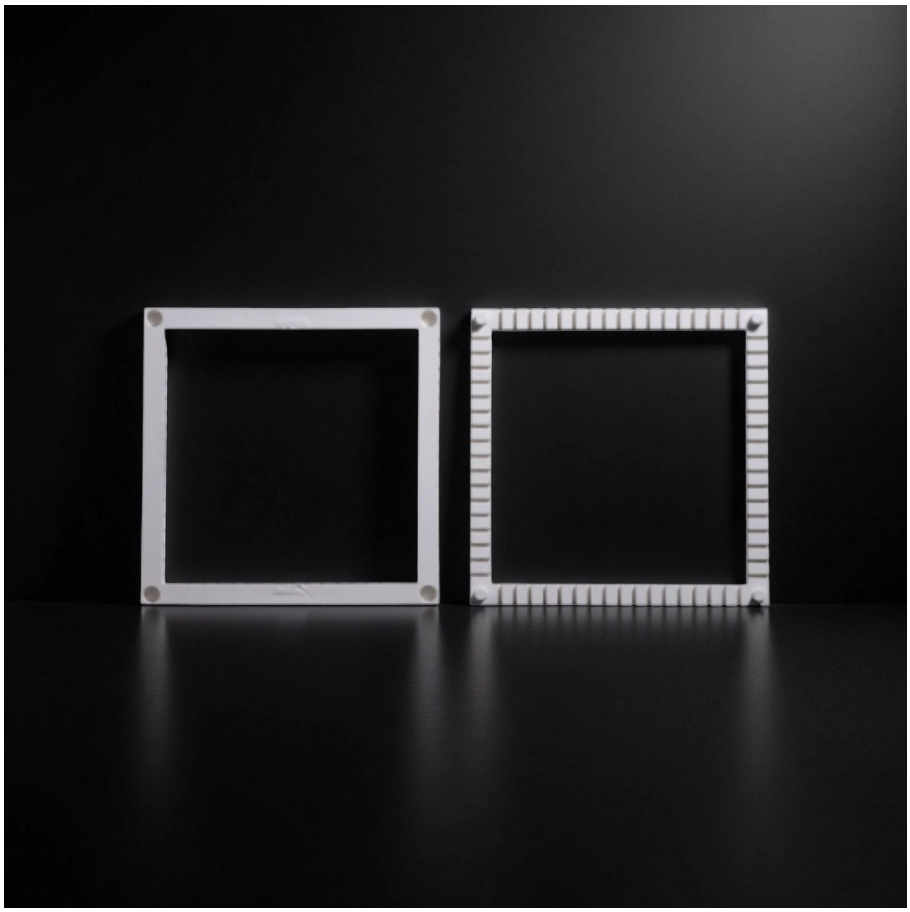
ADCERAX

ENGINEERING PRODUCT CATALOG

Alumina PCB Support and Insulation Frames

Square and rectangular references with drawing-defined windows and mounting features



Ceramic frame forms and visible features. Select dimensions and grade from the specification; the photograph does not define either.

Select the frame around the assembly

Compare the outer envelope, window, border width and height together. Then define the PCB contact, housing fit and electrical separation for your application.

15 catalogue references | Six material grades | Custom drawing inputs

ADC-CAT-R36-001 | Revision 01

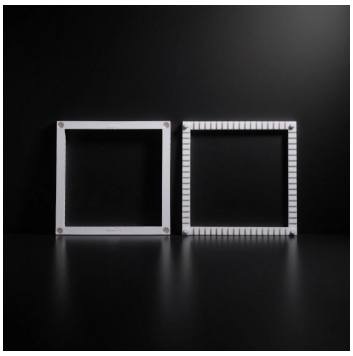
ADCERAX supports drawing review, ceramic production and inspection against agreed specifications.

Product details and engineering enquiry

02 ENGINEERING PRODUCT CATALOG

Choose the frame route

For OEM engineers and technical buyers specifying a ceramic support around a PCB, sensor or electronic housing.



Representative frame photograph. Visible form is the evidence; exact grade, dimensions and inspection criteria are order-defined.

Route	Start with	Page
Rectangular catalogue reference	AT-CF-F item; outer A and B, Width, Height	3
Square catalogue reference	AT-CF-Z item; A = B, Width, Height	4
New or modified frame	Drawing revision, windows, mounting and mating details	5
Material selection	Electrical, thermal and mechanical conditions	6-7
Acceptance and supply	Inspection state, packing and repeat-order controls	8
Quotation	Reference or drawing with known duty and quantity	9

Match the application to the design inputs

Assembly	Selection focus
PCB and industrial electronics	Board outline, contact areas, component clearance, screw/clamp load and housing fit.
Sensor and actuator housing	Window alignment, electrodes, contact finish, chemical exposure and joining.
Heater-adjacent equipment	Actual frame and component temperatures, heat flow, expansion, cycles and support load.
Communication or RF housing	Operating frequency, dielectric loss, conductor layout, surface treatment and assembly tests.

