

Multilayer Ceramic Capacitors Epoxy Coated Radial Type



RoHS
Compliant



Application

NPO: Temperature compensation type, have little or no change in capacitance with variation in temperature. Hence, they are used in radio-frequency oscillators, precision timing circuits, ultra stable amplifiers, etc.

X7R: Temperature stable type for by-pass and de-coupling in radio and television receivers, computers servo systems. Audio tone, and coupling, etc., where moderate capacitance variations are permissible and dissipation factor is not critical.

Z5U: General type for by-pass and filtering applications.

Specifications

Temperature Coefficient

NPO	$\pm 30\text{PPM}/^{\circ}\text{C}$, -55°C to $+125^{\circ}\text{C}$
X7R	$\pm 15\%$, -55°C to $+125^{\circ}\text{C}$
Z5U	$+22\%$, -56% , $+10^{\circ}\text{C}$ to $+85^{\circ}\text{C}$

Capacitance Test 25°C

NPO	1Vrms Max. at 1kHz (1MHz for 100pF or less)
X7R	1Vrms Max. at 1kHz
Z5U	1Vrms Max. at 1kHz

Dissipation Factor 25°C

NPO	0.15% Max. at 1kHz, 1Vrms Max. (1MHz for 100pF or less)
X7R	2.5% Max. at 1kHz 1Vrms Max.
Z5U	5% Max at 1kHz 1Vrms Max.

Dielectric Strength 25°C (Flash Test)

NPO and X7R	300% rated voltage for 5 seconds with 50mA Max. charging current.
Z5U	250% rated voltage for 5 seconds with 50mA Max. charging current.

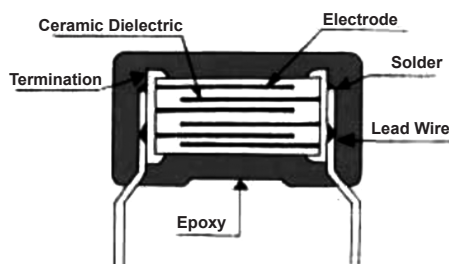
Life Test (1000 hrs)

NPO	$\leq \pm 3\%$ at 200% rated voltage, 125°C
X7R	$\leq \pm 12.5\%$ at 200% rated voltage, 125°C
Z5U	$\leq \pm 30\%$ at 200% rated voltage, 85°C

Insulation Resistance 25°C

NPO and X7R	100G Ω or 1000M Ω - μF whichever is less
Z5U	10G Ω or 100M Ω - μF whichever is less

Construction



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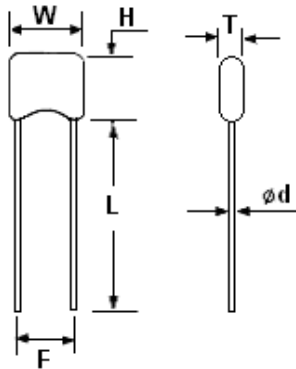


Multilayer Ceramic Capacitors

Epoxy Coated Radial Type



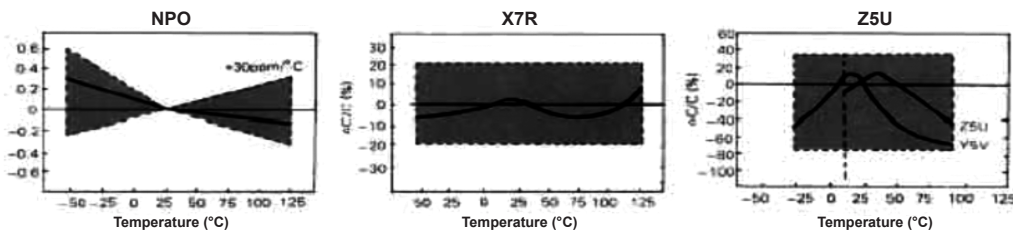
Diagram



Part Number	Dimensions (mm)					
	H	W	T	ød	Lead Length L	Lead Spacing F ±0.8
MCR15N120J2AL2L-RH	3.81	3.81	2.54	0.53	25 ~ 25.4	2.54
MCR15N270J2AL2L-RH						
MCR15N330J2AL2L-RH						
MCR15W473K2AL2L-RH						
MCR15Z103M1HL2L-RH						
MCR15Z473M1HL2L-RH						
MCR20N122J1HL5L-RH	5.08	5.08	3.18		5.08	
MCR30N123J2AL5L-RH	7.62	7.62	3.81			
MCR30W224K1HL5L-RH						
MCR30W474K1HL5L-RH						

Typical Performance Characteristics

Temperature Characteristics



Part Number Table

Description	Dielectric Characteristic	Voltage	Tolerance	Part Number
Multilayer Ceramic Capacitor Epoxy Coated, Radial Type	NPO	100V	±5%	MCR15N120J2AL2L-RH
				MCR15N270J2AL2L-RH
				MCR15N330J2AL2L-RH
	X7R		±10%	MCR15W473K2AL2L-RH
	Z5U	50V	±20%	MCR15Z103M1HL2L-RH
				MCR15Z473M1HL2L-RH
	NPO	100V	±5%	MCR20N122J1HL5L-RH
				MCR30N123J2AL5L-RH
	X74	50V	±10%	MCR30W224K1HL5L-RH
				MCR30W474K1HL5L-RH

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