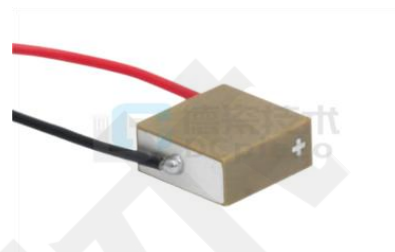




Product specification

The **DCC3-050502D92** piezoelectric ceramic square plate is composed of alternating layers of ceramic and electrodes stacked crosswise, with a maximum displacement of up to 3.2 μm . The red wire serves as the positive electrode (+) of the product, and the black wire serves as the negative electrode (-).



DCC3-050502D92

Performance Parameters

| | | | |
|--|-----------------------------|--------------------------------|------------------------------|
| Drive Voltage Range | -30~150 V | Capacitance | 300nF \pm 15% |
| Displacement (Free Stroke) at 150 V | 3.2 μm \pm 15% | Dissipation Factor | <2.0% |
| Hysteresis | <15% | Resonant Frequency | 300kHz |
| Stiffness | 312 N/ μm | Blocking Force at 150 V | / |
| Curie Temperature | 230 $^{\circ}\text{C}$ | Operating Temperature | -25 ~ 130 $^{\circ}\text{C}$ |
| Product Size | L: 5.0mm | Outer Dimensions | L: 5.0 \pm 0.1mm |
| | W: 5.0mm | | W: 5.0 \pm 0.1mm |
| | H: 2.92mm | | H: 2.92 \pm 0.05mm |

- All specifications are quoted at 25 $^{\circ}\text{C}$, unless otherwise stated.
- The displacement may vary slightly for different loads, and the maximum displacement occurs when used with the recommended load.

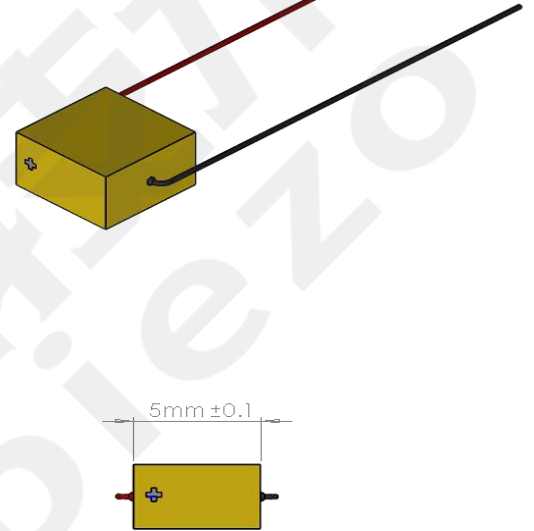
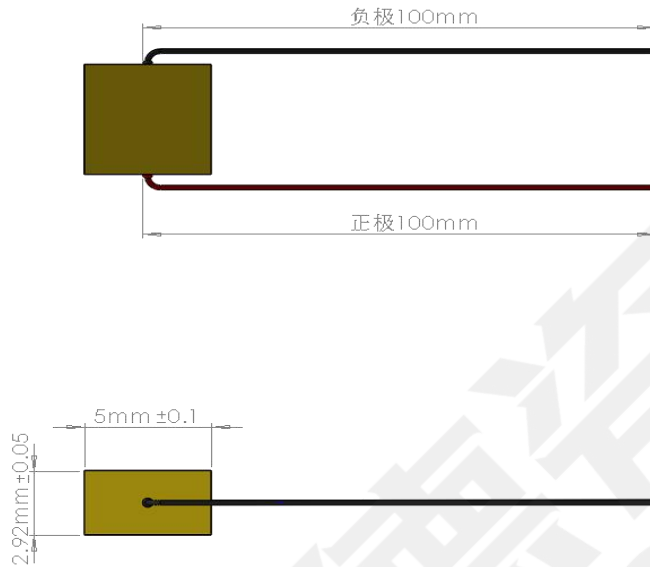
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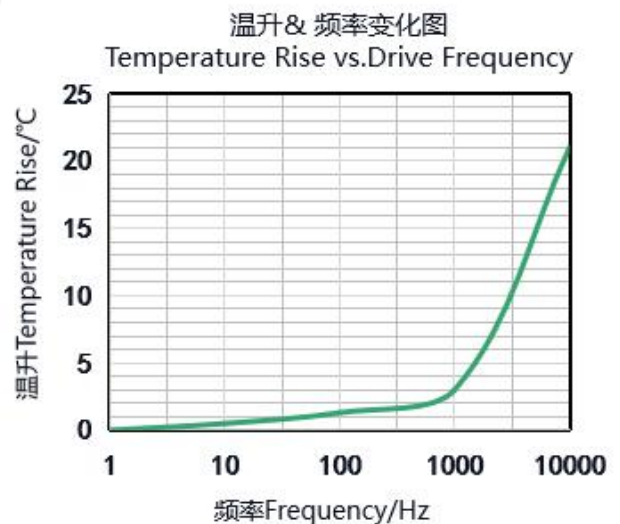
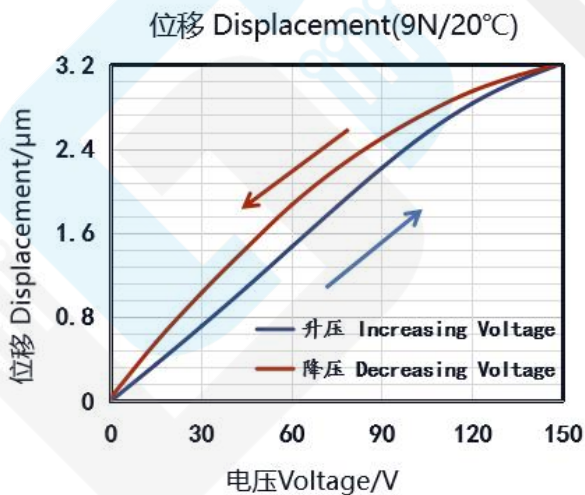


