



TIM

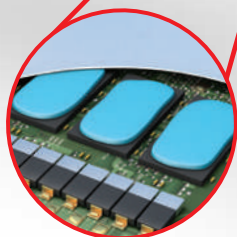
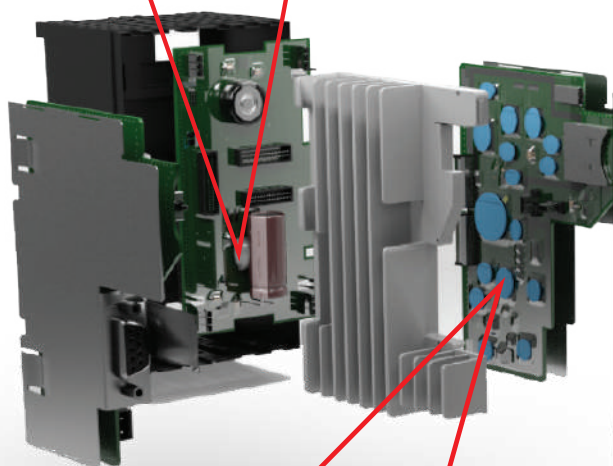
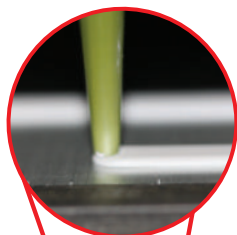
Thermal Interface Materials



4	THERMAL CONDUCTIVE PRODUCTS
6	SIL PAD®
7	GAP PAD®
8	HI-FLOW®
9	BOND-PLY®
10	GAP FILLER®
11	LIQUI-BOND®
12	LOCTITE® THERMALLY CONDUCTIVE GREASES
13	CONVERTING

ADESIVI TERMOCONDUTTIVI

Thermally conductive adhesives

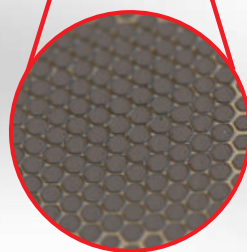
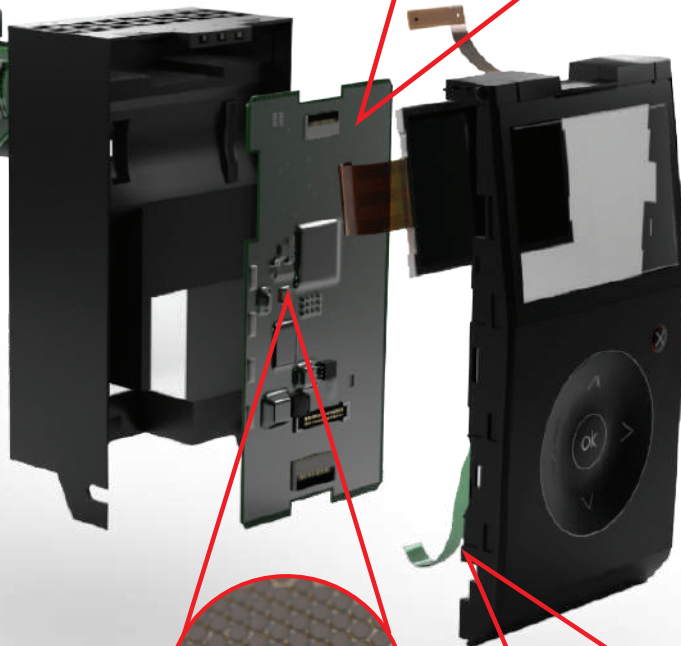
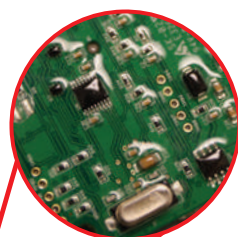


