

# Type P10 to P40 Multilayer Ceramic Capacitors

## Axial Leaded Capacitors



The Type P10 to P40 axial leaded, conformally coated, multilayer ceramic capacitors offer a wide range of temperature coefficients that are excellent for filtering, bypass and coupling applications

### Highlights

- Conformally coated, axial leaded
- Available on tape and reel
- IECQ Approved to:
  - QC300601/US0001 - NPO
  - QC300701/US0003- X7R
  - QC300701/US0001-Z5U



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

## Specifications

- Capacitance Range:** 10 pF to 1.0  $\mu$ F
- Voltage Range:** 50, 100, 200 WVdc
- Capacitance Tolerance:** See ratings tables
- Temperature Coefficient:** COG (NPO), X7R, Z5U
- Withstand Voltage:** 250% of rated voltage is applied for 1 to 5 sec.
- Available on Tape and Reel:** Add 'TR' to end of catalog part number

## Ratings

### COG (NPO) Temperature Coefficient 200 Vdc

Cap	Catalog Part Number	Size (Inches)		Cap	Catalog Part Number	Size (Inches)	
		D	L			D	L
10 pF	P10G100*2-F	0.1	0.17	68 pF	P10G680*2-F	0.1	0.17
12 pF	P10G120*2-F	0.1	0.17	82 pF	P10G820*2-F	0.1	0.17
15 pF	P10G150*2-F	0.1	0.17	100 pF	P10G101*2-F	0.1	0.17
18 pF	P10G180*2-F	0.1	0.17	120 pF	P10G121*2-F	0.1	0.17
22 pF	P10G220*2-F	0.1	0.17	150 pF	P10G151*2-F	0.1	0.17
33 pF	P10G330*2-F	0.1	0.17	180 pF	P10G181*2-F	0.1	0.17
39 pF	P10G390*2-F	0.1	0.17	220 pF	P10G221*2-F	0.1	0.17
47 pF	P10G470*2-F	0.1	0.17	270 pF	P10G271*2-F	0.1	0.17
56 pF	P10G560*2-F	0.1	0.17				

\*Insert proper letter symbol for tolerance.  
J =  $\pm$ 5%, K =  $\pm$ 10%

### COG (NPO) Temperature Coefficient 100 Vdc

Cap	Catalog Part Number	Size (Inches)		Cap	Catalog Part Number	Size (Inches)		Cap	Catalog Part Number	Size (Inches)	
		D	L			D	L			D	L
10 pF	P10G100*1-F	0.1	0.17	120 pF	P10G121*1-F	0.1	0.17	1500 pF	P20G152*1-F	0.1	0.26
12 pF	P10G120*1-F	0.1	0.17	150 pF	P10G151*1-F	0.1	0.17	1800 pF	P20G182*1-F	0.1	0.26
15 pF	P10G150*1-F	0.1	0.17	180 pF	P10G181*1-F	0.1	0.17	2200 pF	P20G222*1-F	0.1	0.26
18 pF	P10G180*1-F	0.1	0.17	220 pF	P10G221*1-F	0.1	0.17	2700 pF	P30G272*1-F	0.15	0.29
22 pF	P10G220*1-F	0.1	0.17	270 pF	P10G271*1-F	0.1	0.17	3300 pF	P30G332*1-F	0.15	0.29
27 pF	P10G270*1-F	0.1	0.17	330 pF	P10G331*1-F	0.1	0.17	3900 pF	P30G392*1-F	0.15	0.29
33 pF	P10G330*1-F	0.1	0.17	390 pF	P10G391*1-F	0.1	0.17	4700 pF	P30G472*1-F	0.15	0.29
39 pF	P10G390*1-F	0.1	0.17	470 pF	P10G471*1-F	0.1	0.17	5600 pF	P30G562*1-F	0.15	0.29
47 pF	P10G470*1-F	0.1	0.17	560 pF	P10G561*1-F	0.1	0.17	6800 pF	P30G682*1-F	0.15	0.29
56 pF	P10G560*1-F	0.1	0.17	680 pF	P10G681*1-F	0.1	0.17	8200 pF	P30G822*1-F	0.15	0.29
68 pF	P10G680*1-F	0.1	0.17	820 pF	P10G821*1-F	0.1	0.17	.010 $\mu$ F	P40G103*1-F	0.15	0.40
82 pF	P10G820*1-F	0.1	0.17	1000 pF	P10G102*1-F	0.1	0.17	.012 $\mu$ F	P40G123*1-F	0.15	0.40
100 pF	P10G101*1-F	0.1	0.17	1200 pF	P20G122*1-F	0.1	0.26	.015 $\mu$ F	P40G153*1-F	0.15	0.40

