



MULTILAYER CERAMIC CHIP CAPACITORS

HV High Voltage Series

High-Voltage SMD MLCC Capacitors



KEY BENEFITS

- High breakdown voltage increases reliability against voltage spikes
- Serial electrode design reduces risk of short circuit due to mechanical cracks

APPLICATIONS

- Input / output filtering in power supplies and analog and digital modems
- Snubber capacitor in power converters
- Buffer capacitor in voltage multipliers

RESOURCES

- Datasheet: HV High Voltage Series - www.vishay.com/doc?45228
- For technical questions contact MLCC@vishay.com
- Material categorization: for definitions please see www.vishay.com/doc?99912



RoHS
COMPLIANT

HALOGEN
FREE

GREEN
(5-2008)

A **WORLD OF**
SOLUTIONS



MULTILAYER CERAMIC CHIP CAPACITORS

HV High Voltage Series

Surface-Mount Multilayer Ceramic Chip Capacitor Solutions for High-Voltage Applications



ELECTRICAL SPECIFICATIONS

X7R

GENERAL SPECIFICATION

Note

Electrical characteristics at +25 °C unless otherwise specified

Operating Temperature: -55 °C to +125 °C

Capacitance Range: 180 pF to 15 nF

Voltage Range: 3000 V_{DC}, 4000 V_{DC}, 5000 V_{DC}

Temperature Coefficient of Capacitance (TCC):
± 15 % from -55 °C to +125 °C, with 0 V_{DC} applied

Dissipation Factor (DF):
2.5 % maximum at 1.0 V_{RMS} and 1 kHz

Insulating Resistance:
at +25 °C 100 000 MΩ min. or 1000 ΩF whichever is less
at +125 °C 10 000 MΩ min. or 100 ΩF whichever is less

Aging Rate: 1 % maximum per decade

Dielectric Strength Test:
performed per method 103 of EIA 198-2-E
Applied test voltages
3000 V_{DC}- / 4000 V_{DC}- / 5000 V_{DC}-rated:
min. 120 % of rated voltage

ENVIRONMENTAL STATUS	
TERMINATION CODE	X
TERMINATION DESCRIPTION	Ni barrier 100 % tin plated matte finish
RoHS COMPLIANT	Yes
VISHAY GREEN	Yes

QUICK REFERENCE DATA				
DIELECTRIC	CASE	MAXIMUM VOLTAGE (V)	CAPACITANCE	
			MINIMUM	MAXIMUM
X7R	1812	5000	180 pF	3.9 nF
	1825	5000	330 pF	10 nF
	2220	5000	390 pF	10 nF
	2225	5000	470 pF	15 nF

Note

- Detail ratings see "Selection Chart"

ORDERING INFORMATION								
HV2220	Y	152	K	X	M	A	T	HV ⁽²⁾
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING ⁽¹⁾	MARKING	PACKAGING	PROCESS CODE
1812 1825 2220 2225	Y = X7R	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. Examples 152 = 1500 pF	J = ± 5 % K = ± 10 % M = ± 20 %	X = Ni barrier 100 % tin plated matte finish	H = 3000 V V = 4000 V M = 5000 V	A = unmarked	T = 7" reel / plastic tape R = 11 1/4" / 13" reel / plastic tape	HV = high voltage

Notes

- DC voltage rating should not be exceeded in application. Other application factors may affect the MLCC performance. Consult for questions: mlcc@vishay.com
- Process code with 2 digits has to be added.

Revision 05-Aug-15