MATERIALI GAP FILLER

Gap Filler materials

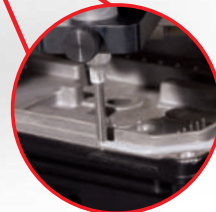
MATERIALI DI RIVESTIMENTO CONFORMI

Conformal coating materials



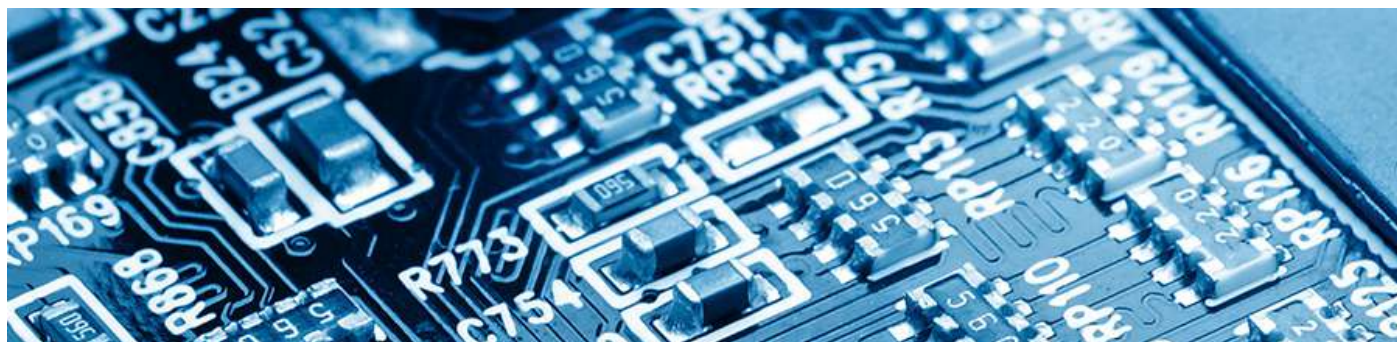
MATERIALI A CAMBIAMENTO DI FASE

Phase change materials



MATERIALI SIGILLANTI

Gasketing materials



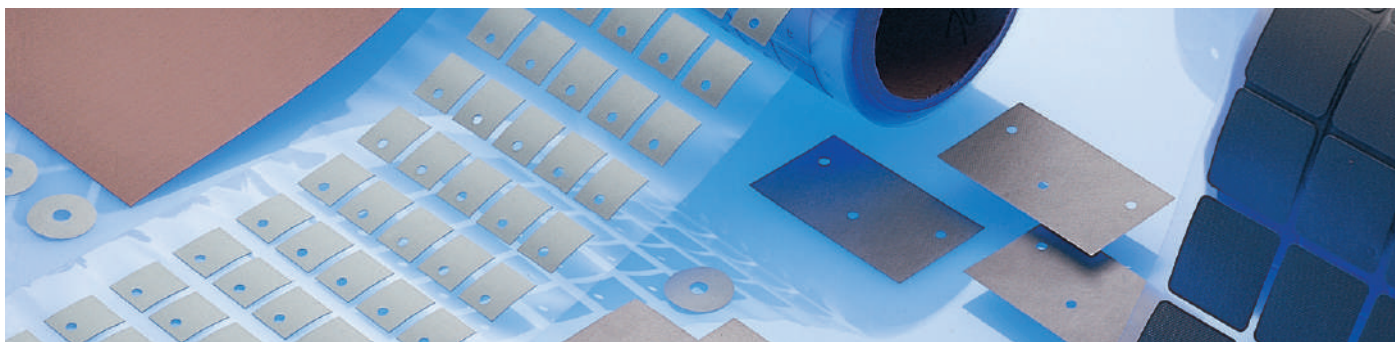
ADHESIVES

TAPES	FILMS		LIQUIDS			
	Thermally Conductive	Thermally and Electrically Conductive				
			Heat Cure		Room Temperature Cure	
BERGQUIST BOND-PLY TBP 850	LOCTITE ABLESTIK 506	LOCTITE ABLESTIK 5025E	LOCTITE ABLESTIK 5404	LOCTITE ABLESTIK 8700K	LOCTITE 315*	LOCTITE 383*
BERGQUIST BOND-PLY TBP 800	LOCTITE ABLESTIK 561K	LOCTITE ABLESTIK CF 3350	LOCTITE ABLESTIK QMI529HT	LOCTITE ABLESTIK E 3503-1	LOCTITE 3873*	LOCTITE 384*
BERGQUIST BOND-PLY TBP 1400LMS-HD	LOCTITE ABLESTIK 563K	LOCTITE ABLESTIK ECF 561E	LOCTITE ABLESTIK QMI536HT	LOCTITE ABLESTIK TE 3530		LOCTITE 3874*
				BERGQUIST LIQUI-BOND TLB SA1000		BERGQUIST LIQUI-BOND TLB EA1800
				BERGQUIST LIQUI-BOND TLB SA2000	*Needs Thermally Conductive Activator LOCTITE 7387	



