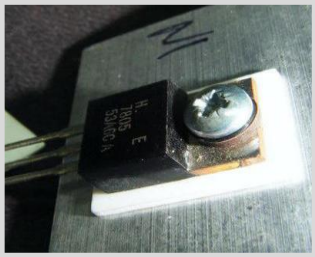
OpTIM™ by SCHLEGEL electronic materials a member of eMEI Group

OI-3000

THERMALLY CONDUCTIVE CERAMIC INSULATOR

Features and Benefit

- Very hard
- Excellent wear resistance
- Light weight
- Wide applications
- Insulator with high break-down voltage
- High mechanical strength
- Excellent thermal stability



Product Code and Descriptions:
For example:OP-3001-T0-247
OP-3001 is 3001 series
TO-247 is the size :0.635mmT*17mm*22mm

The OI-3000 thermally conductive ceramic insulator is mainly made of Al_2O_3, formed under calcinations in higher than 1000°C with molten rare material oxide. Al_2O_3 ceramics with high alumina content are so-called special ceramics. It usually possesses a compact structure which gives special performance to the material. The oxygen ions in Al_2O_3 ceramic material construct in a H.C.P structure, whilst aluminium ions possess 2/3 of total space within the octahedral structure. This is same as the α-Al2O3 structure, so it has a high melting point, very hard, and has excellent wear resistance. It is designed to be RoHS compliant and halogen-free, providing extra reassurance in applications where hazardous substances are forbidden.

Typical Application

- Thermal insulation of high power equipment High voltage
- MOS IC pipe
- IGBT chip
- High frequency power supply
- Mechanical equipment
- Strong current, high voltage, high temperature (<1600°C) applications

Standard Configurations

- TO -247、0.635mm*17mm*22mm
- TO-220、1mm*13mm*19mm
- TO-3 P、1mm*20mm*25mm
- TO-264、1mm*22mm*28mm

Typical Properties

Part NO	OI-3001	OI-3002	OI-3003
Composition	Alumina (≥99%)	Alumina (≥95%)	Zirconia (≥90%)
Firing temperature/ °C	1780-1800	1650-1680	1550-1600
Density/ gcm^{-1}	≥3.8	≥3.6	>6
Breakdown voltage/ kv/mm	15	15	15
Water absorption /%	<0.01	<0.01	<0.01
Compression resistance /Mpa	3700	2400	5000
Hardness/ HRA	≥88	≥82	≥85
Volume resistivity/ cm	>1012	>1012	>1012
Flexural strength/ Mpa	400	320	700
Coefficient of thermal expansion/ x 10°	6.8-8.0	6.2-8.5	6.9-10
Dielectric constant/ MHZ	9.8	8.5	-
Roughness/ Ra	≤0.8	≤0.8	-
Mirror polish	≤0.05	≤0.1	-
Thermal conductivity/ W/m-k	25	20	-
Thermal Stability/ °C	1700	1600	-

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