

ALUMINUM NITRIDE PADS

(Thermal Conductivity 170+ W/m-K)

2026

REV2.0

Total Thermal Solution

ALUMINUM NITRIDE PADS

Wakefield Thermal's ceramic aluminum nitride thermal pads deliver exceptional thermal performance where conventional gap fillers fall short. Due to the high thermal conductivity of aluminum nitride ceramics **in excess of 170 W/m-K**, these advanced interface materials efficiently transfer heat away from power electronics, semiconductor devices, LEDs, RF components, and other high-power applications. With its exceptional electrical insulation, low thermal resistance, and reliable performance across a wide temperature range, aluminum nitride thermal pads help improve system efficiency, extend component life, and enhance overall product reliability in demanding industrial, automotive, telecommunications, and aerospace environments.

Aluminum Nitride pads outperform all other standard materials in thermal conductivity and electrical isolation. Including but not limited to Silicone and Aluminum Oxide pads.

Applications

- Power Devices
- Semiconductors
- IGBT Transistors
- LED Boards
- RF Components
- MOSFET Transistors
- Integrated Circuit (IC) Chips
- Chip On Film (COF)

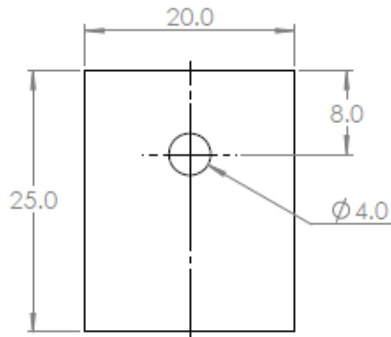
Part Number Guide
SERIES CODE – THICKNESS (1/1000") - DEVICE

MATERIAL PROPERTIES		
Property	Units	Value
Bulk Density	g/cm ³	≥3.3
Water Absorption	-	0.00
Flexural Strength	MPa	>300
Vickers Hardness	GPa	11.0
Modulus of Elasticity	GPa	>200
Dielectric Constant	1MHz	8.8
Coefficient of Linear Thermal Expansion	/°C, 5°C/min, 20-300°C	4.6x10 ⁻⁶
Thermal Conductivity @30°C	W/m-K	≥170
Volume Resistivity @20°C	Ω-cm	>1014
Dielectric Strength	KV/mm	15-20
RoHS	-	PASS
REACH	-	PASS
Halogen	-	PASS

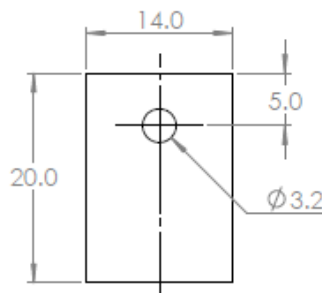
STANDARD PARTS*		
Part #	Description	Product Size (mm)
178-39-3P	TO-3P	25x20x1
178-25-3P	TO-3P	25x20x0.635
178-39-220	TO-220	20x14x1
178-25-220	TO-220	20x14x0.635
178-39-247	TO-247	22x17x1
178-25-247	TO-247	22x17x0.635
178-39-264	TO-264	28x22x1
178-25-264	TO-264	28x22x0.635
178-39-25.4	CUT TO SIZE	25.4x25.4x1
178-25-25.4	CUT TO SIZE	25.4x25.4x0.635
178-39-114.3	CUT TO SIZE	114.3x114.3x1
178-25-114.3	CUT TO SIZE	114.3x114.3x0.635

MECHANICAL DRAWINGS

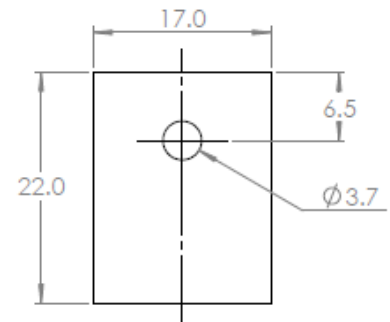
(All drawings in mm)



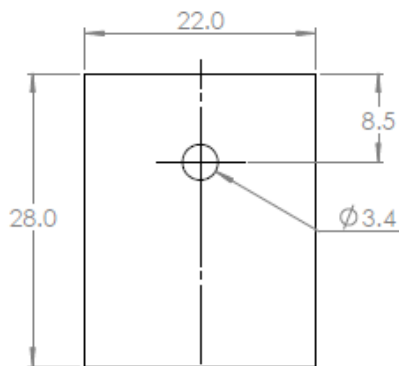
TO-3P



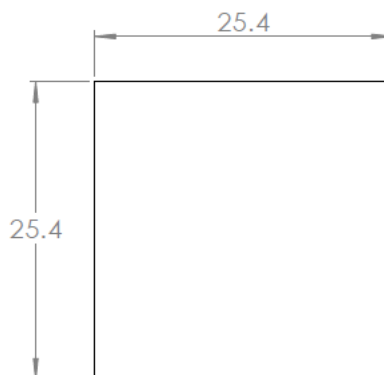
TO-220



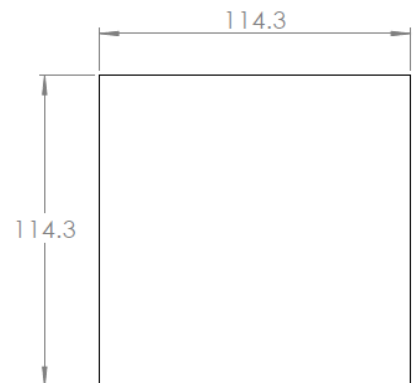
TO-247



TO-264



25.4x25.4



114.3x114.3

Sold through our Distribution Channel. For help finding your Aluminum Nitride Ceramic Pads, contact us at:

Phone: (603) 635-2800 or communications@wakefieldthermal.com

*Also available in custom sizes upon request.

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NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTES

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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