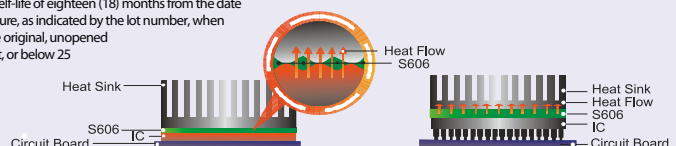
S606 · Thermal Compound



Web-ID.
911

Storage

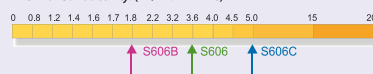
S606 has a self-life of eighteen (18) months from the date of manufacture, as indicated by the lot number, when stored in the original, unopened container at, or below 25°C.



Properties

REACH Compliant
RoHS Compliant

Thermal Conductivity: (W / m.k - Z Axis)



S606B Thermal Conductivity 1.8 W/m.k
S606 Thermal Conductivity 3.6 W/m.k
S606C Thermal Conductivity 5.0 W/m.k

Ti900 · Thermally Conductive Insulators



Web-ID.
917

Properties

	Ti900	Test Methods
Viscose	One Side	ASTM D374
Thickness (mm)	0.12	-
Base	RITF	-
Thermal Conductivity w/m K*1	1.8	ASTM D5470
Thermal Resistance @ 10psi (K in ² / W)	0.50	ASTM D5470
Thermal Resistance @ 30psi (K in ² / W)	0.42	ASTM D5470
Thermal Resistance @ 50psi (K in ² / W)	0.35	ASTM D5470
Thermal Resistance @ 100psi (K in ² / W)	0.29	ASTM D5470
Thermal Resistance @ 200psi (K in ² / W)	0.28	ASTM D5470
Thermal Resistance @ 400psi (K in ² / W)	0.27	ASTM D5470
Insulation Strength Vac, V	>6000	ASTM D149
Volume resistance Ohm-cm	>10 ¹²	ASTM D257
Working Temperature	-50 to 180	°C
Tensile Strength	5000 psi	ASTM D412
Elongation	40%	ASTM D412
Flame rating UL	Pending (as V-0)	UL94

T62 · Graphite Sheets

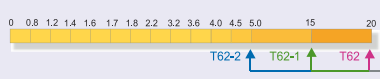


Web-ID.
912

Properties

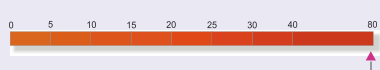
REACH Compliant
RoHS Compliant

Thermal Conductivity: (W / m.k - Z Axis)

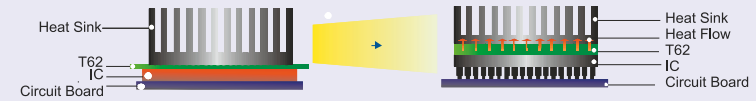


T62-2 Thermal Conductivity 5.0 W/m.k
T62-1 Thermal Conductivity 15.0 W/m.k
T62 Thermal Conductivity 20.0 W/m.k

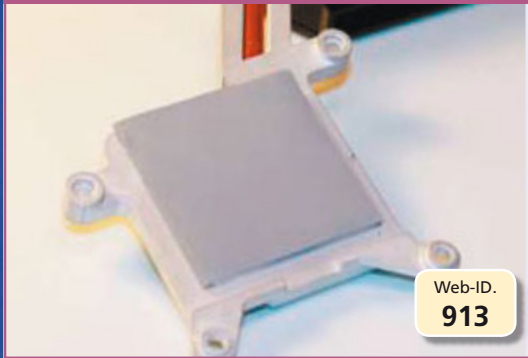
Hardness: 80 (Shore A)
(Shore A)



T62-2 Hardness 80 (Shore A)
T62-1 Hardness 80 (Shore A)
T62 Hardness 80 (Shore A)

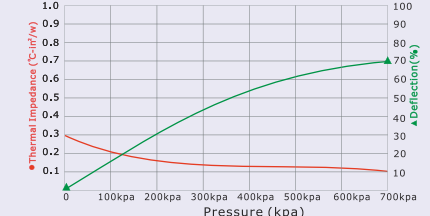
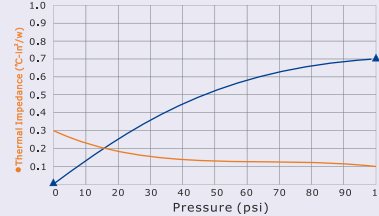


TG-X · Ultra Soft Thermal Conductive Pad



Web-ID.
913

Thermal Resistance V.S Pressure V.S Deflection

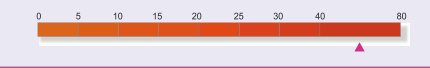
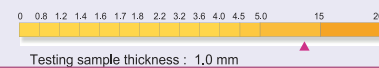


