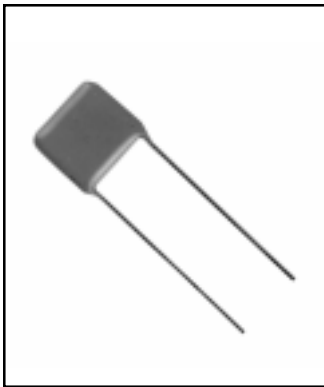


M15 to M50 Series Multilayer Ceramic Capacitors



- Radial Leaded
Conformally Coated
- Encapsulation consists of a moisture and shock resistant coating that meets UL94V-0
- Over 300 CV values available
- Applications :
Filtering, Bypass, Coupling
- IECQ Approved to:
QC300601/US0002 - NPO
QC300701/US0002 - X7R
QC300701/US0004 - Z5U
- Available in 1-1/4" Lead length
As a Non Standard Item

GENERAL SPECIFICATIONS

Voltage Range:
50, 100, 200 VDC

Capacitance Range:
1 pF to 6.8 μ F

Temperature Coefficients:
COG(NPO), X7R, Z5U

Available in Tape and Reel configuration:
Add 'TR' to end of catalog number.

COG (NPO) Temperature Coefficient 200 VOLTS

| Capacity | Size (Inches) | | | | Catalog Number | Capacity | Size (Inches) | | | | Catalog Number | Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|----------|---------------|------|------|------|----------------|--------------|---------------|------|------|------|----------------|
| | L | H | T | S | | | L | H | T | S | | | L | H | T | S | |
| 1.0 pF | .150 | .210 | .100 | .100 | M15G109D2 | 27 pF | .150 | .210 | .100 | .100 | M15G270*2 | 470 pF | .150 | .210 | .100 | .100 | M15G471*2 |
| 1.0 pF | .200 | .260 | .125 | .100 | M20G109D2 | 27 pF | .200 | .260 | .125 | .100 | M20G270*2 | 470 pF | .200 | .260 | .125 | .100 | M20G471*2 |
| 1.0 pF | .200 | .260 | .125 | .200 | M22G109D2 | 27 pF | .200 | .260 | .125 | .200 | M22G270*2 | 470 pF | .200 | .260 | .125 | .200 | M22G471*2 |
| 1.5 pF | .150 | .210 | .100 | .100 | M15G159D2 | 33 pF | .150 | .210 | .100 | .100 | M15G330*2 | 560 pF | .200 | .260 | .125 | .100 | M20G561*2 |
| 1.5 pF | .200 | .260 | .125 | .100 | M20G159D2 | 33 pF | .200 | .260 | .125 | .100 | M20G330*2 | 560 pF | .200 | .260 | .125 | .200 | M22G561*2 |
| 1.5 pF | .200 | .260 | .125 | .200 | M22G159D2 | 33 pF | .200 | .260 | .125 | .200 | M22G330*2 | 680 pF | .200 | .260 | .125 | .100 | M20G681*2 |
| 2.2 pF | .150 | .210 | .100 | .100 | M15G229D2 | 39 pF | .150 | .210 | .100 | .100 | M15G390*2 | 680 pF | .200 | .260 | .125 | .200 | M22G681*2 |
| 2.2 pF | .200 | .260 | .125 | .100 | M20G229D2 | 39 pF | .200 | .260 | .125 | .100 | M20G390*2 | 820 pF | .200 | .260 | .125 | .100 | M20G821*2 |
| 2.2 pF | .200 | .260 | .125 | .200 | M22G229D2 | 39 pF | .200 | .260 | .125 | .200 | M22G390*2 | 820 pF | .200 | .260 | .125 | .200 | M22G821*2 |
| 2.7 pF | .150 | .210 | .100 | .100 | M15G279D2 | 47 pF | .150 | .210 | .100 | .100 | M15G470*2 | 1000 pF | .200 | .260 | .125 | .100 | M20G102*2 |
| 2.7 pF | .200 | .260 | .125 | .100 | M20G279D2 | 47 pF | .200 | .260 | .125 | .100 | M20G470*2 | 1000 pF | .200 | .260 | .125 | .200 | M22G102*2 |
| 2.7 pF | .200 | .260 | .125 | .200 | M22G279D2 | 47 pF | .200 | .260 | .125 | .200 | M22G470*2 | 1200 pF | .200 | .260 | .125 | .100 | M20G122*2 |
| 3.3 pF | .150 | .210 | .100 | .100 | M15G339D2 | 56 pF | .150 | .210 | .100 | .100 | M15G560*2 | 1200 pF | .200 | .260 | .125 | .200 | M22G122*2 |
| 3.3 pF | .200 | .260 | .125 | .100 | M20G339D2 | 56 pF | .200 | .260 | .125 | .100 | M20G560*2 | 1500 pF | .200 | .260 | .125 | .100 | M20G152*2 |
| 3.3 pF | .200 | .260 | .125 | .200 | M22G339D2 | 56 pF | .200 | .260 | .125 | .200 | M22G560*2 | 1500 pF | .200 | .260 | .125 | .200 | M22G152*2 |
| 3.9 pF | .150 | .210 | .100 | .100 | M15G399D2 | 68 pF | .150 | .210 | .100 | .100 | M15G680*2 | 1800 pF | .200 | .260 | .125 | .100 | M20G182*2 |
| 3.9 pF | .200 | .260 | .125 | .100 | M20G399D2 | 68 pF | .200 | .260 | .125 | .100 | M20G680*2 | 1800 pF | .200 | .260 | .125 | .200 | M22G182*2 |
| 3.9 pF | .200 | .260 | .125 | .200 | M22G399D2 | 68 pF | .200 | .260 | .125 | .200 | M22G680*2 | 2200 pF | .200 | .260 | .125 | .100 | M20G222*2 |
| 4.7 pF | .150 | .210 | .100 | .100 | M15G479D2 | 82 pF | .150 | .210 | .100 | .100 | M15G820*2 | 2200 pF | .200 | .260 | .125 | .200 | M22G222*2 |