# Type P10 to P40 Multilayer Ceramic Capacitors

## Ratings

## RoHS Compliant

### COG (NPO) Temperature Coefficient 50 Vdc

Cap	Catalog Part Number	Size (Inches)	
		D	L
560 pF	P10G561*5-F	0.10	0.17
680 pF	P10G681*5-F	0.10	0.17
820 pF	P10G821*5-F	0.10	0.17
1000 pF	P10G102*5-F	0.10	0.17
1200 pF	P12G122*5-F	0.12	0.17
1200 pF	P20G122*5-F	0.10	0.26
1500 pF	P12G152*5-F	0.12	0.17
1500 pF	P20G152*5-F	0.10	0.26

Cap	Catalog Part Number	Size (Inches)	
		D	L
1800 pF	P12G182*5-F	0.12	0.17
1800 pF	P20G182*5-F	0.10	0.26
2200 pF	P12G222*5-F	0.12	0.17
2200 pF	P20G222*5-F	0.10	0.26
2700 pF	P12G272*5-F	0.12	0.17
2700 pF	P30G272*5-F	0.15	0.29
3300 pF	P30G332*5-F	0.15	0.29
3900 pF	P30G392*5-F	0.15	0.29

Cap	Catalog Part Number	Size (Inches)	
		D	L
4700 pF	P30G472*5-F	0.15	0.29
5600 pF	P30G562*5-F	0.15	0.29
6800 pF	P30G682*5-F	0.15	0.29
8200 pF	P30G822*5-F	0.15	0.29
.010 uF	P40G103*5-F	0.15	0.40
.012 uF	P40G123*5-F	0.15	0.40
.015 uF	P40G153*5-F	0.15	0.40

\*Insert proper letter symbol for tolerance.  
J = ±5%, K = ±10%

Add 'TR' to end of part number for Tape & Reel  
P10, P12, P20 - 5,000 per reel  
P30, P40 - 2,500 per reel  
Full reels only

### X7R Temperature Coefficient 100 Vdc

Cap	Catalog Part Number	Size (Inches)	
		D	L
470 pF	P10R471*1-F	0.1	0.17
560 pF	P10R561*1-F	0.1	0.17
680 pF	P10R681*1-F	0.1	0.17
820 pF	P10R821*1-F	0.1	0.17
1000 pF	P10R102*1-F	0.1	0.17
1200 pF	P10R122*1-F	0.1	0.17
1500 pF	P10R152*1-F	0.1	0.17
1800 pF	P10R182*1-F	0.1	0.17
2200 pF	P10R222*1-F	0.1	0.17
2700 pF	P10R272*1-F	0.1	0.17
3300 pF	P10R332*1-F	0.1	0.17
3900 pF	P10R392*1-F	0.1	0.17

Cap	Catalog Part Number	Size (Inches)	
		D	L
4700 pF	P10R472*1-F	0.10	0.17
5600 pF	P10R562*1-F	0.10	0.17
6800 pF	P10R682*1-F	0.10	0.17
8200 pF	P10R822*1-F	0.10	0.17
.01 uF	P10R103*1-F	0.10	0.17
.012 uF	P10R123*1-F	0.10	0.17
.015 uF	P12R153*1-F	0.12	0.17
.015 uF	P20R153*1-F	0.10	0.26
.018 uF	P12R183*1-F	0.12	0.17
.018 uF	P20R183*1-F	0.10	0.26
.022 uF	P12R223*1-F	0.12	0.17
.022 uF	P20R223*1-F	0.10	0.26

Cap	Catalog Part Number	Size (Inches)	
		D	L
.027 uF	P12R273*1-F	0.12	0.17
.027 uF	P20R273*1-F	0.10	0.26
.033 uF	P20R333*1-F	0.10	0.26
.039 uF	P30R393*1-F	0.15	0.29
.047 uF	P30R473*1-F	0.15	0.29
.056 uF	P30R563*1-F	0.15	0.29
.068 uF	P30R683*1-F	0.15	0.29
.082 uF	P30R823*1-F	0.15	0.29
.10 uF	P30R104*1-F	0.15	0.29
.12 uF	P40R124*1-F	0.15	0.29
.15 uF	P40R154*1-F	0.15	0.40

\*Insert proper letter symbol for tolerance.  
K = ±10%, M = ±20%

Add 'TR' to end of part number for Tape & Reel  
P10, P12, P20 - 5,000 per reel  
P30, P40 - 2,500 per reel  
Full reels only

### X7R Temperature Coefficient 50 Vdc

Cap	Catalog Part Number	Size (Inches)	
		D	L
8200 pF	P10R822*5-F	0.1	0.17
.010 uF	P10R103*5-F	0.1	0.17
.012 uF	P10R123*5-F	0.1	0.17
.015 uF	P10R153*5-F	0.1	0.17
.018 uF	P10R183*5-F	0.1	0.17
.022 uF	P10R223*5-F	0.1	0.17
.027 uF	P10R273*5-F	0.1	0.17
.033 uF	P10R333*5-F	0.1	0.17
.039 uF	P10R393*5-F	0.1	0.17

