



ELANTAS Thermal Interface Materials (TIM)

TIM Solution and Project Review

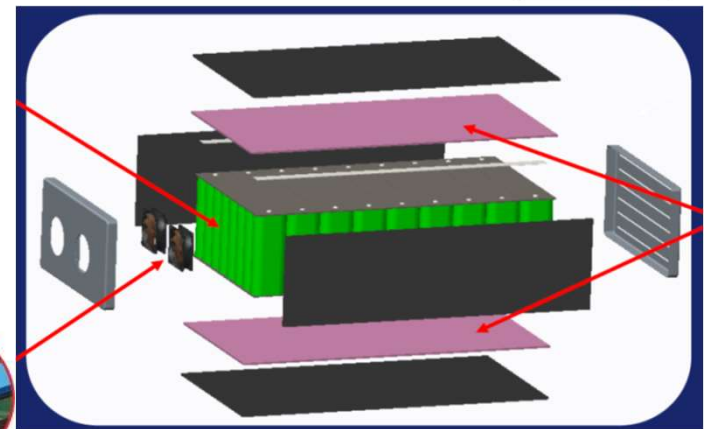
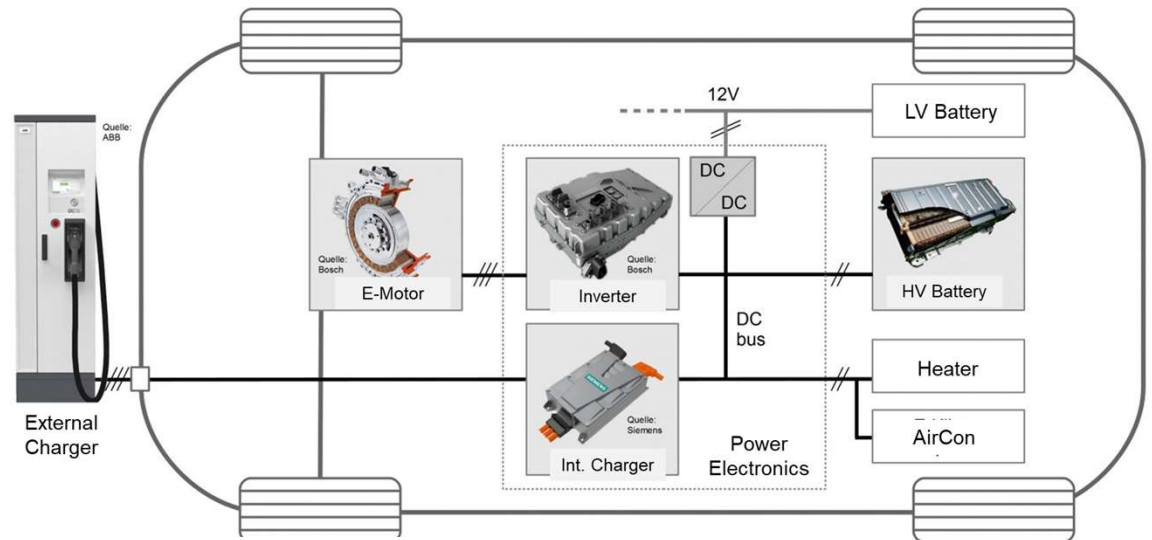
ELANTAS Malaysia Sdn. Bhd.

ELANTAS TIM Solution

- **ELAN-Flex® Thermal Pad**
 - TC: 1.0-8.0 W/m.k
- **ELAN-Flex® Thermally Conductive Insulator**
 - TC: 1.6-3.5 W/m.k
- **ELAN-Bond® Thermal Gel (Liquid Gap Filler)**
 - TC: 2.0-3.5 W/m.k
- **ELAN-Bond® Thermally Conductive Adhesive**
 - TC: 1.2-2.0 W/m.k
- **ELAN-Tron® and ELAN-Bond ® Thermally Conductive Potting Material**
 - TC: 0.85-4.0 W/m.k