Properties

REACH Compliant
RoHS Compliant

Thermal Conductivity: 1.0 W/m.k
(W / m.k - Z Axis)

Hardness: 60 (Shore 00)
(Shore 00)



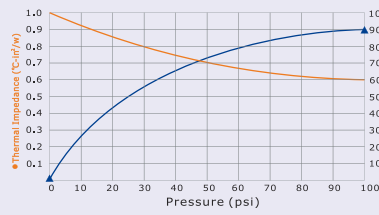
Testing sample thickness : 1.0 mm

TG2030 · Ultra Soft Thermal Conductive Pad



Web-ID.
914

Thermal Resistance V.S Pressure V.S Deflection

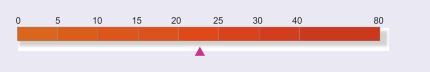


Properties

REACH Compliant
RoHS Compliant

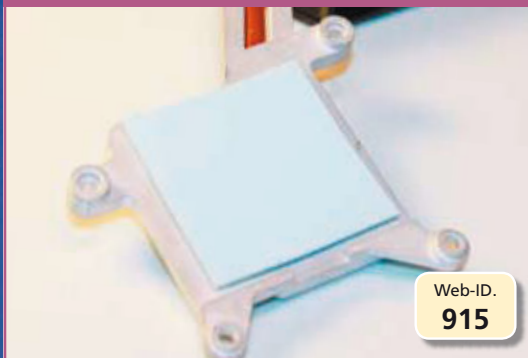
Thermal Conductivity: 2.0 W/m.k
(W / m.k - Z Axis)

Hardness: 30 (Shore 00)
(Shore 00)



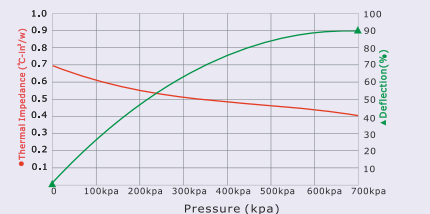
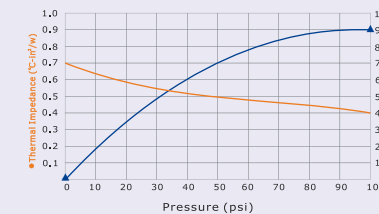
Testing sample thickness : 1.0 mm

TG4040 · Ultra Soft Thermal Conductive Pad



Web-ID.
915

Thermal Resistance V.S Pressure V.S Deflection

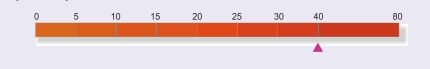
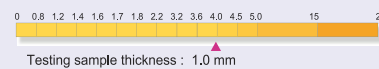


Properties

REACH Compliant
RoHS Compliant

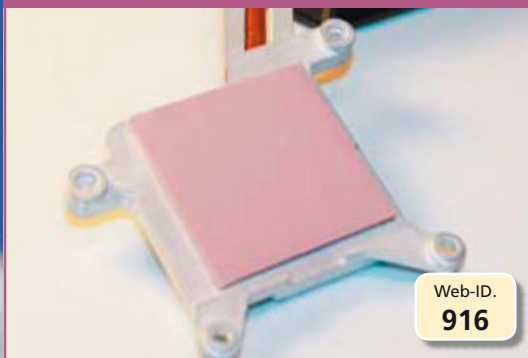
Thermal Conductivity: 4.0 W/m.k
(W / m.k - Z Axis)

Hardness: 40 (Shore 00)
(Shore 00)



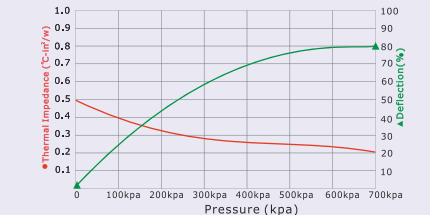
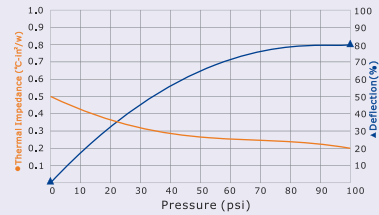
Testing sample thickness : 1.0 mm

TG6050 · Ultra Soft Thermal Conductive Pad



Web-ID.
916

Thermal Resistance V.S Pressure V.S Deflection

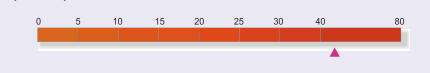
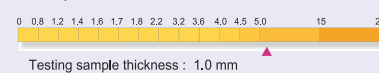