NON-ADHESIVES

THIN PADS		GAP FILLERS		PHASE-CHANGE MATERIALS		GREASES
Electrically Insulating	Non-electrically Insulating	Pads	Liquids	Pads	Liquids	
BERGQUIST SIL PAD TSP 900	BERGQUIST SIL PAD TSP Q2500	BERGQUIST GAP PAD TGP 1000VOUS	BERGQUIST GAP FILLER TGF 1000SR	BERGQUIST HI-FLOW THF 1600P	LOCTITE TCP 4000 SERIES	LOCTITE TC 4
BERGQUIST SIL PAD TSP 1600S	BERGQUIST SIL PAD TSP Q2000	BERGQUIST GAP PAD TGP 1000SF	BERGQUIST GAP FILLER TGF 1500	BERGQUIST HI-FLOW THF 5000UT	LOCTITE TCP 7000	LOCTITE TC 8M
BERGQUIST SIL PAD TSP 1100ST		BERGQUIST GAP PAD TGP 1100SF	BERGQUIST GAP FILLER TGF 1500LVO	BERGQUIST HI-FLOW THF 1500P		LOCTITE TCP 8175M1
BERGQUIST SIL PAD TSP 1800		BERGQUIST GAP PAD TGP 1500	BERGQUIST GAP FILLER TGF 3500LVO	LOCTITE EIF 1000		LOCTITE TG 100
BERGQUIST SIL PAD TSP 1800ST		BERGQUIST GAP PAD TGP 1500R	BERGQUIST GAP FILLER TGF 3600	LOCTITE TCF 1000		
BERGQUIST SIL PAD TSP 3500		BERGQUIST GAP PAD TGP 2200SF	BERGQUIST GAP FILLER TGF 4000	LOCTITE TCF 2000 AF		
BERGQUIST SIL PAD K-10		BERGQUIST GAP PAD TGP 3004SF	BERGQUIST LIQUI-FORM TLF LF5500	LOCTITE TCF 4000 PXF		
		BERGQUIST GAP PAD TGP 3500ULM				
		BERGQUIST GAP PAD TGP HC3000				
		BERGQUIST GAP PAD TGP HC5000				



Quasi 40 anni fa Bergquist brevettò la prima interfaccia termica elastomerica a base siliconica con il nome di SIL PAD®. Da allora a oggi la famiglia si è arricchita di altri prodotti, necessari a fronteggiare le criticità sempre più frequenti in un mercato dell'elettronica in rapidissimo cambiamento. Gli isolatori termoconduttivi SIL PAD®, in una grande varietà di applicazioni, continuano ad essere alternative pulite, efficienti e affidabili rispetto ai grassi termici.

Almost 40 years ago Bergquist set the standard of the first silicone-based elastomeric thermal interface material with the name of SIL PAD®. Since then, the family has been enriched with more products necessary to meet the needs of a rapidly changing electronic market. The SIL PAD® thermally conductive insulators continue to be a clean, efficient and reliable alternative to thermal grease solution for a wide range of applications.

PRODUCT	DESCRIPTION	Color	Thickness (mils/mm)	Hardness (Shore A) ASTM D2240	Thermal Conductivity (W/m*K) ASTM D5470	Thermal Impedance @ 50psi/[3.5 Kg/cm²] (°C*in²/W) (°C*cm²/W) ASTM D5470	Dielectric Breakdown Voltage (V AC) ASTM D149
Sil Pad 400 (TSP 900)	Thermally conductive insulator with fiberglass reinforcing, progenitor of the Sil Pad series.	Grey	7 / 0.18	85	0.9	1.13 / 7.29	3500
			9 / 0.23			1.45 / 9.35	4500
Sil Pad 800 (TSP 1600)	High thermal performances Pad, fiberglass reinforced and with very thin thickness.	Gold	5 / 0.13	91	1.6	0.45 / 2.90	3000
Sil Pad 900S (TSP 1600S)	The "General-Purpose" thermal conductive insulation material suitable for all power applications.	Pink	9 / 0.23	92	1.6	0.61 / 3.94	5500
Sil Pad A1500 (TSP A2000)	Pad with fiberglass reinforcement. It combines an excellent electrical insulation with a low thermal resistance.	Green	10 / 0.25	80	2.0	0.42 / 2.71	6000
Sil Pad K6 (TSP K1100)	Pad with polyimide base (Kapton). It guarantees an excellent thermal insulation and good thermal performances.	Dark Green	6 / 0.15	90	1.1	0.49 / 3.17	6000
Sil Pad K10 (TSP K1300)	Pad with polyimide base (Kapton). It guarantees an excellent thermal insulation and good thermal performances.	Beige	6 / 0.15	90	1.3	0.41 / 2.65	6000



Le interfacce termiche GAP PAD® sono state sviluppate con l'obiettivo di fornire agli specialisti dell'elettronica un prodotto decisamente morbido e conformabile che garantisca un eccellente scambio di calore tra PCB/componenti e dissipatore. La vasta gamma di spessori disponibili favorisce l'utilizzo dei GAP PAD® in tutti quei contesti in cui vi è la necessità di utilizzare un'unica interfaccia termica per componenti con altezze differenti sulla scheda o di recuperare le tolleranze di assemblaggio.

The GAP PAD® thermal interface solutions are designed to offer to the electronic experts a very soft and conformable product that guarantees an excellent heat exchange between PCB/components and dissipator. With a wide range of thicknesses available, the GAP PAD® series is suitable for all the applications where a unique thermal interface with different heights on board or the recovery of assembly tolerances are required.