Applications

- Electrical Vehicle
- Power Electronic
- EV Batteries
- External Charger



Air Cooled Battery ELAN-Flex® Thermal Pad
ELAN-Bond® Thermal Gel

ELANTAS TIM: ELAN-Flex® Thermal Pad

TCP Series

- Material: silicon resin + fiberglass
- Features: **Cost effective, soft gap filler**
- Thermal conductivity: 1.0 W/m.k
- Applications: **Battery pack and battery casing; Electronics**

TCP R-series

- Material: silicon resin + ceramics
- Features: **Double side tack, better electrical insulation and better hardness**
- Thermal conductivity: 1.0-3.0 W/m.k
- Applications: **Soft cell battery; Electronics and etc.**

TCH series (High Thermal Conductivity)

- Material: silicon resin + ceramics
- Features: **high thermal conductivity, low thermal resistance, conformable**
- Thermal conductivity: 4.0-8.0 W/m.k
- Applications: **High thermal conductivity module, Network communication equipment and etc.**



ELANTAS TIM: ELAN-Flex® Thermal Pad

ELAN-Flex® Thermal Pad

Product Model	Color	Thickness (mm)	Hardness	TC (W/m.k)	Continuous Use Temperature (°C)	Flame Rating
TCP100-T10/H10	Brown Red + White	1.0	Shore OO 10	1.0	-40 to 150	UL 94 V0
TCP120R-T10/H10	Light Yellow	1,0	Shore A 10-15	1.2	-40 to 200	UL 94 V0
TCP200R-T10/H50	Gray	1.0	Shore A 45-55	2.0	-40 to 200	UL 94 V0
TCP300R-T10/H55	Light Blue	1.0	Shore A 50-60	3.0	-40 to 150	UL 94 V0
TCH600	Orange + Light Pink	0.5 – 6.5	Shore OO 45 - 55	6.0	-40 to 150	UL 94 V0
TCH800	Light Pink	0.5 – 6.5	Shore OO 45 - 55	8.0	-40 to 150	UL 94 V0

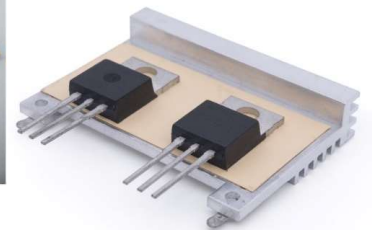
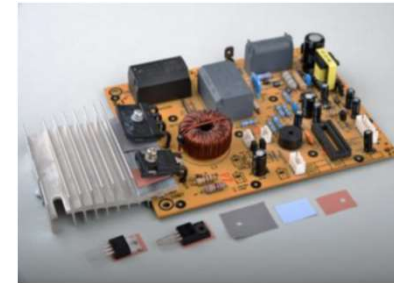
ELANTAS TIM: ELAN-Flex® Thermally Conductive Insulator

ELAN-Flex® Thermally Conductive Insulator

Product Model	Composite	Appearance	Thermal Resistance (°C-in ² /W)	TC (W/m.k)	Hardness (Shore A)
TCI 900S	Silicone + fiberglass	Brown Red	0.95 @ 10 psi 0.75 @ 25 psi 0.47 @ 100 psi	1.6	92
TCI 1200	Silicone + fiberglass	Black	0.71 @ 10 psi 0.62 @ 25 psi 0.47 @ 100 psi	1.8	80
TCI 2000	Silicone + fiberglass	White	0.35 @ 10 psi 0.30 @ 25 psi 0.25 @ 100 psi	3.5	70

Distinctive Properties

- TC: 1.6/1.8/3.5 W/m.K
- High-cut-through resistance
- High breakdown voltage
- Low thermal resistance at low application pressure
- UL94 V0
- Suitable use in heating power device / heating mode vehicle's component



ELANTAS TIM: ELAN-Bond® Thermal Gel (Liquid Gap Filler)

Applications:

- EV batteries
- Automotive electronics
- SSD
- Between any heat-generating semiconductor and a heat sink
- Telecommunications