| 4.7 pF | .200 | .260 | .125 | .100 | M20G479D2 | 82 pF | .200 | .260 | .125 | .100 | M20G820*2 | 2700 pF | .200 | .260 | .125 | .100 | M20G272*2 |
| 4.7 pF | .200 | .260 | .125 | .200 | M22G479D2 | 82 pF | .200 | .260 | .125 | .200 | M22G820*2 | 2700 pF | .200 | .260 | .125 | .200 | M22G272*2 |
| 5.6 pF | .150 | .210 | .100 | .100 | M15G569D2 | 100 pF | .150 | .210 | .100 | .100 | M15G101*2 | 2700 pF | .300 | .360 | .150 | .200 | M30G272*2 |
| 5.6 pF | .200 | .260 | .125 | .100 | M20G569D2 | 100 pF | .200 | .260 | .125 | .100 | M20G101*2 | 3300 pF | .200 | .260 | .125 | .100 | M20G332*2 |
| 5.6 pF | .200 | .260 | .125 | .200 | M22G569D2 | 100 pF | .200 | .260 | .125 | .200 | M22G101*2 | 3300 pF | .200 | .260 | .125 | .200 | M22G332*2 |
| 6.8 pF | .150 | .210 | .100 | .100 | M15G689D2 | 120 pF | .150 | .210 | .100 | .100 | M15G121*2 | 3300 pF | .300 | .360 | .150 | .200 | M30G332*2 |
| 6.8 pF | .200 | .260 | .125 | .100 | M20G689D2 | 120 pF | .200 | .260 | .125 | .100 | M20G121*2 | 3900 pF | .300 | .360 | .150 | .200 | M30G392*2 |
| 6.8 pF | .200 | .260 | .125 | .200 | M22G689D2 | 120 pF | .200 | .260 | .125 | .200 | M22G121*2 | 4700 pF | .300 | .360 | .150 | .200 | M30G472*2 |
| 8.2 pF | .150 | .210 | .100 | .100 | M15G829D2 | 150 pF | .150 | .210 | .100 | .100 | M15G151*2 | 5600 pF | .300 | .360 | .150 | .200 | M30G562*2 |
| 8.2 pF | .200 | .260 | .125 | .100 | M20G829D2 | 150 pF | .200 | .260 | .125 | .100 | M20G151*2 | 6800 pF | .300 | .360 | .150 | .200 | M30G682*2 |
| 8.2 pF | .200 | .260 | .125 | .200 | M22G829D2 | 150 pF | .200 | .260 | .125 | .200 | M22G151*2 | 8200 pF | .300 | .360 | .150 | .200 | M30G822*2 |
| 10 pF | .150 | .210 | .100 | .100 | M15G100*2 | 180 pF | .150 | .210 | .100 | .100 | M15G181*2 | .01 μ F | .300 | .360 | .150 | .200 | M30G103*2 |
| 10 pF | .200 | .260 | .125 | .100 | M20G100*2 | 180 pF | .200 | .260 | .125 | .100 | M20G181*2 | .012 μ F | .300 | .360 | .150 | .200 | M30G123*2 |
| 10 pF | .200 | .260 | .125 | .200 | M22G100*2 | 180 pF | .200 | .260 | .125 | .200 | M22G181*2 | .012 μ F | .400 | .460 | .150 | .200 | M40G123*2 |
| 12 pF | .150 | .210 | .100 | .100 | M15G120*2 | 220 pF | .150 | .210 | .100 | .100 | M15G221*2 | .015 μ F | .300 | .360 | .150 | .200 | M30G153*2 |
| 12 pF | .200 | .260 | .125 | .100 | M20G120*2 | 220 pF | .200 | .260 | .125 | .100 | M20G221*2 | .015 μ F | .400 | .460 | .150 | .200 | M40G153*2 |
| 12 pF | .200 | .260 | .125 | .200 | M22G120*2 | 220 pF | .200 | .260 | .125 | .200 | M22G221*2 | .018 μ F | .300 | .360 | .150 | .200 | M30G183*2 |
| 15 pF | .150 | .210 | .100 | .100 | M15G150*2 | 270 pF | .150 | .210 | .100 | .100 | M15G271*2 | .018 μ F | .400 | .460 | .150 | .200 | M40G183*2 |
| 15 pF | .200 | .260 | .125 | .100 | M20G150*2 | 270 pF | .200 | .260 | .125 | .100 | M20G271*2 | .022 μ F | .400 | .460 | .150 | .200 | M40G223*2 |
| 15 pF | .200 | .260 | .125 | .200 | M22G150*2 | 270 pF | .200 | .260 | .125 | .200 | M22G271*2 | .027 μ F | .400 | .460 | .150 | .200 | M40G273*2 |
| 18 pF | .150 | .210 | .100 | .100 | M15G180*2 | 330 pF | .150 | .210 | .100 | .100 | M15G331*2 | .033 μ F | .400 | .460 | .150 | .200 | M40G333*2 |
| 18 pF | .200 | .260 | .125 | .100 | M20G180*2 | 330 pF | .200 | .260 | .125 | .100 | M20G331*2 | .039 μ F | .400 | .460 | .150 | .200 | M40G393*2 |
| 18 pF | .200 | .260 | .125 | .200 | M22G180*2 | 330 pF | .200 | .260 | .125 | .200 | M22G331*2 | .039 μ F | .500 | .560 | .200 | .400 | M50G393*2 |
| 22 pF | .150 | .210 | .100 | .100 | M15G220*2 | 390 pF | .150 | .210 | .100 | .100 | M15G391*2 | .047 μ F | .400 | .460 | .150 | .200 | M40G473*2 |
| 22 pF | .200 | .260 | .125 | .100 | M20G220*2 | 390 pF | .200 | .260 | .125 | .100 | M20G391*2 | .047 μ F | .500 | .560 | .200 | .400 | M50G473*2 |
| 22 pF | .200 | .260 | .125 | .200 | M22G220*2 | 390 pF | .200 | .260 | .125 | .200 | M22G391*2 | .056 μ F | .500 | .560 | .200 | .400 | M50G563*2 |
| | | | | | | | | | | | | .068 μ F | .500 | .560 | .200 | .400 | M50G683*2 |

