FACT SHEET

ICT-TCC-ALO

formerly ICT-ALO

ICT-TCC-ALO-96 and-99 is a ceramic material based on aluminium oxide ceramics with a purity of 96% to 99%, which is characterized by a particularly high strength and thermal conductivity.

8 TECHNICAL CERAMICS

DESCRIPTION

ICT-TCC-ALO-96 and 99 (S) has excellent thermal properties combined with mechanical stability and high electrical insulation. These are also the mainspring to use ceramic materials wherever an improved thermal conductivity is required.

Ceramic insulating discs consist mainly of aluminium oxide (AlO or aluminium nitride AlN) . Aluminiumoxid (Al_2O_3) is the most well-known oxide ceramic material.
ICT- ALO-96 and -99 (S) can be excellently processed with all commercial thick layer pastes due to the excellent surface quality of both sides and are even suitable for many thin applications (sputtering).

Despite the high thermal conductivity, there is generally the problem that for optimum connection of the power component to the heat sink either a metallization is required or a TIM in the form of thermal paste or heat conducting adhesives has to be applied on the interface. Because the optimal thermal path - the heat transfer - is only guaranteed if the thermal barriers are reduced.

Our tip: Use phase change material without substrate carrier. This ICT product variant is ideally suited here:

› ICT-Xp45-4W-14R | series

or combined with both **Fill-up StICK** product variants:

› **ICT-BAR-In-** (or Ac) -19G / 001 or
› **ICT-PEN-In**- (or Ac) -19G / 001

TYPICAL PROPERTIES

Operating temperature	**from -65 to 850 °C**
Thermally conductive	**Yes**
Thermal conductivity	**25 W/m*K**
Thermal resistance (inch² / 645,16mm²)	**0.12 K/W**
Density	**3.8 g/cm³**
Color	**White**
Material	**Aluminium-oxid Aufbau**
Dielectric strength	**15 kV (AC)**
Electrically conductive	**No**
Hardness	**9 Härte (nach MOHS) (Elastizitätsmodul)**

FEATURES

› Low density (3.78 to 3.95 g/cm³)
› Very good electrical insulation (15kV/mm)
› Medium to extremely high mechanical strength (300 to 630 MPa)
› Very high compressive strength (2000 to 4000 MPa)
› Very high hardness (9 Mohs)
› Medium thermal conductivity (25-30 W/mK)
› Operating temperature without mechanical load 1000 to 1500 °c
› High corrosion and wear resistance
› Good gliding properties

DELIVERY FORMS / APPLICATIONS

○ All dimensions available for standard semiconductor enclosure
○ In dimensions according to customer specification
○ Also available in plate dimensions: 115 x 115/ 165 x 115/ 190 x 138 mm
○ Thickness: 0,50 - 2.0 mm (+/- 10%)
○ Additional material thickness can be requested

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