Features

- 2 component with mix ratio 1: 1
- Thermal conductivity: 2.0 - 3.5 W/m-K
- Cured at room temperature or elevated temperature
- Thixotropic nature makes it easy to dispense
- Ultra-conforming, designed for fragile and low-stress applications
- Excellent low and high temperature, mechanical and chemical stability



ELANTAS TIM: ELAN-Bond® Thermal Gel (Liquid Gap Filler)

ELAN-Bond® Thermal Gel (Liquid Gap Filler) TF Series

Product Model		Color	Viscosity (cps)	Hardness	TC (W/m.k)	Continuous Use Temperature (°C)	Flame Rating
TF200 M	Part A	White	80,000	Shore OO 50	2.0	-40 to 200	UL 94 V0
	Part B	Brown	80,000				
TF300	Part A	White	400,000	Shore OO 40	3.0	-40 to 200	UL 94 V0
	Part B	Light Blue	600,000				
TF350	Part A	White	1,500,000	Shore OO 40	3.5	-40 to 200	UL 94 V0
	Part B	Blue	1,500,000				

Available in 50cc, 400cc and 20kg packaging



Latest Update

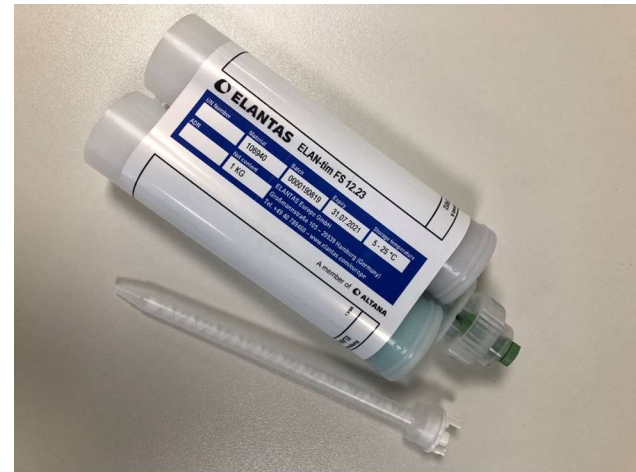
ELAN-tim FS26OP0012/FS26OP0023 (Liquid Gap Filler)

Applications:

To provide a reliable cooling solution to transfer heat from PCB to heat sink for e.g. transmission or engine control units.

Features

- 2 component with mix ratio 1: 1
- Thermal conductivity: 2.6 W/m-K
- Cured at room temperature or elevated temperature
- Soft & flexible
- Excellent low and high temperature, mechanical and chemical stability



ELANTAS TIM: ELAN-Bond® Thermally Conductive Adhesive

ELAN-Bond® Adhesive/Sealant

Product Model	Structure	Appearance	Curing	TC (W/m.k)	Hardness (Shore A)
7203-RV12	Silicone 1K	White/Grey/Black	Moisture Cure	1.2	58
7204-RV20	Silicone 1K	White	Moisture Cure	2.0	90

Distinctive Properties

- One component adhesive/sealant
- Cures at room temperature when exposed to moisture in the air
- Tough and flexible rubber
- Excellent adhesion to many substrates including ABS/PC/FR4 without use of primer
- Stable and flexible from -55°C to 200°C
- No solvent or other hazardous substances released during usage
- Full compliance to WEEE, RoHS and REACH safety and environmental regulations



Heat Dissipation

ELANTAS TIM: Thermally Conductive Potting Material

ELAN-Tron® Potting/Encapsulant Material

Product Model	Viscosity (mPa.s)	TC (W/m.k)	Max Operating Temperature (°C)	Hardness (Shore D)	Flame Rating
MC62/W363	1400-2200	0.85-0.95	155	85-87	UL 94 V0
MC622/W360	1800-2300	1.10-1.20	155	85-87	UL 94 V0