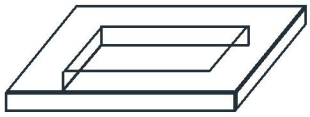
Catalogue dimensions identify the reference. Exact grade, tolerances, surface requirements, availability and final acceptance are agreed for the order.

03 ENGINEERING PRODUCT CATALOG

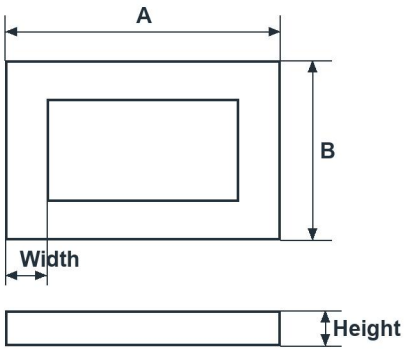
Rectangular frame references

Choose the paired outer dimensions first, then check the opening, contact width and mounting clearance on the drawing.

3D recognition



Governing dimension views



Not to scale. Geometry and symbols only. The agreed part drawing governs.

A and B are outer dimensions; Width is border width and Height is frame thickness. Not to scale. The key shows an unfeatured single-window form; holes, steps and corner details are drawing-defined.

Item number	A mm	B mm	Width mm	Height mm	Catalogue purity %
AT-CF-F001	20	30	3	4	96-99
AT-CF-F002	45	62	5	5	96-99
AT-CF-F003	70	80	4	6	96-99
AT-CF-F004	106	120	5	12	96-99
AT-CF-F005	160	100	10	8	96-99
AT-CF-F006	200	180	20	35	96-99

Dimensions are catalogue reference values. Catalogue purity entries are 96-99%; select the exact grade for the ordered frame. No stock status or general tolerance is implied.

Before quoting this reference

Request the reference drawing to confirm the usable opening. Cite the item number and catalogue revision, and specify the PCB support face, housing fit and acceptance requirements. Identify any hole, slot, step or finish deviation.

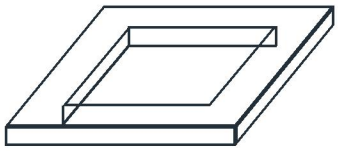
Confirm the ordered grade, quantity, destination, inspection documents and target schedule. Final supply and commercial terms are quotation-controlled.

04 ENGINEERING PRODUCT CATALOG

Square frame references

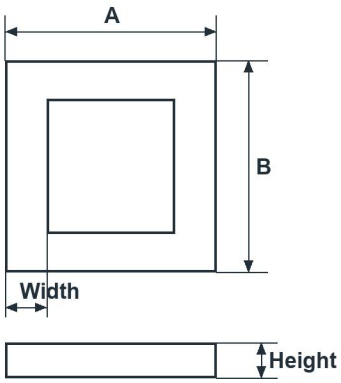
A = B identifies the outer side length. Use border width and frame height with the window and mounting requirements.

3D recognition



Square frame: A = B

Governing dimension views



Not to scale. Geometry and symbols only. The agreed part drawing governs.

A = B is the outer side length; Width is border width and Height is frame thickness. Not to scale. The agreed part drawing defines the window, corners and any mounting features.

Item number	A = B mm	Width mm	Height mm	Catalogue purity %
AT-CF-Z001	20	5	5	96-99
AT-CF-Z002	25	4	3	96-99
AT-CF-Z003	30	3.5	8	96-99
AT-CF-Z004	45	4.8	7.5	96-99
AT-CF-Z005	60	12	16	96-99
AT-CF-Z006	75	20	20	96-99
AT-CF-Z007	86	15	15	96-99
AT-CF-Z008	120	45	16	96-99
AT-CF-Z009	130	30	18	96-99

Dimensions are catalogue reference values. Catalogue purity entries are 96-99%; specify the exact ordered grade. Tolerances, availability and acceptance are quotation-controlled.

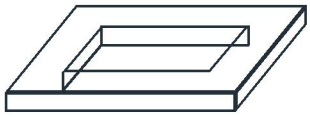
Request the reference drawing to confirm the usable opening; supply your required opening explicitly. For thin or large frames, define the support face and whether flatness is measured free or assembled.

