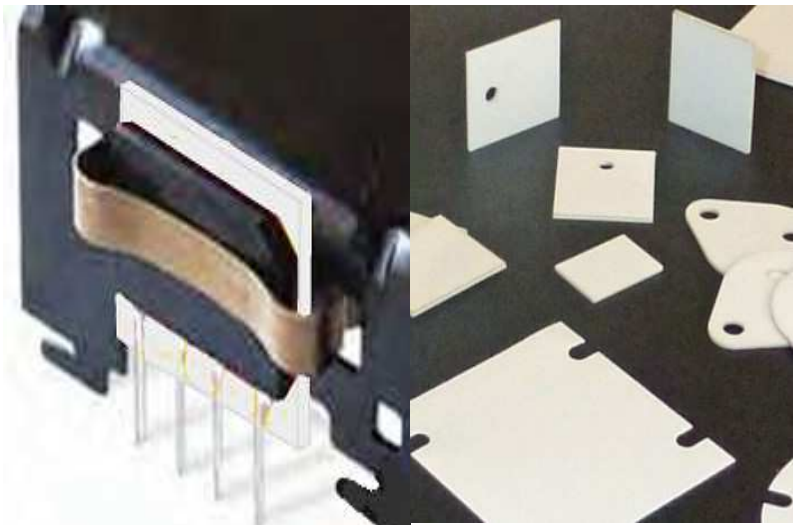
THERMALLY CONDUCTIVE CERAMICS ALO 96

High thermal conductivity, High electrical insulation, and mechanical stability

Al_2O_3-Aluminium oxide is the best known oxide of ceramic material. **ALO 96** has excellent thermal properties combined with high mechanical stability, high electrical isolation These ceramic´s properties are used in applications where better thermal conductivity, high electrical insulation, EMI shielding or high working temperature are required.

Despite the high thermal conductivity of ceramics, the hardness and brittleness of the material is a general problem. Ceramic plates require using of elastic, thermally conductive material on the contact areas for the good heat transfer and a mechanical protection or the lapping of the contact surfaces is essential.



PROPERTIES	AVAILABILITY	APPLICATION EXAMPLES
High electrical insulation and thermal conductivity. High mechanical strength and hardness. High corrosion and wear resistance. Low density, Very high oper. temperature, EMI-shielding, Necessary to use contact TIM on surfaces	**All dimensions** for standard semiconductor housings available + in customer specification Or plates i sizes 115x115/ 165x115/ 190x138 mm Thickness: 0,50 |0,635*|1,0 mm - 2.0 mm (* 0,635 and from 1,5 mm only in larger quantities) Thickness tolerance: +/- 10%.	**For discrete semiconductors,** Small modules, Braking resistances, Thick film and thin film technology, in Telecommunications, in Refrigeration systems, in the High-power LED appl and in many other applications

Properties	Unit	ALO 96	Properties	Unit	ALO 96
Material		**Al_2O_3 96%**	RoHS Conformity		YES
Colour		**white**	**Electrical Properties**		
Thermal Properties			Dielectric Constant at 1 kHz	**F/m**	**9,8**
Thermal Resistance @ 100 PSI	**°C-inch²/W**	**0,04** + Rth TIM	Volume Resistivity at 25°C	**Ω-cm**	**1,0 x 10^{13}**
Thermal Conductivity	**W/m.K**	**24**	Dielectric Strength (Breakdown vs Thickness)	**V**	**7kV / 0,25 mm**
CTE, linear at Temperature 20.0 - 300 °C	**µm/m-°C**	**6,8**	Dielectric Strength (Breakdown vs Thickness)	**V**	**12,6kV/ 0,63mm**
Specific Heat Capacity at T emp. 100.0 - 200 °C	**J/g-°C**	**0,780**	Dielectric Strength (Breakdown vs Thickness)	**V**	**15kV / 1,0 mm**
Operating Temperature Range	**°C**	**- 60 to 850**	Dielectric loss index @ frequency 10^6 Hz	**-**	**0,00030**
Mechanicle Properties			**Physical Properties**		
Tensile Modulus	**GPa**	**340**	Density	**g/cc**	**3,78**
Flexural Strength	**MPa**	**400**	Water Absorption	**%**	**0,00**
Compressive Strength	**MPa**	**2000** to **4000**	Particle Size	**µm**	**3.0 - 5.0**
Thickness Tolerance 0,50 – 2,0 mm	**%**	**+/- 10**			
Standard Thickness (1,5mm and higher on request)	**mm**	**0,50 /1,0**	Coarseness, unmachined	**µm**	**0,90 ~ 1,3**
Hardness	**Mohs**	9	Deflection from thickness 0.5 mm (of longest side)		**0.2-0.3%**

Test Methods: All data without warranty and subject to change. Please contact us for further data and information.

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