

Kemet HR-2852442-2500

Kemet SMD Multilayer Ceramic Capacitor C Series - 0805, 2.2 µF, 16V Instruction Manual

Model: HR-2852442-2500

1. INTRODUCTION AND OVERVIEW

This manual provides essential information for the proper handling, installation, and application of the Kemet C Series SMD Multilayer Ceramic Capacitor. This component is designed for surface mount applications in various electronic circuits, offering stable performance in a compact 0805 package.

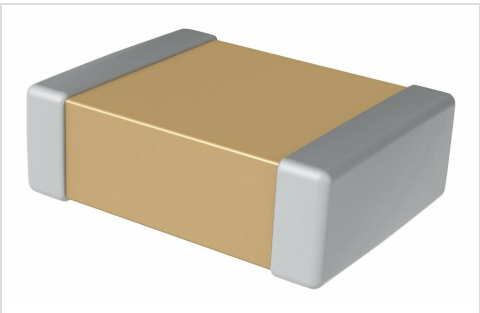


Image 1.1: A Kemet 0805 SMD Multilayer Ceramic Capacitor. The component features a rectangular ceramic body with metallic end terminations for surface mounting.

2. SPECIFICATIONS

Key technical specifications for the Kemet C Series SMD Multilayer Ceramic Capacitor are detailed below:

Characteristic	Value
Manufacturer	KEMET
Model Number	HR-2852442-2500
Ceramic Capacitor Case	0805 [2012 Metric]
Capacitance	2.2 µF
Voltage Rating	16 V

Characteristic	Value
Capacitance Tolerance	+80%, -20%
Dielectric Characteristic	Y5V
Product Range	C Series
Operating Temperature Min	-30°C
Operating Temperature Max	85°C
Material	Ceramic

3. SETUP AND INSTALLATION

Proper handling and installation are crucial for the reliable operation and longevity of this SMD ceramic capacitor. Observe the following guidelines:

- **Electrostatic Discharge (ESD) Precautions:** Always handle the capacitor in an ESD-safe environment to prevent damage from static electricity. Use grounded wrist straps and work surfaces.
- **Physical Handling:** Avoid applying excessive mechanical stress to the component, especially during placement and soldering. Ceramic capacitors can be brittle.
- **Soldering:** This component is designed for surface mount technology (SMT) and is typically installed using reflow soldering processes. Adhere to recommended soldering profiles to prevent thermal shock or damage to the component and its terminations. Consult IPC standards for optimal soldering practices.
- **Pad Design:** Ensure the PCB pad layout is appropriate for the 0805 package size to facilitate proper solder joint formation and mechanical stability.
- **Cleaning:** If cleaning is required after soldering, use mild solvents and avoid harsh chemicals or aggressive brushing that could damage the component or solder joints.

4. OPERATING PRINCIPLES

The Kemet C Series Multilayer Ceramic Capacitor functions as a passive electronic component designed to store electrical energy in an electric field. It is commonly used for decoupling, bypassing, filtering, and timing applications in electronic circuits.

The Y5V dielectric characteristic indicates a high capacitance change over temperature and voltage. This type of capacitor is suitable for applications where capacitance stability is not critical, but high capacitance in a small package is required, such as bypass or filtering in non-critical circuits.

5. MAINTENANCE

To ensure the longevity and performance of the capacitor, adhere to these maintenance guidelines:

- **Storage Environment:** Store capacitors in their original packaging in a dry, temperature-controlled environment (typically 5°C to 35°C with relative humidity below 60%) to prevent oxidation of terminations and absorption of moisture.
- **Shelf Life:** Observe the manufacturer's recommended shelf life for optimal solderability.
- **Inspection:** Periodically inspect stored components for any signs of damage or degradation before use.

6. TROUBLESHOOTING

While passive components like ceramic capacitors are generally robust, issues can arise from improper handling or application. Consider the following if unexpected behavior occurs in a circuit utilizing this capacitor:

- **Incorrect Component:** Verify that the correct capacitor value (2.2 μ F, 16V, Y5V) and package size (0805) have been used for the application.
- **Soldering Defects:** Inspect solder joints for proper formation, ensuring no shorts, opens, or cold joints. Poor soldering can lead to intermittent operation or complete failure.
- **Operating Parameters:** Confirm that the capacitor is operating within its specified voltage (16V max) and temperature (-30°C to 85°C) ranges. Exceeding these limits can cause degradation or failure.
- **Mechanical Damage:** Check for any physical cracks or damage to the ceramic body, which can occur from excessive mechanical stress.

7. WARRANTY AND SUPPORT

For technical support, warranty information, or further inquiries regarding the Kemet C Series SMD Multilayer Ceramic Capacitor, please refer to the official Kemet website or contact your authorized distributor. Detailed product datasheets and application notes are available through these channels.

Kemet Official Website: www.kemet.com

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question