Multilayer Ceramic Capacitors

Add 'TR' to end of part number for Tape & Reel
M15, M20, M22 - 2,500 per reel
M30 - 1,500 per reel
M40 - 1,000 per reel
M50 - N/A
(Available in full reels only)

* Insert proper letter symbol for tolerance:
(1 pF to 8.2 pF available in D = ± 5 pF only)
10 pF to 22 pF: J = $\pm 5\%$, K = $\pm 10\%$
27 pF to 47 pF: G = $\pm 2\%$, J = $\pm 5\%$, K = $\pm 10\%$
56 pF & Up: F = $\pm 1\%$, G = $\pm 2\%$, J = $\pm 5\%$, K = $\pm 10\%$

M15 to M50 Series Multilayer Ceramic Capacitors



COG (NPO) Temperature Coefficient 100 VDC

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 120 pF | .150 | .210 | .100 | .100 | M15G121*1 |
| 150 pF | .150 | .210 | .100 | .100 | M15G151*1 |
| 180 pF | .150 | .210 | .100 | .100 | M15G181*1 |
| 220 pF | .150 | .210 | .100 | .100 | M15G221*1 |
| 270 pF | .150 | .210 | .100 | .100 | M15G271*1 |
| 330 pF | .150 | .210 | .100 | .100 | M15G331*1 |
| 390 pF | .150 | .210 | .100 | .100 | M15G391*1 |
| 470 pF | .150 | .210 | .100 | .100 | M15G471*1 |
| 560 pF | .150 | .210 | .100 | .100 | M15G561*1 |
| 680 pF | .150 | .210 | .100 | .100 | M15G681*1 |
| 680 pF | .200 | .260 | .125 | .100 | M20G681*1 |
| 680 pF | .200 | .260 | .125 | .200 | M22G681*1 |
| 820 pF | .150 | .210 | .100 | .100 | M15G821*1 |
| 820 pF | .200 | .260 | .125 | .100 | M20G821*1 |
| 820 pF | .200 | .260 | .125 | .200 | M22G821*1 |
| 1000 pF | .150 | .210 | .100 | .100 | M15G102*1 |
| 1000 pF | .200 | .260 | .125 | .100 | M20G102*1 |
| 1000 pF | .200 | .260 | .125 | .200 | M22G102*1 |
| 1200 pF | .200 | .260 | .125 | .100 | M20G122*1 |
| 1200 pF | .200 | .260 | .125 | .200 | M22G122*1 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 1500 pF | .200 | .260 | .125 | .100 | M20G152*1 |
| 1500 pF | .200 | .260 | .125 | .200 | M22G152*1 |
| 1800 pF | .200 | .260 | .125 | .100 | M20G182*1 |
| 1800 pF | .200 | .260 | .125 | .200 | M22G182*1 |
| 2200 pF | .200 | .260 | .125 | .100 | M20G222*1 |
| 2200 pF | .200 | .260 | .125 | .200 | M22G222*1 |
| 2700 pF | .200 | .260 | .125 | .100 | M20G272*1 |
| 2700 pF | .200 | .260 | .125 | .200 | M22G272*1 |
| 3300 pF | .200 | .260 | .125 | .100 | M20G332*1 |
| 3300 pF | .200 | .260 | .125 | .200 | M22G332*1 |
| 3300 pF | .300 | .360 | .150 | .200 | M30G332*1 |
| 3900 pF | .200 | .260 | .125 | .100 | M20G392*1 |
| 3900 pF | .200 | .260 | .125 | .200 | M22G392*1 |
| 3900 pF | .300 | .360 | .150 | .200 | M30G392*1 |
| 4700 pF | .200 | .260 | .125 | .100 | M20G472*1 |
| 4700 pF | .200 | .260 | .125 | .200 | M22G472*1 |
| 4700 pF | .300 | .360 | .150 | .200 | M30G472*1 |
| 5600 pF | .200 | .260 | .125 | .100 | M20G562*1 |
| 5600 pF | .200 | .260 | .125 | .200 | M22G562*1 |
| 5600 pF | .300 | .360 | .150 | .200 | M30G562*1 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 6800 pF | .300 | .360 | .150 | .200 | M30G682*1 |
| 8200 pF | .300 | .360 | .150 | .200 | M30G822*1 |
| .01 uF | .300 | .360 | .150 | .200 | M30G103*1 |
| .012 uF | .300 | .360 | .150 | .200 | M30G123*1 |
| .015 uF | .300 | .360 | .150 | .200 | M30G153*1 |
| .018 uF | .300 | .360 | .150 | .200 | M30G183*1 |
| .022 uF | .300 | .360 | .150 | .200 | M30G223*1 |
| .027 uF | .300 | .360 | .150 | .200 | M30G273*1 |
| .027 uF | .400 | .460 | .150 | .200 | M40G273*1 |
| .033 uF | .400 | .460 | .150 | .200 | M40G333*1 |
| .039 uF | .400 | .460 | .150 | .200 | M40G393*1 |
| .039 uF | .500 | .560 | .200 | .400 | M50G393*1 |
| .047 uF | .400 | .460 | .150 | .200 | M40G473*1 |
| .047 uF | .500 | .560 | .200 | .400 | M50G473*1 |
| .056 uF | .400 | .460 | .150 | .200 | M40G563*1 |
| .056 uF | .500 | .560 | .200 | .400 | M50G563*1 |
| .068 uF | .400 | .460 | .150 | .200 | M40G683*1 |
| .068 uF | .500 | .560 | .200 | .400 | M50G683*1 |
| .082 uF | .500 | .560 | .200 | .400 | M50G823*1 |
| .1 uF | .500 | .560 | .200 | .400 | M50G104*1 |
| .12 uF | .500 | .560 | .200 | .400 | M50G124*1 |