Properties

REACH Compliant
RoHS Compliant

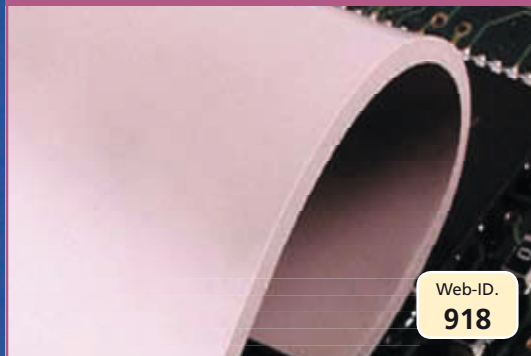
Thermal Conductivity: 6.0 W/m.k
(W / m.k - Z Axis)

Hardness: 50 (Shore 00)
(Shore 00)



Testing sample thickness : 1.0 mm

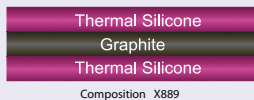
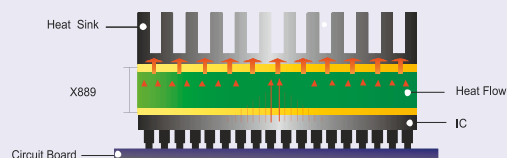
X889 · Composite Material



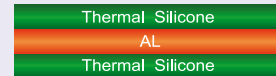
Web-ID.
918

Properties

- REACH Compliant
- RoHS Compliant

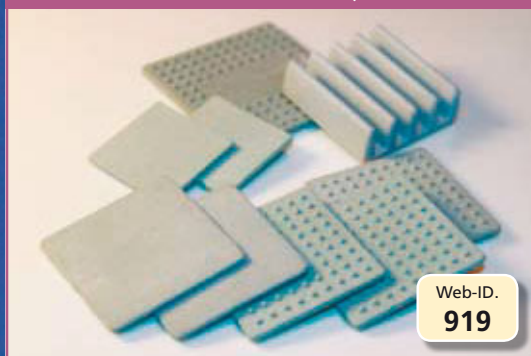


Composition X889



Composition X889-1

XL-25 · Ceramic Heat Spreader

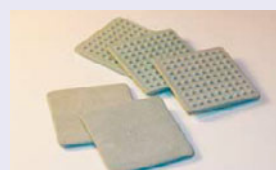
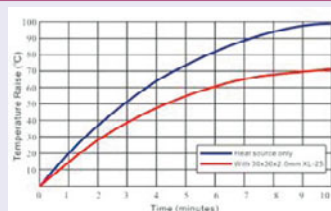


Web-ID.
919

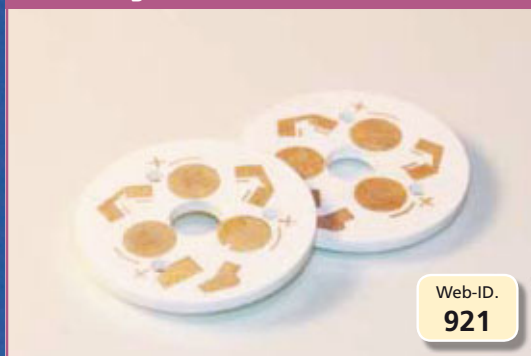
Standard sizes (mm)

- 10 x 10 x 2.0
- 20 x 20 x 2.0
- 30 x 30 x 2.0
- 40 x 40 x 2.0
- 40 x 40 x 3.0
- 40 x 40 x 3.0
- 50 x 50 x 3.0

Used examples: Heat sources with XL-25



LED · High Power LED Ceramic Core PCB

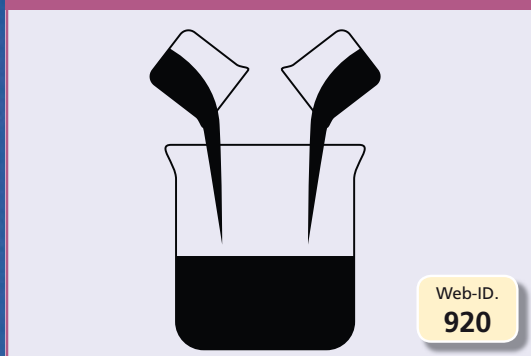


Web-ID.
921

Properties

Functional Characteristics	CP-20	CP-57
Insulation Resistance	>100G (1000VDC, 1 minute)	>10G (1000VDC, 1 minute)
Dielectric with standing voltage	Ok (1500VAC, 60 HZ, 1 minute)	Ok (1500VAC, 60HZ, 1 minute)
Thermal Conductivity	≥ 8W/mk	≥ 10W/mk
Solder Heat Resistance	300 °C / 5 sec	300 °C / 5 sec
Electrode Tensile Strength	> WB 20N (2Gf)	> WB 20N (2Gf)
Density	≥ 3.2g/cm ³	≥ 2.5g/cm ³
Porosity	≥ 15%	≥ 15%
RoHS Compliant	Yes	Yes
Bending Strength	> WB 100N (10KGf)	> WB 100N (10KGf)
Dimension	Ø20mm (2.0mm)x t2.0mm (max)	Ø53mm (2.0mm)x t2.0mm (max)