Cap	Catalog Part Number	Size (Inches)	
		D	L
.047 uF	P10R473*5-F	0.10	0.17
.056 uF	P12R563*5-F	0.12	0.17
.056 uF	P20R563*5-F	0.10	0.26
.068 uF	P12R683*5-F	0.12	0.17
.068 uF	P20R683*5-F	0.10	0.26
.082 uF	P12R823*5-F	0.12	0.17
.082 uF	P20R823*5-F	0.10	0.26
.10 uF	P12R104*5-F	0.12	0.17
.10 uF	P20R104*5-F	0.10	0.26

Cap	Catalog Part Number	Size (Inches)	
		D	L
.12 uF	P30R124*5-F	0.15	0.29
.15 uF	P30R154*5-F	0.15	0.29
.18 uF	P30R184*5-F	0.15	0.29
.22 uF	P30R224*5-F	0.15	0.29
.27 uF	P30R274*5-F	0.15	0.29
.33 uF	P40R334*5-F	0.15	0.40
.39 uF	P40R394*5-F	0.15	0.40
.47 uF	P40R474*5-F	0.15	0.40

\*Insert proper letter symbol for tolerance.  
K = ±10%, M = ±20%

# Type P10 to P40 Multilayer Ceramic Capacitors

## Ratings

## RoHS Compliant

### Z5U Temperature Coefficient 100 Vdc

Cap	Catalog		Size (Inches)	
	Part Number	D	L	
.010 uF	P10U103*1-F	0.1	0.17	
.012 uF	P10U123*1-F	0.1	0.17	
.015 uF	P10U153*1-F	0.1	0.17	
.018 uF	P10U183*1-F	0.1	0.17	
.022 uF	P10U223*1-F	0.1	0.17	
.027 uF	P20U273*1-F	0.1	0.26	

Cap	Catalog		Size (Inches)	
	Part Number	D	L	
.033 uF	P20U333*1-F	0.10	0.26	
.039 uF	P20U393*1-F	0.10	0.26	
.047 uF	P20U473*1-F	0.10	0.26	
.056 uF	P30U563*1-F	0.15	0.29	
.068 uF	P30U683*1-F	0.15	0.29	
.082 uF	P30U823*1-F	0.15	0.29	

Cap	Catalog		Size (Inches)	
	Part Number	D	L	
.1 uF	P30U104*1-F	0.15	0.29	
.12 uF	P30U124*1-F	0.15	0.29	
.15 uF	P30U154*1-F	0.15	0.29	
.18 uF	P40U184*1-F	0.15	0.4	
.22 uF	P40U224*1-F	0.15	0.4	

\*Insert proper letter symbol for tolerance.  
M = ±20%, Z = +80 -20%, P = +100 -0%

### Z5U Temperature Coefficient 50 Vdc

Cap	Catalog		Size (Inches)	
	Part Number	D	L	
.027 uF	P10U273*5-F	0.1	0.17	
.033 uF	P10U333*5-F	0.1	0.17	
.039 uF	P10U393*5-F	0.1	0.17	
.047 uF	P10U473*5-F	0.1	0.17	
.056 uF	P10U563*5-F	0.1	0.17	
.068 uF	P10U683*5-F	0.1	0.17	
.082 uF	P10U823*5-F	0.1	0.17	
.10 uF	P10U104*5-F	0.1	0.17	

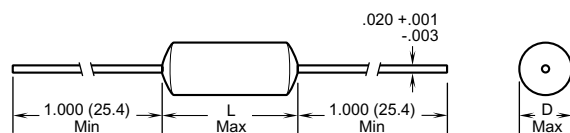
Cap	Catalog		Size (Inches)	
	Part Number	D	L	
.12 uF	P10U124*5-F	0.10	0.17	
.12 uF	P20U124*5-F	0.10	0.26	
.15 uF	P10U154*5-F	0.10	0.17	
.18 uF	P10U184*5-F	0.10	0.17	
.22 uF	P10U224*5-F	0.10	0.17	
.27 uF	P12U274*5-F	0.12	0.17	
.27 uF	P20U274*5-F	0.10	0.26	
.33 uF	P12U334*5-F	0.12	0.17	

Cap	Catalog		Size (Inches)	
	Part Number	D	L	
.33 uF	P20U334*5-F	0.10	0.26	
.39 uF	P30U394*5-F	0.15	0.29	
.47 uF	P30U474*5-F	0.15	0.29	
.56 uF	P40U564*5-F	0.15	0.40	
.68 uF	P40U684*5-F	0.15	0.40	
.82 uF	P40U824*5-F	0.15	0.40	
1.0 uF	P40U105*5-F	0.15	0.40	

\*Insert proper letter symbol for tolerance.  
M = ±20%, Z = +80 -20%, P = +100 -0%

Add 'TR' to end of part number for Tape & Reel  
P10, P12, P20 - 5,000 per reel  
P30, P40 - 2,500 per reel  
Full reels only

## Outline Drawing



## Type P10 to P40 Multilayer Ceramic Capacitors

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