ELAN-Bond® Potting/Encapsulant Material

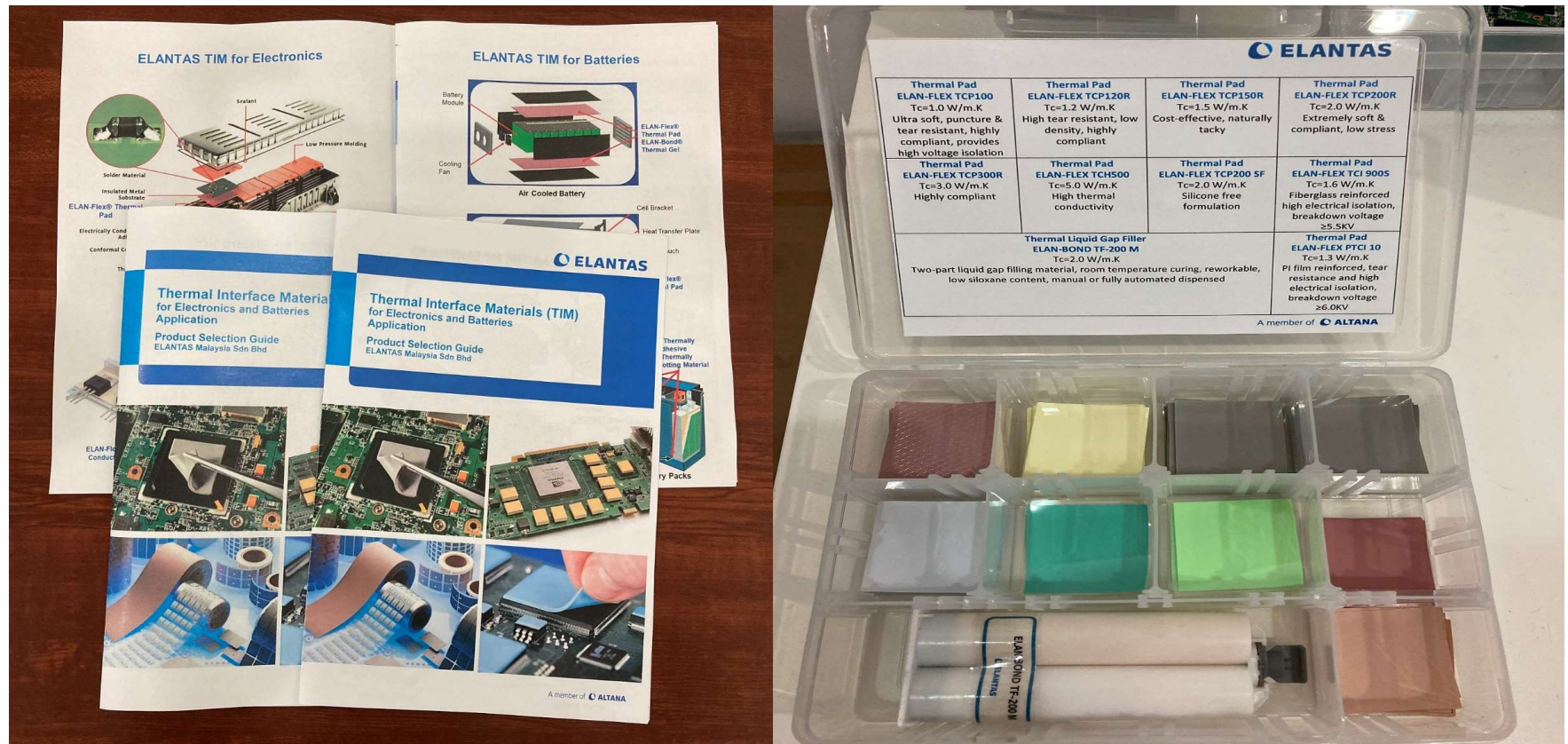
GF200	10000	1.7	155	65 (shore 00)	UL 94 V0
GF400	13000	4.0	200	65 (shore 00)	UL 94 V0

Features:

- Thermal conductivity: 0.85 to 4.0 W/m.K
- Epoxy and silicone type
- Good heat dissipation
- Flame retardant
- Easy processing



ELANTAS TIM: Brochure and Marketing Material



Thank you for
your attention.