ADCERAX
ADVANCED CERAMICS

ENGINEERING PRODUCT CATALOG

Relay Alumina Ceramic Housing

Drawing based components for relay and contactor packages

Define the ceramic body, terminal openings and joining interfaces before selecting the purchased stage. This catalog connects housing form, material selection and inspection inputs to a usable RFQ.



Representative housing forms. Appearance identifies form only; the approved drawing defines the ordered geometry, grade and surface state.

Selection path

Find the decision	Page
Housing forms and purchased stage	2
Reference item and drawing dimensions	3
95% and 96% alumina material comparison	4
Interface acceptance and supply definition	5
Engineering RFQ checklist and contact	6

ADCERAX is a China-based advanced ceramics manufacturer for custom precision ceramic components.

01 / PRODUCT SCOPE

Match the housing to the purchased stage

The ceramic housing defines the insulating envelope, terminal openings and contact-chamber geometry. A ceramic body, a metallized body and a joined assembly require different drawings and acceptance criteria.



Representative ceramic and terminal-bearing forms. Metal parts shown are examples of assembly configuration; included components and joining scope must be stated in the quotation.

Requested stage	Define before quotation	Acceptance focus
Ceramic body	Grade; external and cavity geometry; openings; datums; sealing lands.	Dimensions, edges, surfaces and cleanliness.
Metallized or plated body	Ceramic definition plus layer system, pattern, masking and finishing requirements.	Pattern location, layer specification and agreed interface checks.
Joined housing assembly	Ceramic and metal drawings; terminals; joint materials; assembly interfaces.	Assembly dimensions and project electrical or leak-test requirements.

Application fit

EV and energy-storage contactors. Identify DC duty, terminal arrangement, chamber geometry and assembly temperature exposure.

Vacuum or gas-filled relays. Define the completed enclosure, joining responsibility and final leak-test acceptance.

Industrial and high-voltage test relays. Define insulation geometry, environmental conditions and the terminal combinations to be tested.

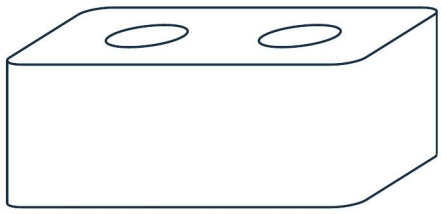
The requested stage is an RFQ input. Supply scope, process responsibility and included tests are confirmed for the specific drawing; no complete-relay rating is assigned by this catalog.

02 / SPECIFICATION DEFINITION

Identify the item and complete the drawing

Existing reference: AT-AO-JD1001. Published size designation: “35*15mm Automotive Relay Ceramic”. Use this exact reference when enquiring; axis assignment, remaining dimensions and tolerances follow the model drawing.

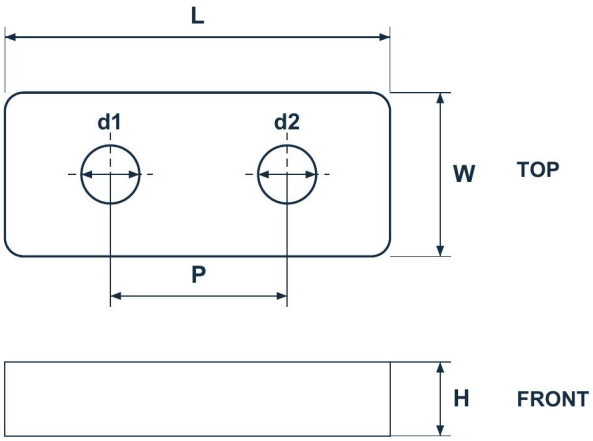
3D EXTERIOR ENVELOPE



Exterior two-opening form

No internal section inferred

GOVERNING EXTERIOR VIEWS



Technical illustration • not to scale • drawing defines the actual form and hole coordinates

Illustrative rectangular two-opening form, not a model drawing. The figure defines RFQ notation only. Other outlines, cavity sections and terminal patterns require their own drawing.

Drawing input	Unit or notation	Required definition
Overall envelope	L, W, H / mm	Overall length, width and height; tolerances and measurement datums.
Terminal openings	d1, d2 / mm	Each finished bore diameter; hole count; bore condition and fit.
Opening layout	P / mm	Centre-to-centre pitch. Also give each hole centre relative to the drawing datums.
Cavity and wall section	Drawing / mm	Cavity outline and depth; minimum wall and base thickness; local ribs or partitions.
Sealing and mounting	Drawing / mm	Land width; mating surfaces; steps, shoulders, flanges and mounting positions where required.
Geometry and surface	Drawing limits	Flatness, parallelism, position and surface finish on identified critical features.
Edges and local features	Drawing / mm	Chamfers, radii, slots, counterbores and allowable edge condition.
Final assembly envelope	Assembly drawing	Dimensions after surface treatment or joining, including terminal height and location.

Dimension values are customer drawing inputs, not a standard size range. Do not infer cavity size, wall thickness or interchangeability from a photograph or the two-number product designation.

03 / MATERIAL SELECTION

Compare the material on the stated test basis

AD-ALU-950 and AD-ALU-960 provide two starting points for housing material discussion. Select grade, geometry, joining route and service conditions together.