* Insert proper letter symbol for tolerance:

F = ±1%, G = ±2%, J = ±5%, K = ±10%

X7R Temperature Coefficient 200 VDC

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 100 pF | .150 | .210 | .100 | .100 | M15R101*2 |
| 120 pF | .150 | .210 | .100 | .100 | M15R121*2 |
| 150 pF | .150 | .210 | .100 | .100 | M15R151*2 |
| 180 pF | .150 | .210 | .100 | .100 | M15R181*2 |
| 220 pF | .150 | .210 | .100 | .100 | M15R221*2 |
| 270 pF | .150 | .210 | .100 | .100 | M15R271*2 |
| 330 pF | .150 | .210 | .100 | .100 | M15R331*2 |
| 390 pF | .150 | .210 | .100 | .100 | M15R391*2 |
| 470 pF | .150 | .210 | .100 | .100 | M15R471*2 |
| 560 pF | .150 | .210 | .100 | .100 | M15R561*2 |
| 680 pF | .150 | .210 | .100 | .100 | M15R681*2 |
| 820 pF | .150 | .210 | .100 | .100 | M15R821*2 |
| 1000 pF | .150 | .210 | .100 | .100 | M15R102*2 |
| 1000 pF | .200 | .260 | .125 | .100 | M20R102*2 |
| 1000 pF | .200 | .260 | .125 | .200 | M22R102*2 |
| 1200 pF | .150 | .210 | .100 | .100 | M15R122*2 |
| 1200 pF | .200 | .260 | .125 | .100 | M20R122*2 |
| 1200 pF | .200 | .260 | .125 | .200 | M22R122*2 |
| 1500 pF | .150 | .210 | .100 | .100 | M15R152*2 |
| 1500 pF | .200 | .260 | .125 | .100 | M20R152*2 |
| 1500 pF | .200 | .260 | .125 | .200 | M22R152*2 |
| 1800 pF | .150 | .210 | .100 | .100 | M15R182*2 |
| 1800 pF | .200 | .260 | .125 | .100 | M20R182*2 |
| 1800 pF | .200 | .260 | .125 | .200 | M22R182*2 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 2200 pF | .150 | .210 | .100 | .100 | M15R222*2 |
| 2200 pF | .200 | .260 | .125 | .100 | M20R222*2 |
| 2200 pF | .200 | .260 | .125 | .200 | M22R222*2 |
| 2700 pF | .200 | .260 | .125 | .100 | M20R272*2 |
| 2700 pF | .200 | .260 | .125 | .200 | M22R272*2 |
| 3300 pF | .200 | .260 | .125 | .100 | M20R332*2 |
| 3300 pF | .200 | .260 | .125 | .200 | M22R332*2 |
| 3900 pF | .200 | .260 | .125 | .100 | M20R392*2 |
| 3900 pF | .200 | .260 | .125 | .200 | M22R392*2 |
| 4700 pF | .200 | .260 | .125 | .100 | M20R472*2 |
| 4700 pF | .200 | .260 | .125 | .200 | M22R472*2 |
| 5600 pF | .200 | .260 | .125 | .100 | M20R562*2 |
| 5600 pF | .200 | .260 | .125 | .200 | M22R562*2 |
| 6800 pF | .200 | .260 | .125 | .100 | M20R682*2 |
| 6800 pF | .200 | .260 | .125 | .200 | M22R682*2 |
| 8200 pF | .200 | .260 | .125 | .100 | M20R822*2 |
| 8200 pF | .200 | .260 | .125 | .200 | M22R822*2 |
| .01 uF | .200 | .260 | .125 | .100 | M20R103*2 |
| .01 uF | .200 | .260 | .125 | .200 | M22R103*2 |
| .012 uF | .200 | .260 | .125 | .100 | M20R123*2 |
| .012 uF | .200 | .260 | .125 | .200 | M22R123*2 |
| .015 uF | .200 | .260 | .125 | .100 | M20R153*2 |
| .015 uF | .200 | .260 | .125 | .200 | M22R153*2 |
| .015 uF | .300 | .360 | .150 | .200 | M30R153*2 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| .018 uF | .200 | .260 | .125 | .100 | M20R183*2 |
| .018 uF | .200 | .260 | .125 | .200 | M22R183*2 |
| .018 uF | .300 | .360 | .150 | .200 | M30R183*2 |
| .022 uF | .200 | .260 | .125 | .100 | M20R223*2 |
| .022 uF | .200 | .260 | .125 | .200 | M22R223*2 |
| .022 uF | .300 | .360 | .150 | .200 | M30R223*2 |
| .027 uF | .300 | .360 | .150 | .200 | M30R273*2 |
| .033 uF | .300 | .360 | .150 | .200 | M30R333*2 |
| .039 uF | .300 | .360 | .150 | .200 | M30R393*2 |
| .047 uF | .300 | .360 | .150 | .200 | M30R473*2 |
| .056 uF | .300 | .360 | .150 | .200 | M30R563*2 |
| .068 uF | .300 | .360 | .150 | .200 | M30R683*2 |
| .082 uF | .300 | .360 | .150 | .200 | M30R823*2 |
| .082 uF | .400 | .460 | .150 | .200 | M40R823*2 |
| .1 uF | .300 | .360 | .150 | .200 | M30R104*2 |
| .1 uF | .400 | .460 | .150 | .200 | M40R104*2 |
| .12 uF | .400 | .460 | .150 | .200 | M40R124*2 |
| .15 uF | .400 | .460 | .150 | .200 | M40R154*2 |
| .18 uF | .400 | .460 | .150 | .200 | M40R184*2 |
| .22 uF | .400 | .460 | .150 | .200 | M40R224*2 |
| .22 uF | .500 | .560 | .200 | .400 | M50R224*2 |
| .27 uF | .400 | .460 | .150 | .200 | M40R274*2 |
| .27 uF | .500 | .560 | .200 | .400 | M50R274*2 |
| .33 uF | .500 | .560 | .200 | .400 | M50R334*2 |
| .39 uF | .500 | .560 | .200 | .400 | M50R394*2 |
| .47 uF | .500 | .560 | .200 | .400 | M50R474*2 |