05 ENGINEERING PRODUCT CATALOG

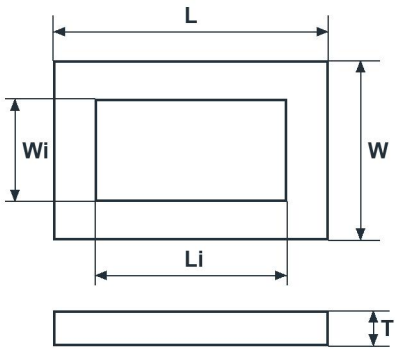
Define a custom frame

Use a drawing, sketch, marked photograph or sample to define a new frame or changes to a catalogue reference.

3D recognition



Governing dimension views



Not to scale. Geometry and symbols only. The agreed part drawing governs.

Not to scale. L and W define the outer envelope; Li and Wi define the illustrated single opening; T defines thickness. Multiple windows, unequal borders and local sections are specified individually on the drawing.

Drawing field	What to supply
L and W or outer profile	Dimensions in mm, orientation, general and critical tolerances.
Li and Wi or each window	Opening size and position, window count, corner radii and individual beam/border widths.
T and local cross-sections	Thickness and tolerance at each support or stepped section.
Mounting features	Hole/slot size and location; countersinks, recesses, notches and lead clearances.
Datums and shape	Support plane, locating faces, flatness, parallelism, bow/twist and measurement support.
Functional surfaces and edges	As-fired/ground/polished faces; Ra/Rz where required; chamfers, chip/crack limits and cleanliness.
Mating assembly	PCB/housing drawings, clamps, washers, adhesive or seal details; clearance and thermal movement.

Review geometry as a combination: opening, narrow beams, corners, holes and clamping affect machining and assembly stress. Size and finish feasibility are established for the selected drawing.

06 ENGINEERING PRODUCT CATALOG

Electrical material selection

The catalogue references on pages 3-4 carry 96-99% purity entries. The six grades below support material comparison and drawing-based enquiries; confirm the exact grade for the selected frame. These specimen values are not frame working-voltage ratings.

Property and basis	999 99.90%	997 99.70%	995 99.50%	990 99.00%	960 96%	950 95%
Dielectric strength kV/mm; typical	10	10	10	10	8.3 AC	10
Specimen thickness mm	5	5	5	5	6.35	5
Relative permittivity 1 MHz; typical	9.8	9.8	9.7	9.6	9.0	9.4
Dissipation factor 1 MHz	<0.0001	<0.0001	<0.0001	0.0006	0.0002	0.0004
Volume resistivity Ω·cm; 20°C	$>10^{14}$	$>10^{14}$	$>10^{14}$	$>10^{14}$	10^{14} typical	$>10^{12}$

Grade headers abbreviate AD-ALU-999 / 997 / 995 / 990 / 960 / 950; percentages are nominal alumina content. Permittivity and loss are at 25°C except AD-ALU-960: permittivity at room temperature and loss at 20°C.

Define electrical acceptance for the frame

Design input	Acceptance definition
Operating duty	AC/DC, working and peak voltage, frequency/waveform, temperature, humidity, atmosphere and contamination.
Insulation geometry	Minimum ceramic thickness, creepage, clearance, conductor/solder edges, windows, holes and coatings.
Test setup	Voltage, waveform, electrodes/fixture, medium, ramp, duration, leakage limit and failure criterion.
Assembly qualification	Include the PCB, metal housing and surface treatments where they affect insulation; define environmental conditioning.

Do not multiply the specimen breakdown field by frame thickness to obtain an assembly voltage rating. For RF designs, use dielectric data at the actual service frequency and temperature.

Material reference: ADCERAX Alumina Ceramic Grade Comparison, Rev 16, page 3. Values retain the specimen basis and are separate from purchase acceptance limits.

07 ENGINEERING PRODUCT CATALOG

Thermal and mechanical selection

Evaluate the ceramic with the PCB, housing, joints and mounting constraint. Material references do not establish frame load, screw torque, thermal resistance or cycle life.

