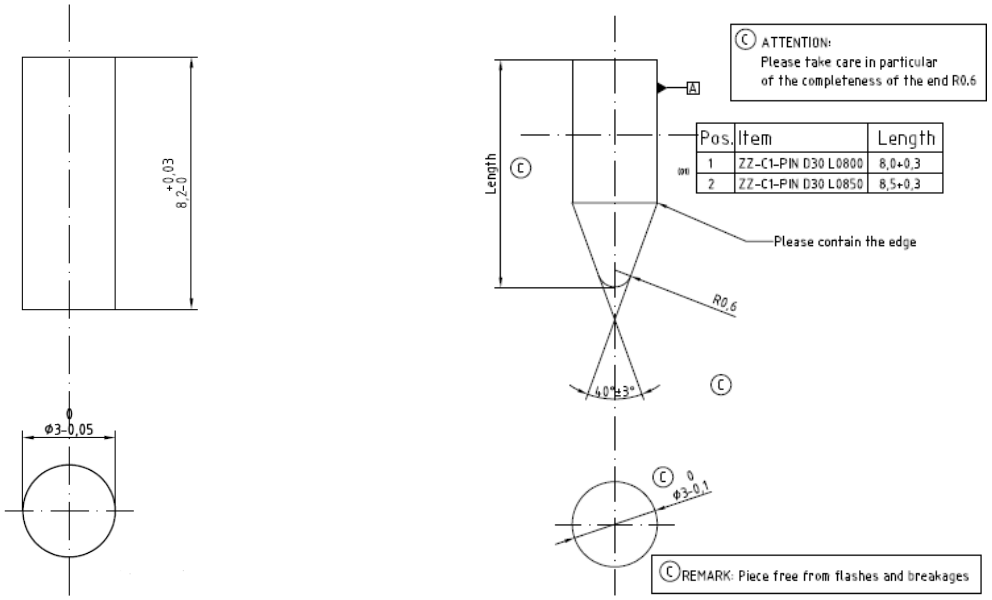
firedect
RELIABLE THERMO TECHNOLOGY

Aluminum Oxide Ceramic Pins

Item.: Ceramic PINs
Date: 05.10.2015

Technical Drawing

(example)



Application

Ceramic pins are generally used for adjustments and fixation in thermostat production. They are used in thermostat application where a high-temperature electrical insulator is needed and will hold shape and size without wear.

The strong material is ideal for use in insulators, pressure-tight regulators, slide and seal rings, axels, shafts, and bearings, and works well for cold switching applications.

Properties

Ceramic pins manufactured from aluminum oxide AL_2O_3 (95%) are tempered to have excellent hardness, highest rigidity, high thermal conductivity, very good electrical insulation properties, and high to highest abrasion, chemical, and fire resistance.

Technical Data
Ceramic PINs

Material	AL_2O_3 (95%)
Length	4,0 bis 25 mm
Diameter	1,5 bis 4,0 mm

Other lengths, diameters, and materials available upon request.

Porosity	0 Vol%
Density	3,6 g/cm³
Flexural Strength	320 MPa
Elasticity	200 - 280 GPa
Hardness (HV 10)	12 - 15 GPa
Stress Intensity Factor	3,5 - 4,5 MPa$\sqrt{m}$
Weibull Model (m)	10 - 15
Abrasion Resistance	gut
Corrosion Resistance	gut
Mean Coefficient of Thermal Expansion at 30 – 1000 °C	$6 - 8 \cdot 10^{-6} K^{-1}$
Effective Heat Capacity at 30 - 1000 °C	850 - 1050 $Jkg^{-1}K^{-1}$
Thermal Conductivity at 30 - 100 °C	10 - 16 W/(m·K)
Maximum Operating Temperature	1200 - 1400 °C
Thermal Shock Resistance	gut
Dielectric Strength	12 kV/mm
Permittivity number 48 - 62 Hz	9
Loss Factor, at 20 °C; 48-62 Hz	0,5 - 1
Loss Factor, at 20 °C; 1 MHz	1
Specific Resistance at 20 °C	1.000.000.000.000 - 10.000.000.000.000 Ωm
Specific Resistance at 600 °C	1.000.000 Ωm
Temperature for Contact Resistance at 1 MΩcm	700 °C

firedect GmbH

Leibnizstraße 4
72202 Nagold
D - Germany

T +49 7452 929 289 - 0
F +49 7452 929 289 - 9
E info@firedect.de
W www.firedect.de