* Insert proper letter symbol for tolerance:

K = ±10%, M = ±20%

Add 'TR' to end of part number for Tape & Reel
M15, M20, M22 - 2,500 per reel
M30 - 1,500 per reel
M40 - 1,000 per reel
M50 - N/A
(Available in full reels only)

M15 to M50 Series Multilayer Ceramic Capacitors



X7R Temperature Coefficient 100 VDC

| Capacity | Size (Inches) | | | | Catalog Number | Capacity | Size (Inches) | | | | Catalog Number | Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|----------|---------------|------|------|------|----------------|----------|---------------|------|------|------|----------------|
| | L | H | T | S | | | L | H | T | S | | | L | H | T | S | |
| 820 pF | .150 | .210 | .100 | .100 | M15R821*1 | .012 uF | .200 | .260 | .125 | .100 | M20R123*1 | .1 uF | .200 | .260 | .125 | .100 | M20R104*1 |
| 1000 pF | .150 | .210 | .100 | .100 | M15R102*1 | .012 uF | .200 | .260 | .125 | .200 | M22R123*1 | .1 uF | .200 | .260 | .125 | .200 | M22R104*1 |
| 1200 pF | .150 | .210 | .100 | .100 | M15R122*1 | .015 uF | .200 | .260 | .125 | .100 | M20R153*1 | .1 uF | .300 | .360 | .150 | .200 | M30R104*1 |
| 1500 pF | .150 | .210 | .100 | .100 | M15R152*1 | .015 uF | .200 | .260 | .125 | .200 | M22R153*1 | .12 uF | .300 | .360 | .150 | .200 | M30R124*1 |
| 1800 pF | .150 | .210 | .100 | .100 | M15R182*1 | .018 uF | .200 | .260 | .125 | .100 | M20R183*1 | .15 uF | .300 | .360 | .150 | .200 | M30R154*1 |
| 2200 pF | .150 | .210 | .100 | .100 | M15R222*1 | .018 uF | .200 | .260 | .125 | .200 | M22R183*1 | .18 uF | .300 | .360 | .150 | .200 | M30R184*1 |
| 2700 pF | .150 | .210 | .100 | .100 | M15R272*1 | .022 uF | .200 | .260 | .125 | .100 | M20R223*1 | .22 uF | .300 | .360 | .150 | .200 | M30R224*1 |
| 3300 pF | .150 | .210 | .100 | .100 | M15R332*1 | .022 uF | .200 | .260 | .125 | .200 | M22R223*1 | .27 uF | .300 | .360 | .150 | .200 | M30R274*1 |
| 3900 pF | .150 | .210 | .100 | .100 | M15R392*1 | .027 uF | .200 | .260 | .125 | .100 | M20R273*1 | .33 uF | .300 | .360 | .150 | .200 | M30R334*1 |
| 4700 pF | .150 | .210 | .100 | .100 | M15R472*1 | .027 uF | .200 | .260 | .125 | .200 | M22R273*1 | .33 uF | .400 | .460 | .150 | .200 | M40R334*1 |
| 4700 pF | .200 | .260 | .125 | .100 | M20R472*1 | .033 uF | .200 | .260 | .125 | .100 | M20R333*1 | .39 uF | .300 | .360 | .150 | .200 | M30R394*1 |
| 4700 pF | .200 | .260 | .125 | .200 | M22R472*1 | .033 uF | .200 | .260 | .125 | .200 | M22R333*1 | .39 uF | .400 | .460 | .150 | .200 | M40R394*1 |
| 5600 pF | .150 | .210 | .100 | .100 | M15R562*1 | .039 uF | .200 | .260 | .125 | .100 | M20R393*1 | .47 uF | .300 | .360 | .150 | .200 | M30R474*1 |
| 5600 pF | .200 | .260 | .125 | .100 | M20R562*1 | .039 uF | .200 | .260 | .125 | .200 | M22R393*1 | .47 uF | .400 | .460 | .150 | .200 | M40R474*1 |
| 5600 pF | .200 | .260 | .125 | .200 | M22R562*1 | .047 uF | .200 | .260 | .125 | .100 | M20R473*1 | .56 uF | .400 | .460 | .150 | .200 | M40R564*1 |
| 6800 pF | .150 | .210 | .100 | .100 | M15R682*1 | .047 uF | .200 | .260 | .125 | .200 | M22R473*1 | .68 uF | .400 | .460 | .150 | .200 | M40R684*1 |
| 6800 pF | .200 | .260 | .125 | .100 | M20R682*1 | .056 uF | .200 | .260 | .125 | .100 | M20R563*1 | .68 uF | .500 | .560 | .200 | .400 | M50R684*1 |
| 6800 pF | .200 | .260 | .125 | .200 | M22R682*1 | .056 uF | .200 | .260 | .125 | .200 | M22R563*1 | .82 uF | .400 | .460 | .150 | .200 | M40R824*1 |
| 8200 pF | .150 | .210 | .100 | .100 | M15R822*1 | .068 uF | .200 | .260 | .125 | .100 | M20R683*1 | .82 uF | .500 | .560 | .200 | .400 | M50R824*1 |
| 8200 pF | .200 | .260 | .125 | .100 | M20R822*1 | .068 uF | .200 | .260 | .125 | .200 | M22R683*1 | 1.0 uF | .400 | .460 | .150 | .200 | M40R105*1 |
| 8200 pF | .200 | .260 | .125 | .200 | M22R822*1 | .068 uF | .300 | .360 | .150 | .200 | M30R683*1 | 1.0 uF | .500 | .560 | .200 | .400 | M50R105*1 |
| .01 uF | .150 | .210 | .100 | .100 | M15R103*1 | .082 uF | .200 | .260 | .125 | .100 | M20R823*1 | 1.2 uF | .500 | .560 | .200 | .400 | M50R125*1 |
| .01 uF | .200 | .260 | .125 | .100 | M20R103*1 | .082 uF | .200 | .260 | .125 | .200 | M22R823*1 | | | | | | |
| .01 uF | .200 | .260 | .125 | .200 | M22R103*1 | .082 uF | .300 | .360 | .150 | .200 | M30R823*1 | | | | | | |