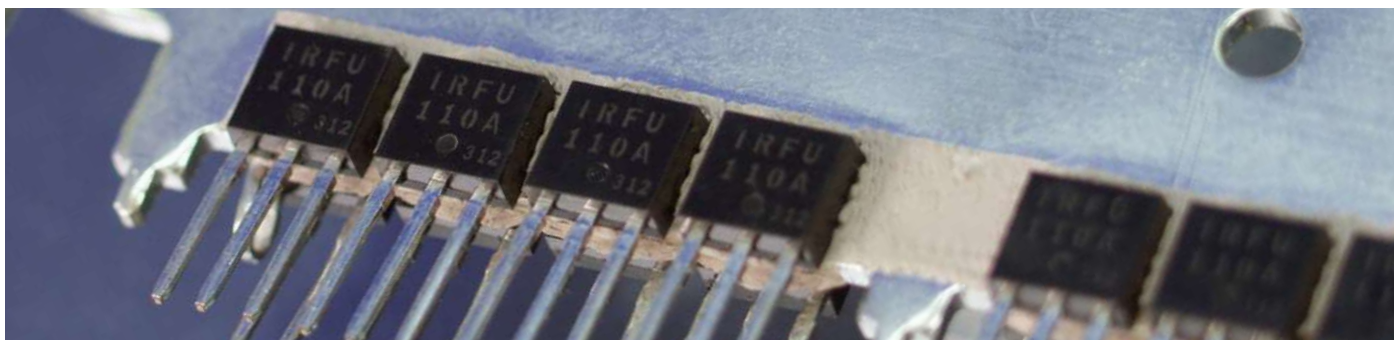
PRODUCT	DESCRIPTION	Color	Thickness (mils/mm)	Hardness (Shore 00) ASTM D2240	Thermal Conductivity (W/m*K) ASTM D5470	Thermal Impedance vs % strain (°C*in2/W) (°C*cm2/W) - ASTM D5470 (tested on 40 mils/1mm thickness)			Dielectric Breakdown Voltage (V AC) ASTM D149
Gap Pad VO Ultrasoft (TGP 1000VOUS)	"General Purpose" Gap Pad with 900S Sil Pad support. Naturally sticky on one side and extremely soft and conformable, it guarantees reliable and long last performances.	Pink	0.020 - 0.250 / 0.51 - 6.35	5	1.0	10%	20%	30%	6000
						1.97 / 12.7	1.87 / 12.1	1.68 / 10.8	
Gap Pad 1500 (TGP 1500)	Gap Pad un-reinforced inside and with both the surfaces naturally sticky. It maintains an excellent insulation and a marked adaptability to surfaces that generates a low final thermal resistance.	Grey	0.020 - 0.200 / 0.51 - 5.1	40	1.5	10%	20%	30%	>6000
						1.62 / 10.5	1.50 / 9.68	1.33 / 8.58	
Gap Pad HC 3.0 (TGP HC3000)	Highly conformable and fiberglass reinforced Gap Pad, ideal for low pressures assemblies. Naturally sticky on the both sides and with high thermal conductivity, it guarantees excellent thermal performances and an easy application.	Light Blue	0.010 - 0.125 / 0.25 - 3.18	15	3.0	10%	20%	30%	>5000
						0.57 / 3.68	0.49 / 3.16	0.44 / 2.84	
Gap Pad HC 5.0 (TGP HC5000)	Pad with fiberglass support. It combines an excellent electrical insulation with a low thermal resistance.	Violet	0.020 - 0.125 / 0.50 - 3.18	35	5.0	10%	20%	30%	5000
						0.35 / 2.26	0.30 / 1.94	0.26 / 1.68	
Gap Pad 6000ULM (TGP 6000ULM)	Ultra-Low Modulus (ULM) Gap Pad series extremely soft and with very high thermal conductivity. Available with fiberglass reinforcement and both sticky sides, it is ideal for low pressure assemblies.	Grey	0.040 - 0.125 / 1.02 - 3.18	60 (Shore 000)	6.0	10%	20%	30%	>5000
						0.34 / 2.20	0.29 / 1.88	0.26 / 2.84	
Gap Pad 10000ULM (TGP 10000ULM)	Ultra-Low Modulus (ULM) Gap Pad series extremely soft and with very high thermal conductivity. Naturally sticky on the both sides, it is ideal for minimum pressure assemblies, especially in telecom applications (5G).	Grey	0.040 - 0.125 / 1.02 - 3.18	75 (Shore 000)	10.0	10%	20%	30%	3200
						n/a	n/a	n/a	



I materiali a cambiamento di fase HI-FLOW® costituiscono l'alternativa ideale all'utilizzo di grasso termico come interfaccia tra i componenti di potenza e il dissipatore. Essendo solidi a temperatura ambiente, i prodotti HI-FLOW® possono essere facilmente fustellati sul disegno della superficie da dissipare e, una volta assemblati, l'aumento di temperatura del componente li renderà simili a cere, garantendo così una bagnabilità pressoché totale delle superfici in contatto. Alcuni prodotti della gamma HI-FLOW® hanno un supporto interno in poli-immide e dunque sono anche ottimi isolanti.