A96AB · Thermal Conductive Gel

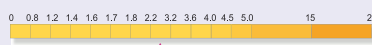


Web-ID.
920

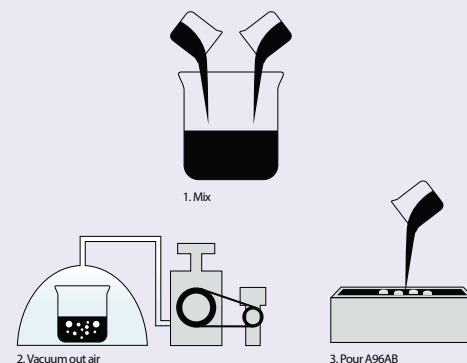
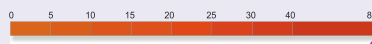
Properties

- REACH Compliant
- ROSH Compliant

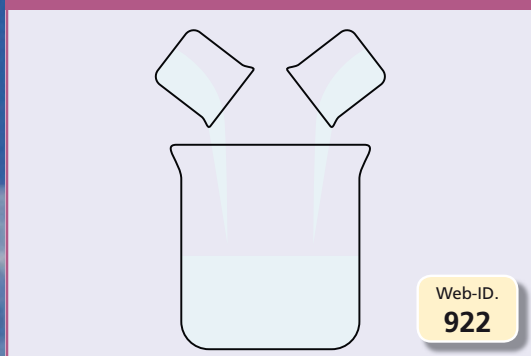
Thermal Conductivity: 2.5 W/m.k
(W/m.k - Z Axis)



Hardness: 80 (Shore A)
(Shore A)



S720AB · Thermal Conductive Gel

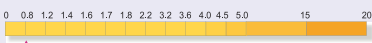


Web-ID.
922

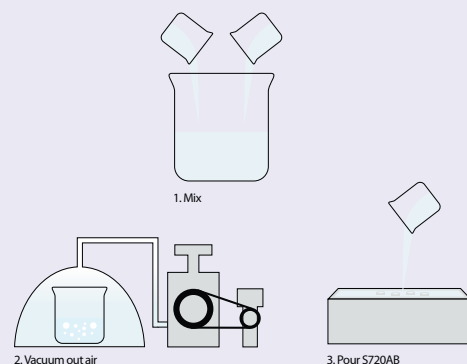
Properties

- REACH Compliant
- ROSH Compliant

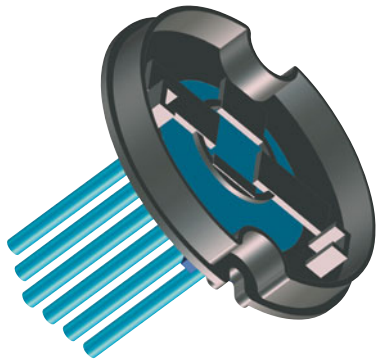
Thermal Conductivity: 0.8 W/m.k
(W / m.k - Z Axis)



Hardness: 40-50 (Shore A)
(Shore A)



Entwicklungs-Unterstützung



Die Zusammensetzung unseres regulären Lieferprogramms spiegelt langjährige Erfahrungen mit dem Bedarf unserer Kunden wieder. Viele Ihrer Entwicklungsaufgaben können wir mit unseren Standardlösungen wirkungsvoll unterstützen. Häufig besteht aber auch die Notwendigkeit, kundenspezifische Anpassungen bestehender Lösungen oder völlig neue Lösungen zu kreieren. Hierfür bieten wir Ihnen **verschiedene Stufen der Unterstützung** an: von der produktspezifischen Beratung durch unsere Applikationsingenieure über die Unterstützung durch Produktspezialisten in den Werken bis hin zur Auftragsentwicklung und -fertigung.



Unter Verwendung hoch innovativer, aber gut erschlossener Technologien bieten wir Ihnen kreative Problemlösungen. Unsere Spezialitäten sind u.a.

- Auslegung und Verarbeitung wärmeleitender Kunststoffe
- thermodynamische Optimierung von Kühlkörpern
- klebefähige Oberflächen
- lötfähige und vorbelotete Oberflächen
- Kühlkörper mit Halbleitervormontage
- angespritzte Gehäusetechnik
- kunststoffverträgliche Löttechnologie
- lötverträgliche Kunststofftechnik



In aufbautechnischen Schnittstellen können wir häufig erhebliches Optimierungspotential freisetzen.

Das Resultat:

Leistungssteigerung
Miniaturisierung
Stressreduktion
Kostensenkung

LED-Kühlung



Für mehr Informationen nehmen Sie bitte Kontakt mit uns auf:

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