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

X7R Temperature Coefficient 50 VDC

| Capacity | Size (Inches) | | | | Catalog Number | Capacity | Size (Inches) | | | | Catalog Number | Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|----------|---------------|------|------|------|----------------|----------|---------------|------|------|------|----------------|
| | L | H | T | S | | | L | H | T | S | | | L | H | T | S | |
| 3300 pF | .150 | .210 | .100 | .100 | M15R332*5 | .033 uF | .150 | .210 | .100 | .100 | M15R333*5 | .22 uF | .200 | .260 | .125 | .100 | M20R224*5 |
| 3900 pF | .150 | .210 | .100 | .100 | M15R392*5 | .033 uF | .200 | .260 | .125 | .100 | M20R333*5 | .22 uF | .200 | .260 | .125 | .200 | M22R224*5 |
| 4700 pF | .150 | .210 | .100 | .100 | M15R472*5 | .033 uF | .200 | .260 | .125 | .200 | M22R333*5 | .22 uF | .300 | .360 | .150 | .200 | M30R224*5 |
| 5600 pF | .150 | .210 | .100 | .100 | M15R562*5 | .039 uF | .200 | .260 | .125 | .100 | M20R393*5 | .27 uF | .200 | .260 | .125 | .100 | M20R274*5 |
| 6800 pF | .150 | .210 | .100 | .100 | M15R682*5 | .039 uF | .200 | .260 | .125 | .200 | M22R393*5 | .27 uF | .200 | .260 | .125 | .200 | M22R274*5 |
| 8200 pF | .150 | .210 | .100 | .100 | M15R822*5 | .047 uF | .200 | .260 | .125 | .100 | M20R473*5 | .27 uF | .300 | .360 | .150 | .200 | M30R274*5 |
| .01 uF | .150 | .210 | .100 | .100 | M15R103*5 | .047 uF | .200 | .260 | .125 | .200 | M22R473*5 | .33 uF | .300 | .360 | .150 | .200 | M30R334*5 |
| .012 uF | .150 | .210 | .100 | .100 | M15R123*5 | .056 uF | .200 | .260 | .125 | .100 | M20R563*5 | .39 uF | .300 | .360 | .150 | .200 | M30R394*5 |
| .012 uF | .200 | .260 | .125 | .100 | M20R123*5 | .056 uF | .200 | .260 | .125 | .200 | M22R563*5 | .47 uF | .300 | .360 | .150 | .200 | M30R474*5 |
| .012 uF | .200 | .260 | .125 | .200 | M22R123*5 | .068 uF | .200 | .260 | .125 | .100 | M20R683*5 | .56 uF | .300 | .360 | .150 | .200 | M30R564*5 |
| .015 uF | .150 | .210 | .100 | .100 | M15R153*5 | .068 uF | .200 | .260 | .125 | .200 | M22R683*5 | .68 uF | .300 | .360 | .150 | .200 | M30R684*5 |
| .015 uF | .200 | .260 | .125 | .100 | M20R153*5 | .082 uF | .200 | .260 | .125 | .100 | M20R823*5 | .82 uF | .300 | .360 | .150 | .200 | M30R824*5 |
| .015 uF | .200 | .260 | .125 | .200 | M22R153*5 | .082 uF | .200 | .260 | .125 | .200 | M22R823*5 | 1.0 uF | .300 | .360 | .150 | .200 | M30R105*5 |
| .018 uF | .150 | .210 | .100 | .100 | M15R183*5 | .1 uF | .200 | .260 | .125 | .100 | M20R104*5 | 1.0 uF | .400 | .460 | .150 | .200 | M40R105*5 |
| .018 uF | .200 | .260 | .125 | .100 | M20R183*5 | .1 uF | .200 | .260 | .125 | .200 | M22R104*5 | 1.2 uF | .400 | .460 | .150 | .200 | M40R125*5 |
| .018 uF | .200 | .260 | .125 | .200 | M22R183*5 | .12 uF | .200 | .260 | .125 | .100 | M20R124*5 | 1.5 uF | .400 | .460 | .150 | .200 | M40R155*5 |
| .022 uF | .150 | .210 | .100 | .100 | M15R223*5 | .12 uF | .200 | .260 | .125 | .200 | M22R124*5 | 1.8 uF | .400 | .460 | .150 | .200 | M40R185*5 |
| .022 uF | .200 | .260 | .125 | .100 | M20R223*5 | .15 uF | .200 | .260 | .125 | .100 | M20R154*5 | 2.2 uF | .400 | .460 | .150 | .200 | M40R225*5 |
| .022 uF | .200 | .260 | .125 | .200 | M22R223*5 | .15 uF | .200 | .260 | .125 | .200 | M22R154*5 | 2.2 uF | .500 | .560 | .200 | .400 | M50R225*5 |
| .027 uF | .150 | .210 | .100 | .100 | M15R273*5 | .15 uF | .300 | .360 | .150 | .200 | M30R154*5 | 2.7 uF | .500 | .560 | .200 | .400 | M50R275*5 |
| .027 uF | .200 | .260 | .125 | .100 | M20R273*5 | .18 uF | .200 | .260 | .125 | .100 | M20R184*5 | 3.3 uF | .500 | .560 | .200 | .400 | M50R335*5 |
| .027 uF | .200 | .260 | .125 | .200 | M22R273*5 | .18 uF | .200 | .260 | .125 | .200 | M22R184*5 | 3.9 uF | .500 | .560 | .200 | .400 | M50R395*5 |

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

Add 'TR' to end of part number for Tape & Reel
M15, M20, M22 - 2,500 per reel
M30 - 1,500 per reel
M40 - 1,000 per reel
M50 - N/A
(Available in full reels only)