The HI-FLOW® phase change interface materials are the excellent replacement for thermal grease as an interface between the power components and the heat sink. The HI-FLOW® products are solid at room temperature, so they are easily punched on the drawing of the surface to dissipate. Once they are assembled, the increase of temperature will make them similar to wax, to guarantee a total wettability of the touched surfaces. Some HI-FLOW® component's products have an internal polyimide support, so they are excellent insulators as well.

PRODUCT	DESCRIPTION	Color	Thickness (mils/mm)	Total thickness (mils/mm)	Thermal Conductivity (W/m*K) ASTM D5470	Thermal Impedance @ 50psi/[3.5 Kg/cm²] (°C*in²/W) (°C*cm²/W) ASTM D5470	Dielectric Breakdown Voltage (V AC) ASTM D149
Hi-Flow 300P (THF 1600P)	Phase change material with polyimide carrier (Kapton). It ensures an excellent electrical insulation. Not adhesive product. Phase change temperature: 55°C.	Green	1 / 0.025	4 / 0.102	1.6	0.12 / 0.77	5000
			1.5 / 0.038	4.5 / 0.112		0.16 / 1.03	
			2 / 0.051	5 / 0.127		0.19 / 1.23	
Hi-Flow 650P (THF 1500P)	Phase change material with polyimide carrier (Kapton). It ensures an excellent electrical insulation. Naturally sticky on one side for difficult assemblies. Phase change temperature: 52°C.	Gold	1 / 0.025	4 / 0.102	1.5	0.19 / 1.23	5500
			1.5 / 0.038	4.5 / 0.112		0.21 / 1.35	
			2 / 0.051	5 / 0.127		0.26 / 1.68	
Hi-Flow 225F-AC (THF 1000FAC)	Phase change material applied on aluminum film to improve the thermal exchange. Sticky on one side for difficult assemblies. Phase change temperature: 55°C.	Black	1.5 / 0.038	4 / 0.102	1.0	0.09 / 0.58	NO



I biadesivi della gamma BOND-PLY® sono isolanti realizzati con adesivi presso-sensibili termoconduttivi e costituiscono l'alternativa ideale all'utilizzo di viti o clip per il fissaggio dei componenti al dissipatore. Efficaci già a temperatura ambiente, non prevedono attivazioni termiche, ma la loro potenza di fissaggio aumenta considerevolmente dopo il primo ciclo termico. Disponibili in rotoli, lastre o pezzi fustellati a disegno.

The BOND-PLY® adhesive tapes are isolating materials made with thermal conductive pressure sensitive adhesives and they are the ideal alternative to screws or clips for fixing components on the heat sink. They are efficient at room temperature, they don't need thermal activations. Their power fixing increases after the first thermal cycle. Available in roll, sheet or die-cut by drawing.

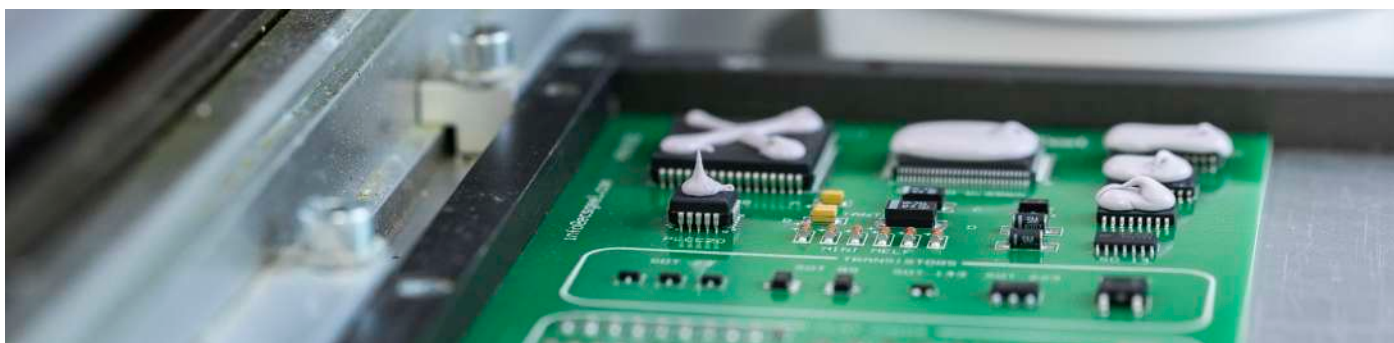
PRODUCT	DESCRIPTION	Color	Thickness (mils/ mm)	Thermal Conductivity (W/m*K) ASTM D5470	Thermal Impedance @ 50psi/[3.5 Kg/cm²] (°C*in²/W) (°C*cm²/W) ASTM D5470	Dielectric Breakdown Voltage (V AC) ASTM D149	Continuous Use Temperature (°C)
Bond-Ply 100 (TBP 850)	Fiberglass reinforced pressure sensitive adhesive tape for permanent fixtures in industrial applications. Excellent electrical insulation and thermal exchange. Fixing increased by thermal cycles.	White	5 / 0.127	0.8	0.52 / 3.35	3000	-30 / +120
			8 / 0.203		0.78 / 5.03	6000	
			11 / 0.279		1.01 / 6.52	8500	
Bond-Ply 800 (TBP 800)	Fiberglass reinforced pressure sensitive adhesive tape for permanent fixtures. Excellent electrical insulation and thermal exchange. Ideal for lighting engineering applications.	Grey	5 / 0.127	0.8	0.60 / 3.87	4000	-40 / +125
			8 / 0.203		0.72 / 4.65	6000	