Product specification

Product Size



Performance Curve



- These temperature rises were measured after applying a sine-wave drive voltage ranging from 0 to 150V at the specified frequency for 10 minutes.

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Product specification



Matters Needing Attention

1. Storage Conditions & Precautions:

Temperature: $<50^{\circ}\text{C}$, Humidity: $<40\%\text{Rh}$. Avoid impact and compression. Store in vacuum-sealed bags for long-term preservation. When not in use, connect to a resistive discharge ($\geq 100\text{k}\Omega$) or short-circuit (for low-capacitance ceramics).

2. Operating Conditions & Precautions:

Temperature: Maximum operating temperature $\leq 130^{\circ}\text{C}$ (preferably $<60^{\circ}\text{C}$). Add heat dissipation measures if temperature exceeds 80°C .

Humidity: $<50\%\text{Rh}$. In high-humidity environments, preheat at low voltage before use to avoid creepage discharge.

Dust Avoidance: Dust adhesion on ceramic surfaces may reduce insulation resistance.

Clearance: Maintain a gap $>1.6\text{mm}$ between ceramics and other conductors.

Safety: Do not immerse piezoelectric stacks in organic solvents or expose to flammable gases/liquids.

3. Assembly Precautions:

Polarity: Red wire = positive (+), black wire = negative (-). Reverse polarity may cause mechanical failure.

Handling: Handle with care to avoid impact. Wear gloves to prevent oil contamination.

Fit Tolerance: Assemble with clearance fit first, then tighten. Avoid interference fit to prevent ceramic compression.

Electrostatic Protection: Maintain $>1.6\text{mm}$ gap between ceramics and metal parts to avoid static discharge.

Adhesive Bonding: Ensure flat bonding surfaces and remove excess glue to minimize contamination.

Soldering: Limit contact time under high temperature to <1 second to protect ceramics and coatings.

High-Temperature Assembly: Control temperature $<120^{\circ}\text{C}$ to prevent depolarization, adhesive failure, or coating damage.

4. Preload Instructions:

Load Application: Apply external load to the center of the stack or distribute uniformly on the

Guangdong DCpiezo Technology Co., Ltd.



Product specification

mounting surface. Ensure contact surfaces are flat and smooth.

Force Direction: Piezoelectric stacks can only withstand axial forces. Shear or torsional forces may cause mechanical failure.

Preload Force: Preload should not exceed 40% of maximum blocking force, and its direction must align with the motion axis to minimize shear stress.

