

Multilayer Ceramic Dipped Axial Capacitors 200 V_{DC} and 500 V_{DC}

DIELECTRIC CHARACTERISTICS		
DIELECTRIC ACCORDING TO EIA	C0G (NP0)	X7R
According to CECC	CG	C1 (2C1)
Capacitance Range: at 1 MHz, 1 V; where C ≤ 1000 pF at 1 kHz, 1 V; where C > 1000 pF	33 pF to 1000 pF 1200 pF to 2200 pF	- 100 pF to 0.047 μF
Tolerance on the Capacitance: where C < 10 pF where C > 10 pF	- ± 5 % (J); ± 10 % (K)	- ± 10 % (K); ± 20 % (M)
Rated DC Voltage	200 V; 500 V	
Dielectric Strength	200 V at 150 % of V _{rated} + 100 V _{DC} 500 V at 130 % of V _{rated} + 100 V _{DC}	
Insulation Resistance (IR)	C < 0.01 μF: 10 000 MΩ min. C ≥ 0.01 μF: 100 MΩ x μF min.	
Temperature Coefficient of the Capacitance	0 x 10 ⁻⁶ /K	-
Tolerance of the Temperature Coefficient	± 30 x 10 ⁻⁶ /K	-
Maximum Capacitance change with respect to Capacitance at 25 °C	-	± 15 %
Dissipation Factor (DF) at 1 MHz, 1 V; where C ≤ 1000 pF at 1 kHz, 1 V; where C > 1000 pF	$\frac{1}{400 + 20 \times C}$ ≤ 0.1 %	- ≤ 2.5 %
Operating Temperature Range	- 55 °C to + 125 °C	
Storage Temperature Range	25 °C ± 15 °C	
Aging	-	typical 1 % per time decade

Note

- The capacitors meet the essential requirements of 'EIA 198'.
Unless stated otherwise all electrical values apply at an ambient temperature of 25 °C ± 3 °C, at barometric pressures 650 mm to 800 mm of mercury, and relative humidity not to exceed 75 %.

MAIN FEATURES		
	CLASS 1	CLASS 2
APPLICATION	For temperature compensation of frequency discriminating circuits and filters, coupling and decoupling in high frequency circuits where low losses and narrow capacitance tolerances are demanded.	As coupling and decoupling capacitors for such application where higher losses and a reduced capacitance stability are tolerated.
PROPERTIES Temperature Dependence Capacitance	High stability of capacitance. Low dissipation factor up to higher frequencies. Defined temperature coefficient of capacitance, positive or negative, linear and reversible. High insulation resistance. No voltage dependence. High long-term stability of electrical values.	High capacitance values with small dimensions. Non-linear dependence of capacitance on temperature.
CLASSIFICATION Classification EIA: Classification CECC:	C0G (NP0) CG	X7R 2C1



Electrical Data and Dielectric Characteristics

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Vishay

TEMPERATURE CHARACTERISTICS OF CAPACITANCE FOR CLASS 2/3 CERAMIC DIELECTRICS ACCORDING TO CECC 32100

CODE LETTER FOR SUB CATEGORY	MAXIMUM CAPACITANCE CHANGE IN % AT THE SPECIFIED TEMPERATURE RANGE		DESIGNATION OF THE SPECIFIED TEMPERATURE RANGE
			- 55 °C/+ 125 °C
	WITHOUT RATED VOLTAGE	WITH RATED VOLTAGE	1
2C	± 20 %	+ 20 %/- 30 %	X

EIA - CODING SYSTEM FOR CLASS 2 CERAMIC

A	X	7	R	103	M
TYPE	WORKING TEMPERATURE RANGE		CAPACITANCE CHANGE WITHIN WORKING TEMP. RANGE NO RATED VOLTAGE APPLIED	CAPACITANCE IN pF	TOLERANCE
	LOWER TEMP. LIMIT	UPPER TEMP. LIMIT			
	X = - 55 °C	7 = + 125 °C	R = ± 15 %	The first two digits gives the nominal value, the third digit indicates the number of zeros, e.g. 103 = 10 000 pF	J = ± 5 % K = ± 10 % M = ± 20 %
Example: Vishay BCcomponents Description EIA Description					