Multilayer Ceramic Capacitors

M15 to M50 Series Multilayer Ceramic Capacitors



Z5U Temperature Coefficient 100 VDC

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 1000 pF | .150 | .210 | .100 | .100 | M15U102*1 |
| 1200 pF | .150 | .210 | .100 | .100 | M15U122*1 |
| 1500 pF | .150 | .210 | .100 | .100 | M15U152*1 |
| 1800 pF | .150 | .210 | .100 | .100 | M15U182*1 |
| 2200 pF | .150 | .210 | .100 | .100 | M15U222*1 |
| 2700 pF | .150 | .210 | .100 | .100 | M15U272*1 |
| 3300 pF | .150 | .210 | .100 | .100 | M15U332*1 |
| 3900 pF | .150 | .210 | .100 | .100 | M15U392*1 |
| 4700 pF | .150 | .210 | .100 | .100 | M15U472*1 |
| 5600 pF | .150 | .210 | .100 | .100 | M15U562*1 |
| 6800 uF | .150 | .210 | .100 | .100 | M15U682*1 |
| 8200 pF | .150 | .210 | .100 | .100 | M15U822*1 |
| .01 uF | .150 | .210 | .100 | .100 | M15U103*1 |
| .01 uF | .200 | .260 | .125 | .100 | M20U103*1 |
| .01 uF | .200 | .260 | .125 | .200 | M22U103*1 |
| .012 uF | .150 | .210 | .100 | .100 | M15U123*1 |
| .012 uF | .200 | .260 | .125 | .100 | M20U123*1 |
| .012 uF | .200 | .260 | .125 | .200 | M22U123*1 |
| .015 uF | .150 | .210 | .100 | .100 | M15U153*1 |
| .015 uF | .200 | .260 | .125 | .100 | M20U153*1 |
| .015 uF | .200 | .260 | .125 | .200 | M22U153*1 |
| .018 uF | .150 | .210 | .100 | .100 | M15U183*1 |
| .018 uF | .200 | .260 | .125 | .100 | M20U183*1 |
| .018 uF | .200 | .260 | .125 | .200 | M22U183*1 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| .022 uF | .200 | .260 | .125 | .100 | M20U223*1 |
| .022 uF | .200 | .260 | .125 | .200 | M22U223*1 |
| .027 uF | .200 | .260 | .125 | .100 | M20U273*1 |
| .027 uF | .200 | .260 | .125 | .200 | M22U273*1 |
| .033 uF | .200 | .260 | .125 | .100 | M20U333*1 |
| .033 uF | .200 | .260 | .125 | .200 | M22U333*1 |
| .039 uF | .200 | .260 | .125 | .100 | M20U393*1 |
| .039 uF | .200 | .260 | .125 | .200 | M22U393*1 |
| .047 uF | .200 | .260 | .125 | .100 | M20U473*1 |
| .047 uF | .200 | .260 | .125 | .200 | M22U473*1 |
| .056 uF | .200 | .260 | .125 | .100 | M20U563*1 |
| .056 uF | .200 | .260 | .125 | .200 | M22U563*1 |
| .068 uF | .200 | .260 | .125 | .100 | M20U683*1 |
| .068 uF | .200 | .260 | .125 | .200 | M22U683*1 |
| .082 uF | .200 | .260 | .125 | .100 | M20U823*1 |
| .082 uF | .200 | .260 | .125 | .200 | M22U823*1 |
| .1 uF | .200 | .260 | .125 | .100 | M20U104*1 |
| .1 uF | .200 | .260 | .125 | .200 | M22U104*1 |
| .1 uF | .300 | .360 | .150 | .200 | M30U104*1 |
| .12 uF | .200 | .260 | .125 | .100 | M20U124*1 |
| .12 uF | .200 | .260 | .125 | .200 | M22U124*1 |
| .12 uF | .300 | .360 | .150 | .200 | M30U124*1 |
| .15 uF | .200 | .260 | .125 | .100 | M20U154*1 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| .15 uF | .200 | .260 | .125 | .200 | M22U154*1 |
| .15 uF | .300 | .360 | .150 | .200 | M30U154*1 |
| .18 uF | .300 | .360 | .150 | .200 | M30U184*1 |
| .22 uF | .300 | .360 | .150 | .200 | M30U224*1 |
| .27 uF | .300 | .360 | .150 | .200 | M30U274*1 |
| .33 uF | .300 | .360 | .150 | .200 | M30U334*1 |
| .33 uF | .400 | .460 | .150 | .200 | M40U334*1 |
| .39 uF | .300 | .360 | .150 | .200 | M30U394*1 |
| .39 uF | .400 | .460 | .150 | .200 | M40U394*1 |
| .47 uF | .300 | .360 | .150 | .200 | M30U474*1 |
| .47 uF | .400 | .460 | .150 | .200 | M40U474*1 |
| .56 uF | .400 | .460 | .150 | .200 | M40U564*1 |
| .68 uF | .400 | .460 | .150 | .200 | M40U684*1 |
| .82 uF | .400 | .460 | .150 | .200 | M40U824*1 |
| 1.0 uF | .400 | .460 | .150 | .200 | M40U105*1 |
| 1.0 uF | .500 | .560 | .200 | .400 | M50U105*1 |
| 1.2 uF | .400 | .460 | .150 | .200 | M40U125*1 |
| 1.2 uF | .500 | .560 | .200 | .400 | M50U125*1 |
| 1.5 uF | .400 | .460 | .150 | .200 | M40U155*1 |
| 1.5 uF | .500 | .560 | .200 | .400 | M50U155*1 |
| 1.8 uF | .500 | .560 | .200 | .400 | M50U185*1 |
| 2.2 uF | .500 | .560 | .200 | .400 | M50U225*1 |