Le resine bicomponente GAP FILLER® rappresentano l'alternativa fluida ai GAP PAD®, ingegnerizzate per ottimizzare la dispensazione automatizzata in linee a ciclo continuo di materiale isolante termococonduttivo. I materiali della gamma GAP FILLER® rimangono morbidi anche dopo polimerizzazione (che avviene, con tempistiche differenti, sia a temperatura ambiente che a caldo), esercitando quindi un minimo stress sui componenti e massimizzando la dissipazione in contesti dalla geometria intricata o su spessori anche di alcuni centimetri.

The two-part GAP FILLER® are the liquid alternative to GAP PAD®, engineered to optimize the automated dispensing in continuous cycle lines of thermal conductive insulating material. The GAP FILLER® materials remain soft even after polymerization (which takes place with different times both at room and hot temperatures), with a minimum stress on components and a maximum dissipation in intricate geometries situations or on few centimeters' thicknesses.

PRODUCT	DESCRIPTION	Color	Viscosity ASTM D2196 / D5099	Cross Linking Conditions	Hardness (Shore 00) ASTM D2240	Thermal Conductivity (W/m*K) ASTM D5470	Dielectric Break- down Voltage (V/mil) / (V/mm) ASTM D149
Gap Filler 1500 (TGF 1500)	Two-part insulating thermally conductive and high viscosity Gap Filler with excellent slump resistance. It guarantees an excellent wettability also on unpolished surfaces. It hardens at room or hot temperatures.	Yellow	25 Pa • s	5 hr @ 25°C	50	1.8	400 / 16.000
				10 min @ 100°C			
Gap Filler 1500 LV (TGF 1500LVO)	Two-part insulating thermally conductive and high viscosity Gap Filler with excellent slump resistance. Suitable for all silicone sensitive applications, it ensures an on-site level ≤100 ppm. It hardens at room or hot temperatures.	Yellow	20 Pa • s	8 hr @ 25°C	80	1.8	400 / 16.000
				10 min @ 100°C			
Gap Filler 3500S35 (TGF 3600)	Two-part insulating thermally conductive and medium-low viscosity Gap Filler. The high thermal conductivity and the final softness ensure a very efficient thermal exchange with excellent performances in the most complex assemblies.	Blue	150.000 cPs	15 hr @ 25°C	35	3.6	275 / 11.000
				30 min @ 100°C			
Gap Filler 4000 (TGF 4000)	Two-part insulating thermally conductive Gap Filler. The excellent slump resistance and wettability guarantee a better and more fixed thermal performance over time.	Blue	25 Pa • s	24 hr @ 25°C	75	4.0	450 / 18.000
				30 min @ 100°C			

