

ELPLUS EL Series

Thermal Pad (Standard / Adhesive / Fiberglass)

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1. Product Overview

The ELPLUS EL Series Thermal Pad is expertly designed to resolve the demanding heat dissipation requirements of modern, high-density electronic devices. With excellent thermal conductivity and exceptional surface compliance, this series perfectly fills the microscopic air gaps between heat-generating components and heat sinks (or metal housings), effectively eliminating interfacial thermal resistance.

To meet diverse assembly requirements, this series is available in three fundamental structures:

- **EL (Standard):** Features double-sided natural tack, offering optimal compressibility and tolerance absorption.
- **ELS (Single-Sided Adhesive):** Equipped with a single-sided reinforced adhesive layer, facilitating rapid positioning and assembly on production lines.
- **ELFG (Fiberglass Reinforced):** Embedded with a high-quality fiberglass layer, significantly enhancing tear and puncture resistance. It effectively prevents electrical breakdown and protects against cuts from sharp metal edges under high-pressure fastening.

2. Core Features

- **High Thermal Conductivity:** Offers a comprehensive range of thermal conductivity options from 1.0 W/mK to an ultra-high 8.0 W/mK.
- **High Reliability & Protection:** Outstanding electrical insulation properties (high dielectric strength) and exceptional dimensional stability.
- **Ultimate Compliance:** Readily deforms under extremely low pressure, dramatically reducing contact thermal resistance.
- **Advanced Application Support:** High K-value and FG (Fiberglass) models are engineered to withstand extremely harsh environments, meeting the rigorous demands of military/aerospace specifications, 5G RF power amplifiers, and EV IGBT/SiC inverters.

3. Typical Properties

Properties	Test Method	EL 10 / 15 / 20 Series	EL 30 / 40 / 50 Series	EL 60 / 80 Series
Thermal Conductivity	ASTM D5470	1.0 / 1.5 / 2.0 W/mK	3.0 / 4.0 / 5.0 W/mK	6.0 / 8.0 W/mK
Structure	-	Standard / Adhesive / FG	Standard / Adhesive / FG	Standard / Adhesive / FG
Color	Visual	White / Gray (Varies)	White / Gray (Varies)	Dark Gray
Hardness	ASTM D2240	15 ~ 30 (Shore 00)	25 ~ 45 (Shore 00)	40 ~ 60 (Shore 00)
Specific Gravity	ASTM D792	2.1 ~ 2.4 g/cm ³	2.6 ~ 2.9 g/cm ³	3.1 ~ 3.3 g/cm ³
Tensile Strength	ASTM D412	> 1.0 MPa	> 1.5 MPa	> 2.0 MPa
Volume Resistivity	ASTM D257	> 10 ¹³ Ω·cm	> 10 ¹³ Ω·cm	> 10 ¹² Ω·cm
Breakdown Voltage	ASTM D149	> 5 kV/mm	> 4 kV/mm	> 3.5 kV/mm
Flammability Rating	UL 94	V-0	V-0	V-0
Continuous Use Temp.	EN 344	-40°C to +200°C	-40°C to +200°C	-40°C to +200°C

Properties	Test Method	EL 10 / 15 / 20 Series	EL 30 / 40 / 50 Series	EL 60 / 80 Series
Standard Thickness Range	-	0.5mm ~ 10.0mm	0.5mm ~ 5.0mm	0.5mm ~ 3.0mm

4. Availability & Custom Die-cut

- **Standard Sheet Size:** 200mm x 400mm, or available in continuous rolls upon customer request.
- **Customization Service:** ELPLUS Enterprise Inc. provides precise custom die-cutting services. Products can be tailored to any shape or dimension based on the customer's CAD drawings, ready for direct assembly line integration.

5. Storage & Shelf Life

- Please store in a dry environment at room temperature (approximately 25°C), away from direct sunlight.
- Under unopened and properly stored conditions, the shelf life is typically 12 months from the date of manufacture (or as specified by specific model regulations).

6. Disclaimer

The technical data and recommendations provided in this document are based on laboratory test results that ELPLUS Enterprise Inc. believes to be reliable. However, due to the extreme variations in actual application environments, processing conditions, and design requirements across different clients, ELPLUS Enterprise Inc. makes no warranties, express or implied, regarding the final performance in specific applications. Users are strongly advised to request samples for actual application testing prior to mass production to ensure the product fully satisfies their requirements.

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