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

Z5U Temperature Coefficient 50 VDC

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| 4700 pF | .150 | .210 | .100 | .100 | M15U472*5 |
| 5600 pF | .150 | .210 | .100 | .100 | M15U562*5 |
| 6800 pF | .150 | .210 | .100 | .100 | M15U682*5 |
| 8200 pF | .150 | .210 | .100 | .100 | M15U822*5 |
| .01 uF | .150 | .210 | .100 | .100 | M15U103*5 |
| .012 uF | .150 | .210 | .100 | .100 | M15U123*5 |
| .015 uF | .150 | .210 | .100 | .100 | M15U153*5 |
| .018 uF | .150 | .210 | .100 | .100 | M15U183*5 |
| .022 uF | .150 | .210 | .100 | .100 | M15U223*5 |
| .027 uF | .150 | .210 | .100 | .100 | M15U273*5 |
| .027 uF | .200 | .260 | .125 | .100 | M20U273*5 |
| .027 uF | .200 | .260 | .125 | .200 | M22U273*5 |
| .033 uF | .150 | .210 | .100 | .100 | M15U333*5 |
| .033 uF | .200 | .260 | .125 | .100 | M20U333*5 |
| .033 uF | .200 | .260 | .125 | .200 | M22U333*5 |
| .039 uF | .150 | .210 | .100 | .100 | M15U393*5 |
| .039 uF | .200 | .260 | .125 | .100 | M20U393*5 |
| .039 uF | .200 | .260 | .125 | .200 | M22U393*5 |
| .047 uF | .150 | .210 | .100 | .100 | M15U473*5 |
| .047 uF | .200 | .260 | .125 | .100 | M20U473*5 |
| .047 uF | .200 | .260 | .125 | .200 | M22U473*5 |
| .056 uF | .150 | .210 | .100 | .100 | M15U563*5 |
| .056 uF | .200 | .260 | .125 | .100 | M20U563*5 |
| .056 uF | .200 | .260 | .125 | .200 | M22U563*5 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| .068 uF | .150 | .210 | .100 | .100 | M15U683*5 |
| .068 uF | .200 | .260 | .125 | .100 | M20U683*5 |
| .068 uF | .200 | .260 | .125 | .200 | M22U683*5 |
| .082 uF | .200 | .260 | .125 | .100 | M20U823*5 |
| .082 uF | .200 | .260 | .125 | .200 | M22U823*5 |
| .1 uF | .150 | .210 | .100 | .100 | M15U104*5 |
| .1 uF | .200 | .260 | .125 | .100 | M20U104*5 |
| .1 uF | .200 | .260 | .125 | .200 | M22U104*5 |
| .12 uF | .200 | .260 | .125 | .100 | M20U124*5 |
| .12 uF | .200 | .260 | .125 | .200 | M22U124*5 |
| .15 uF | .200 | .260 | .125 | .100 | M20U154*5 |
| .15 uF | .200 | .260 | .125 | .200 | M22U154*5 |
| .18 uF | .200 | .260 | .125 | .100 | M20U184*5 |
| .18 uF | .200 | .260 | .125 | .200 | M22U184*5 |
| .22 uF | .200 | .260 | .125 | .100 | M20U224*5 |
| .22 uF | .200 | .260 | .125 | .200 | M22U224*5 |
| .27 uF | .200 | .260 | .125 | .100 | M20U274*5 |
| .27 uF | .200 | .260 | .125 | .200 | M22U274*5 |
| .27 uF | .300 | .360 | .150 | .200 | M30U274*5 |
| .33 uF | .200 | .260 | .125 | .100 | M20U334*5 |
| .33 uF | .200 | .260 | .125 | .200 | M22U334*5 |
| .33 uF | .300 | .360 | .150 | .200 | M30U334*5 |
| .39 uF | .200 | .260 | .125 | .100 | M20U394*5 |
| .39 uF | .200 | .260 | .125 | .200 | M22U394*5 |
| .39 uF | .300 | .360 | .150 | .200 | M30U394*5 |

| Capacity | Size (Inches) | | | | Catalog Number |
|----------|---------------|------|------|------|----------------|
| | L | H | T | S | |
| .47 uF | .200 | .260 | .125 | .100 | M20U474*5 |
| .47 uF | .200 | .260 | .125 | .200 | M22U474*5 |
| .47 uF | .300 | .360 | .150 | .200 | M30U474*5 |
| .56 uF | .200 | .260 | .125 | .100 | M20U564*5 |
| .56 uF | .200 | .260 | .125 | .200 | M22U564*5 |
| .56 uF | .300 | .360 | .150 | .200 | M30U564*5 |
| .68 uF | .300 | .360 | .150 | .200 | M30U684*5 |
| .82 uF | .300 | .360 | .150 | .200 | M30U824*5 |
| 1.0 uF | .300 | .360 | .150 | .200 | M30U105*5 |
| 1.2 uF | .300 | .360 | .150 | .200 | M30U125*5 |
| 1.2 uF | .400 | .460 | .150 | .200 | M40U125*5 |
| 1.5 uF | .300 | .360 | .150 | .200 | M30U155*5 |
| 1.5 uF | .400 | .460 | .150 | .200 | M40U155*5 |
| 1.8 uF | .300 | .360 | .150 | .200 | M30U185*5 |
| 1.8 uF | .400 | .460 | .150 | .200 | M40U185*5 |
| 2.2 uF | .400 | .460 | .150 | .200 | M40U225*5 |
| 2.7 uF | .400 | .460 | .150 | .200 | M40U275*5 |
| 3.3 uF | .400 | .460 | .150 | .200 | M40U335*5 |
| 3.9 uF | .400 | .460 | .150 | .200 | M40U395*5 |
| 3.9 uF | .500 | .560 | .200 | .400 | M50U395*5 |
| 4.7 uF | .400 | .460 | .150 | .200 | M40U475*5 |
| 4.7 uF | .500 | .560 | .200 | .400 | M50U475*5 |
| 5.6 uF | .500 | .560 | .200 | .400 | M50U565*5 |
| 6.8 uF | .500 | .560 | .200 | .400 | M50U685*5 |

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

Add 'TR' to end of part number for Tape & Reel
M15, M20, M22 - 2,500 per reel
M30 - 1,500 per reel
M40 - 1,000 per reel
M50 - N/A
(Available in full reels only)