Property and basis	999 99.90%	997 99.70%	995 99.50%	990 99.00%	960 96%	950 95%
Thermal conductivity W/(m·K); typical	35-42	35-40	30-38	24	25	18-25
Mean CTE 10^-6/K	7.6	7.6	7.6	7.2	8.2	7.6
Material temperature guide °C; application-dependent	1750	1700	1650	1600	1600 air max.	1400
Density g/cm³; typical	3.94	3.94	3.90-3.92	3.80-3.91	3.70	3.75
Flexural strength MPa; 20°C; typical	315-340	330	320-350	300-320	300	280
Young’s modulus GPa; typical	359-375	370	365	355	275	340

Headers abbreviate the AD-ALU grade codes; percentages are nominal content. Conductivity is at 25°C except 960 at 20°C. Mean CTE is over 25-800°C except 960 over 25-1000°C. The 960 modulus is at 20°C. Temperature guides are material selection references, not continuous-duty or loaded-life ratings.

Resolve the frame and assembly conditions

Provide steady and peak temperatures for the frame, PCB and housing; temperature gradient, ramp, dwell, cycling and atmosphere. Use expansion data matching the design interval and allow the specified movement at contacts.

Identify PCB support areas, clamp contact, loads, vibration and connector forces. Narrow beams, window corners, holes and point contacts need attention in the actual geometry.

If the frame includes metallisation, coating, bonding or sealing, define the layer stack, coverage, joints, cleanliness and separate treated-part acceptance.

Material reference: ADCERAX Alumina Ceramic Grade Comparison, Rev 16, pages 1-2. Grade AD-ALU-960 is distinct from AD-ALU-950; material properties do not transfer between grades.

08 ENGINEERING PRODUCT CATALOG

Acceptance and repeat supply

Agree acceptance at the purchased-item level, using the drawing revision and actual assembly requirements.

Object	Acceptance to agree
Material batch	Exact grade and relevant batch/material records with specimen, method and conditions.
Finished frame	Outer/window dimensions, beam widths, thickness, datums, functional-face shape, holes/slots, edges, cracks, cleanliness and traceability.
Treated frame	Layer/joint definition, coverage, adhesion, insulation, shape and cleaning requirements.
PCB assembly	Housing fit, fastening, loads, thermal duty, voltage, vibration and functional acceptance.

Flatness for a thin or multi-window frame

Identify the functional support face and datum. State the measurement support and whether the frame is measured free or assembled. Agree flatness, bow or twist limits with the selected drawing and inspection setup.

Installation and handling

Check the part and drawing revision before assembly. Clean the housing and support plane, remove burrs and check alignment. Use the specified support, washers, clamp plates or compliant interface with the validated fastening sequence and clamp limits.

Protect narrow beams, windows and corners from impact. Apply the assembly’s validated heating and cooling procedure. Select cleaning and drying compatible with the ceramic, surface treatment, adhesive and electronics.

Packing and repeat-order definition

Request individual separation and support that prevents ceramic-to-ceramic contact and edge impact. Identify sensitive windows, machined faces and corners; agree trays, face protection and outer packing for the shipment.

Retain the accepted drawing revision, grade, inspection plan, sample decision and part/batch identification. Evaluate changes in design, surface treatment or service conditions before repeat supply.

Inspection reports, sampling, packing, quantity and lead time are agreed in the quotation and order; the requirements above are not blanket capability guarantees.

09 ENGINEERING PRODUCT CATALOG

Request an engineering quotation

Send the reference or drawing with the information you know. Mark unknown details for follow-up so the frame enquiry can proceed to specification review.

Existing catalogue reference

Cite ADC-CAT-R36-001 Rev 01 and the AT-CF-F or AT-CF-Z item. Specify the exact grade, quantity, required deviations, PCB/housing fit, service conditions, inspection documents, delivery destination and target schedule.

New or drawing-defined frame

Attach a dimensioned drawing with revision, model, sketch or sample details. Include outer profile and thickness; each window and beam; holes/slots and datums; critical tolerances; support/functional-face finish; edge and cleanliness requirements.

Enquiry group	Useful information
Application	PCB, sensor, housing or thermal assembly; ceramic-only, treated part or assembly scope.
Service	Temperatures/cycles; voltage/frequency/environment; load, vibration and mounting constraint.
Material	Exact AD-ALU grade or material preference for engineering review.
Acceptance	Inspection methods, measurement support, sampling, limits and required reports.
Supply	Sample and repeat quantities, identification, packing, destination and target schedule.

Send your drawing and requirements

Email info@adcerax.com

Product enquiry adcerax.com/product/alumina-ceramic-frame/

Phone +86-0731-84428843
WhatsApp +86 19311583352

We will review the frame enquiry and reply with the next steps. The quotation defines the final specification, inspection scope, availability and commercial terms.

ADCERAX | HUNAN ATCERA CO.,LTD

Custom ceramic components with drawing review and engineering coordination.