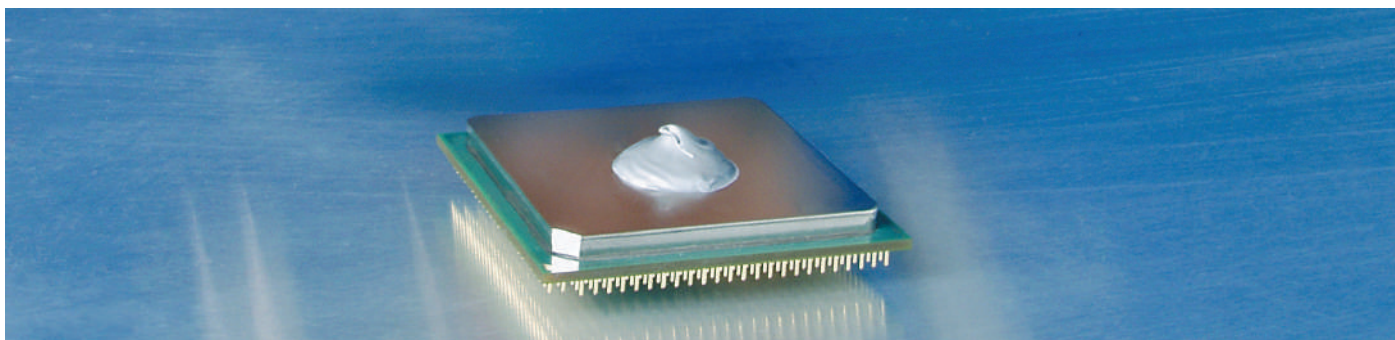


Le colle termoconduttive LIQUI-BOND® garantiscono il fissaggio di componenti montati su PCB al dissipatore senza l'ausilio di viti, clip o altri supporti meccanici. In gamma sono presenti sia mono- che bi-componenti a base siliconica o epossidica con differenti indicazioni per la polimerizzazione che, nel caso dei prodotti a base siliconica, prevede un ciclo termico. Sono fornibili in vari formati, dal dispenser manuale al dosatore automatico per volumi maggiori.

The thermally conductive glues LIQUI-BOND® guarantee the fastening of components on PCB to the heat sink without using screws, clips or any other mechanical support. The series includes both mono- and bi- silicone or epoxy-based components, with different indications for polymerization, which in case of silicone-based components involve a thermal cycle. Available in different types, from the manual dispenser to the automatic one for larger uses.

PRODUCT	DESCRIPTION	Color	Viscosity ASTM D2196 / D5099	Polymerization Conditions	Hardness (Shore 00) ASTM D2240	Thermal Conductivity (W/m*K) ASTM D5470	Dielectric Break- down Voltage (V/mil) / (V/mm) ASTM D149
Liqui-Bond SA1000 (TLB SA1000)	Thermally conductive one-part silicone glue with medium-low viscosity. Good thermal conductivity and electrical insulation. Hot cross linking. Application temperature between -60°C and +200°C.	Black	125.000 cPs	20 min @ 125°C	75	1.0	250 / 10.000
				10 min @ 150°C			
Liqui-Bond SA2000 (TLB SA2000)	Thermally conductive one-part silicone glue with medium viscosity. Excellent thermal conductivity, electrical insulation and fixing force. Hot cross linking. Application temperature between -60°C and +200°C.	Yellow	200.000 cPs	20 min @ 125°C	80	2.0	250 / 10.000
				10 min @ 150°C			
Liqui-Bond SA3505 (TLB SA3500)	Thermally conductive two-part silicone glue. Excellent thermal conductivity, electrical insulation and fixing force. Hot cross linking. Application temperature between -60°C and +200°C.	Brown	45 Pa • s	20 min @ 125°C	90	3.5	250 / 10.000
				10 min @ 150°C			
Liqui-Bond EA1805 (TLB EA1800)	Thermally conductive two-part and epoxy-based glue. Ideal for sensitive silicone applications in lighting market. Cross linking at room temperature. Application temperature between -40°C and +125°C.	Grey	60 Pa • s	10 hr @ 25°C	90 (Shore D)	1.8	250 / 10.000
				10 min @ 125 °C			

LOCTITE® Thermally Conductive Greases



I grassi termoconduttivi LOCTITE® rappresentano una soluzione semplice e immediata per garantire il corretto flusso termico dai componenti su scheda verso il dissipatore. Caratterizzati da una eccellente facilità di dispensazione e da un'ottima stabilità anche alle basse temperature, i grassi termoconduttivi riescono ad essere rapidamente efficaci nella maggior parte delle applicazioni elettroniche di media potenza. Fornibili in vari formati, adatti sia alla dispensazione manuale che semi-automatica.

The LOCTITE® thermal conductive greases represent a simple and fast solution to guarantee the right thermal flux from the component on board towards the dissipator. With an excellent ease of dispensing and stability even at low temperatures, the thermally conductive greases are rapidly efficient in almost all the electrical medium-power applications. Available in different types, suitable for both manual and semi-automatic dispensing.

PRODUCT	DESCRIPTION	Color	Density (g/cm ³)	Thermal Impedance (W/m ² *K) ASTM D5470	Dielectric Break-down Voltage (V/mil) / (V/mm) ASTM D149	Preservation
Loctite TG100	Thermally conductive silicone grease with excellent performances.	Grey	1.94	3.4	na	12 months @ 18/25°C
Loctite TC4	Thermally conductive insulating grease for high temperature applications.	White	2.35	0.6	500 / 19.000	12 months @ 18/25°C
Loctite TC8M	Thermally conductive insulating grease with excellent performances.	White	2.5	1.5	500 / 20.000	12 months @ 18/25°C

FORNITURA DEI MATERIALI MATERIAL SUPPLYING

I materiali possono essere forniti sotto forma di lastre, rotoli o in pezzi fustellati tagliati a misura:

- MISURA LASTRA STANDARD SIL PAD® = 12"x12" (305x305mm)
- MISURA LASTRA STANDARD GAP PAD® = 8"x16" (203x406mm)
- MISURA LASTRA GAP PAD® 10000ULM = 8"x8" (203x203mm)
- MISURA LASTRA STANDARD HI-FLOW® = 10,5"x12" (267x305mm)

SIL PAD®, HI-FLOW® e BOND-PLY® sono fornibili anche in rotoli e Welt Electronic provvede alla realizzazione di varie misure custom (tolleranza standard di larghezza sui rotoli tagliati: ± 1 mm).