Material property	AD-ALU-950	AD-ALU-960
Alumina content	95 wt% nominal	96 wt% nominal
Bulk density	3.75 g/cm³ typical	3.70 g/cm³ typical
Flexural strength at 20 °C	280 MPa typical	300 MPa typical
Thermal conductivity	18–25 W/(m·K) at 25 °C, typical	25 W/(m·K) at 20 °C, typical
Mean linear thermal expansion	7.6×10^{-6}/K 25–800 °C	8.2×10^{-6}/K 25–1000 °C
Dielectric strength	10 kV/mm typical 5 mm specimen	8.3 kV/mm typical AC; 6.35 mm specimen
Volume resistivity at 20 °C	>10^{12} Ω·cm	10^{14} Ω·cm typical

Material reference: ADCERAX Alumina Ceramic Grade Comparison, Rev 16, pages 1–3. Typical values are selection references, not manufacturing tolerances or component design allowables. Nominal purity identifies the material grade.

Electrical selection

The dielectric-strength values use different specimen thicknesses and test conditions. They do not establish a finished housing's working voltage. Do not multiply a coupon value by the proposed wall thickness to assign a relay voltage rating.

Volume resistivity is a material property. Insulation resistance between assembled terminals requires its own voltage, electrode or terminal arrangement, conditioning and acceptance criterion.

Thermal and joining selection

The thermal-expansion values cover different temperature intervals. Match the actual ceramic, metal and joining-material expansion over the assembly and service temperature range; a single table value does not establish joint compatibility.

Specify the grade and order criteria

State the requested grade, electrical duty, operating temperature, atmosphere and joining route. Define any required material verification, sample basis and acceptance limits in the purchase specification. Material colour and nominal purity alone do not establish package suitability.

Scope: this comparison covers 95% and 96% alumina references. Additional grade requests require a separate, applicable material selection review.

04 / ENGINEERING AND SUPPLY

Define interfaces and acceptance together

Freeze the drawing revision and purchased stage before agreeing the inspection plan. Ceramic condition, metallization and final assembly tests address different failure risks.

Control point	Specify for this housing	Acceptance or evidence to agree
Ceramic geometry	Cavity, wall and base thickness; terminal holes; sealing and mounting datums.	Critical-characteristic list, measurement stage, temperature, gauge and sampling.
Surface and edge condition	Sealing-face finish; bore condition; chamfers; chip and crack criteria; cleanliness.	Inspection zones, defect limits, magnification and sample rule.
Metallization and plating	Layer material and sequence; pattern; overlap; edge setback; masked insulation areas.	Layer thickness and pattern checks; relevant adhesion or joining assessment.
Terminal and joining interface	Metal and terminal materials; mating gap; joint geometry; thermal cycle and atmosphere.	Dimensional checks after joining; joint acceptance and responsibility for each operation.
Electrical acceptance	AC/DC duty; terminal pairs; voltage; duration; humidity; leakage or insulation criteria.	Agreed test method and limits at the ordered component or assembly stage.
Sealed-package acceptance	Final enclosure; gas or vacuum requirements; pressure difference and test conditions.	Leak-test method, unit, limit, fixture background and any post-cycle retest.

A test at one stage does not certify the next

Low material water absorption does not prove a joined package is hermetic. Leak acceptance applies to the completed sealing system. Relay switching life, current rating and system certification require validation of the complete relay.

Handling and packaging

Protect thin walls, edges and sealing lands from point loads and part-to-part contact. Keep joining surfaces clean. Specify separated trays or protective dividers, moisture protection and any project-specific cleanliness or ESD requirement for the purchased assembly.

Repeat-order definition

Agree the part number and drawing revision, grade, quantity, lot identification, inspection records, protective packing and destination. List any required conformity statement or test report in the RFQ; the quotation defines the documentation supplied.

MOQ, tooling, sample schedule, production lead time and included test scope are quotation-specific.

05 / ENGINEERING RFQ

Send the housing reference or drawing

Start with the information already available. Include intended use, quantity and the stage you want to purchase so the engineering review addresses the correct component.

Existing reference

Quote AT-AO-JD1001 and “35*15mm Automotive Relay Ceramic”, catalog ADC-CAT-R51-001 Rev 01, then add quantity, required grade or current drawing, intended service and any deviations.

New or revised design

Send a dimensioned drawing and revision, 3D model, sketch or sample photographs. Mark the critical interfaces and indicate whether the enquiry is for a ceramic body, a metallized/plated body or a joined assembly.

RFQ field	What to include
Part definition	Reference number or drawing/model and revision; purchased stage.
Geometry	Envelope, cavity and wall section; openings and pitch; datums, tolerances and critical faces.
Material and surface	Requested grade; sealing-face finish; cleanliness and edge requirements.
Interfaces	Metallization/plating pattern; terminals and metals; mating and joining requirements.
Service conditions	AC/DC electrical duty; current; temperature range; atmosphere, humidity and pressure.
Acceptance	Dimensional and visual criteria; electrical or leak tests; sampling and required reports.
Commercial brief	Sample and production quantities; repeat demand; destination and requested schedule.

Request an engineering quotation

info@adcerax.com

View the relay alumina ceramic housing product page

Telephone +86-0731-84428843
WhatsApp +86 19311583352

HUNAN ATCERA CO.,LTD

ADCERAX | Custom precision ceramic components
adcerax.com

The agreed drawing, specification and quotation define the ordered part, acceptance criteria and supply scope.