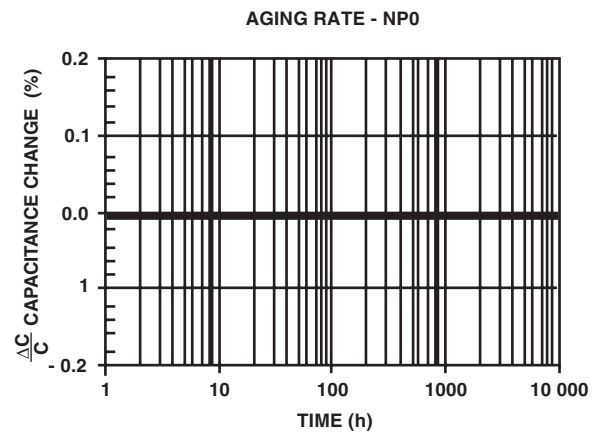
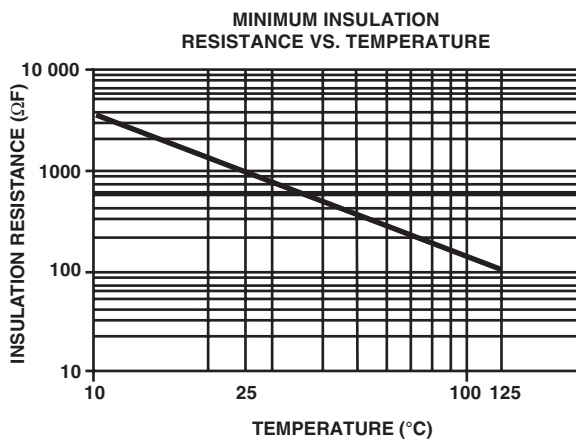
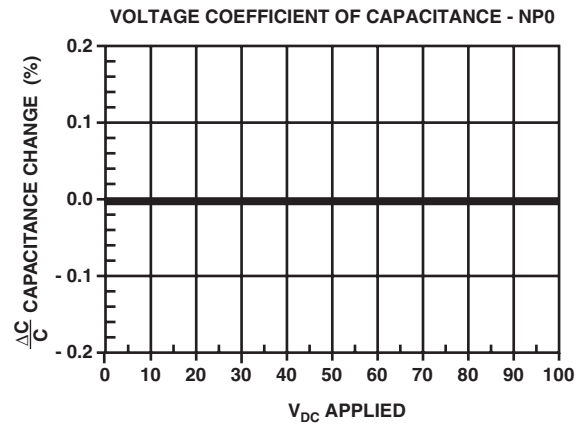
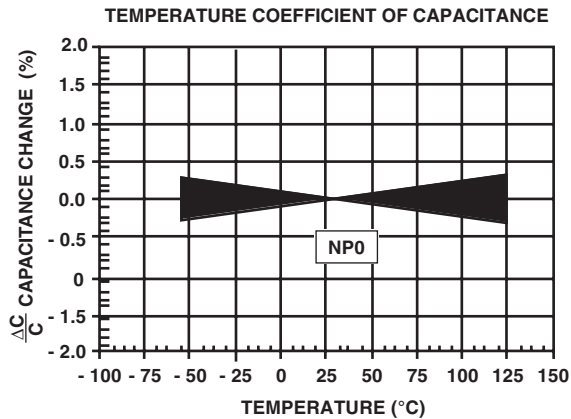
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COG (NP0) DIELECTRIC - TYPICAL PARAMETERS





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X7R DIELECTRIC - TYPICAL PARAMETERS