I materiali della gamma GAP PAD®, data la loro elevata morbidezza, NON SONO FORNIBILI IN ROTOLO, in quanto l'avvolgimento causerebbe il danneggiamento del materiale stesso.

The materials can be supplied in sheet, roll or customized die-cut:

- SIL PAD® STANDARD SHEET SIZE = 12"x12" (305x305mm)
- GAP PAD® STANDARD SHEET SIZE = 8"x16" (203x406mm)
- GAP PAD® 10000ULM SHEET SIZE = 8"x8" (203x203mm)
- HI-FLOW® STANDARD SHEET SIZE = 10,5"x12" (267x305mm)

SIL PAD®, HI-FLOW® and BOND-PLY® are supplied in roll as well. Welt Electronic can realize different customized sizes (standard width tolerance on cut rolls: ± 1 mm).

The GAP PAD® materials CANNOT BE SUPPLIED IN ROLL due to their softness: the wrapping could damage the material.

TUTTI I MATERIALI SONO FORNIBILI FUSTELLATI SULLA BASE DELLE SPECIFICHE TECNICHE DEI CLIENTI
ALL THE MATERIALS CAN BE SUPPLIED IN DIE-CUT SHAPES ACCORDING TO CUSTOMER'S SPECIFIC TECHNICAL DESIGN

TOLLERANZE SU PEZZI FUSTELLATI A MISURA TOLERANCE OF CUSTOMIZED DIE-CUT PIECES

SIL PAD® - HI-FLOW®		
DIMENSIONE PEZZO PIECE SIZE	TOLLERANZA SU LUNGHEZZA E LARGHEZZA LENGTH AND WIDTH TOLERANCE	TOLLERANZA SU DIMENSIONE E POSIZIONE DEI FORI HOLES DIMENSION AND POSITION TOLERANCE
< 150x150mm	$\pm 0,25$ mm	$\pm 0,25$ mm
150x150mm < 300x300mm	$\pm 0,30$ mm	$\pm 0,30$ mm
> 300x300mm	$\pm 0,50$ mm	$\pm 0,50$ mm
GAP PAD®		
SPESSORE PEZZO PIECE THICKNESS	TOLLERANZA SU LUNGHEZZA E LARGHEZZA LENGTH AND WIDTH TOLERANCE	TOLLERANZA SU DIMENSIONE E POSIZIONE DEI FORI HOLES DIMENSION AND POSITION TOLERANCE
< 0,38mm (15 mils)	$\pm 0,25$ mm	$\pm 0,25$ mm
0,51mm (20 mils)	$\pm 0,25$ mm	$\pm 0,25$ mm
1,02mm (40 mils)	$\pm 0,50$ mm	$\pm 0,50$ mm
1,52mm (60 mils)	$\pm 0,50$ mm	$\pm 0,50$ mm
2,03mm (80 mils)	$\pm 0,50$ mm	$\pm 0,50$ mm
2,54mm (100 mils)	$\pm 0,50$ mm	$\pm 0,50$ mm
3,18mm (125 mils)	$\pm 0,75$ mm	$\pm 0,75$ mm
4,06mm (160 mils)	$\pm 0,75$ mm	$\pm 0,75$ mm
5,08mm (200 mils)	$\pm 0,75$ mm	$\pm 0,75$ mm
6,35mm (250 mils)	$\pm 0,75$ mm	$\pm 0,75$ mm

[illegible]



HEAD OFFICE

Welt Electronic SpA
Via della Treccia, 33 - 50145 Firenze Italy
Tel. +39 055 302631
www.weltelectronic.it - info@weltelectronic.it
gdpr@weltelectronic.it - weltelectronic@pec.it

BRANCH OFFICE

Via Cristoforo Colombo, 5/C - 20094 Corsico, Milano
Tel. +39 02 4585637

LOCAL OFFICES

Padova - Roma - Torino
Genova - Bologna - Ancona

COMPANY DATA

Trib. FI45117 - R.E.A. FI388341
C.F. e P.I. 03714360488
Social Capital: 2.000.000 i.v.
Registro Pile: IT19040P00005244