



# RADIAL LEADED MULTILAYER CERAMIC CAPACITORS

## K...H Series

High Operating Temperature Radial Leaded Multilayer Ceramic Capacitors for Automotive Applications, 50 V<sub>DC</sub>, 100 V<sub>DC</sub>, 200 V<sub>DC</sub>



### KEY BENEFITS

- AEC-Q200 qualified with PPAP available
- High reliability MLCC insert with wet build process and noble metal electrodes
- High operating temperature up to 175 °C
- Temperature characteristics:  
C0G ( $\pm 30$  ppm/K within -55 to +175 °C), and  
X0U (+22% / -56% within -55 to +175 °C)
- High capacitance with small size
- Crimp and straight lead styles

### APPLICATIONS

#### EMI filtering in:

- Automotive sensors (hall sensors, exhaust gas sensors...)
- Cable harnesses
- Automotive DC motors/actuators (throttle valve motor, brake systems, turbo charger, air management)

### RESOURCES

- Datasheet: K...H Series - [www.vishay.com/doc?45211](http://www.vishay.com/doc?45211)
- For technical questions contact [CDC@vishay.com](mailto:CDC@vishay.com)
- Material categorization: for definitions, please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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QUICK REFERENCE DATA						
DESCRIPTION	VALUE					
Ceramic Class	1			2		
Ceramic Dielectric	C0G			X0U		
Voltage (V <sub>DC</sub> )	50	100	200	50	100	200
Min. Capacitance (pF)	100	100	100	47 000	47 000	82 000
Max. Capacitance (pF)	12 000	12 000	8200	1 000 000	470 000	180 000
Mounting	Radial					

**MARKING**

Marking indicates capacitance value and tolerance in accordance with "EIA 198".

**OPERATING TEMPERATURE RANGE**

-55 °C to +175 °C (voltage derating above 150 °C)

**TEMPERATURE CHARACTERISTICS**

Class 1: C0G ( $\pm 30$  ppm/K within -55 to +175 °C)

Class 2: X0U (+22% / -56% within -55 to +175 °C)

**SECTIONAL SPECIFICATIONS**

Climatic category (acc. to EN 60058-1)  
55/125/21

**APPROVALS**

EIA 198  
IEC 60384-9  
AEC-Q200

**DESIGN**

- The capacitors consist of a high reliability MLCC
- Leads wires are 0.5 mm or 0.6 mm and are made of 100 % tinned copper clad steel wire
- The capacitors may be supplied with straight or kinked leads having a lead spacing of 2.5 mm and 5.0 mm
- Coating is made of flame retardant epoxy resin in accordance with UL 94 V-0

**CAPACITANCE RANGE**

100 pF to 1  $\mu$ F

**TOLERANCE ON CAPACITANCE**

$\pm 5$  %,  $\pm 10$  %,  $\pm 20$  %

**RATED VOLTAGE**

50 V<sub>DC</sub>, 100 V<sub>DC</sub>, 200 V<sub>DC</sub>

**TEST VOLTAGE**

- 50 V<sub>DC</sub> and 100 V<sub>DC</sub>: 250 % of rated voltage
- 200 V<sub>DC</sub>: 200 % of rated voltage

**INSULATION RESISTANCE**

- 50 V<sub>DC</sub>, 100 V<sub>DC</sub>: 100 G $\Omega$  or 1000  $\Omega$ F whichever is less at rated voltage within 2 min of charging
- 200 V<sub>DC</sub>: 10 G $\Omega$  or 100  $\Omega$ F whichever is less at rated voltage within 2 min of charging

**DISSIPATION FACTOR**

Class 1: 0.1 % max.

(C  $\leq$  1000 pF, at 1 MHz, 1 V; C > 1000 pF, at 1 kHz, 1 V)

Class 2: 2.5 % max. (at 1 kHz, 1 V)

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