

Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs) KPS Series, High Voltage, X7R Dielectric, 500 VDC – 630 VDC (Commercial Grade)

Overview

KEMET Power Solutions (KPS) High Voltage stacked capacitors utilize a proprietary lead-frame technology to vertically stack one or two multilayer ceramic chip capacitors into a single compact surface mount package. The attached lead-frame mechanically isolates the capacitor(s) from the printed circuit board, thereby offering advanced mechanical and thermal stress performance. Isolation also addresses concerns for audible microphonic noise that may occur when a bias voltage is applied. A two-chip stack offers up to double the capacitance in the same or smaller design footprint when compared to traditional surface mount MLCC devices. Providing up to 10 mm of board flex capability, KPS Series High Voltage capacitors are environmentally friendly and in compliance with RoHS legislation.

KEMET's KPS Series devices in X7R dielectric exhibit a predictable change in capacitance with respect to time and

voltage, and boast a minimal change in capacitance with reference to ambient temperature. Capacitance change is limited to $\pm 15\%$ from -55°C to $+125^{\circ}\text{C}$. These devices are capable of Pb-Free reflow profiles and provide lower ESR, ESL and higher ripple current capability when compared to other dielectric solutions.

Conventional uses include both snubbers and filters in applications such as switching power supplies and lighting ballasts. Their exceptional performance at high frequencies has made high voltage ceramic capacitors the preferred dielectric choice of design engineers worldwide. In addition to their use in power supplies, these capacitors are widely used in industries related to automotive (hybrid), telecommunications, medical, military, aerospace, semiconductors, and test/diagnostic equipment.



Ordering Information

C	2220	C	105	M	C	R	2	C	7186
Ceramic	Case Size (L"x W")	Specification/ Series	Capacitance Code (pF)	Capacitance Tolerance ¹	Rated Voltage (VDC)	Dielectric	Failure Rate/ Design	Leadframe Finish ²	Packaging/Grade (C-Spec) ³
	2220	C = Standard	2 significant digits + number of zeros.	K = $\pm 10\%$ M = $\pm 20\%$	C = 500 V B = 630 V	R = X7R	1 = KPS Single Chip Stack 2 = KPS Double Chip Stack	C = 100% Matte Sn	7186 = 7" Reel Unmarked 7289 = 13" Reel Unmarked

¹ Double chip stacks ("2" in the 13th character position of the ordering code) are only available in M ($\pm 20\%$) capacitance tolerance.

Single chip stacks ("1" in the 13th character position of the ordering code) are available in K ($\pm 10\%$) or M ($\pm 20\%$) tolerances.

² Additional leadframe finish options may be available. Contact KEMET for details.

³ Additional reeling or packaging options may be available. Contact KEMET for details.

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[C2220C224MBR1C7186](#) [C2220C474MBR2C7186](#) [C2220C105MCR2C7186](#) [C2220C474MCR1C7186](#)