

# RF/Microwave Capacitors

## RF/Microwave C0G (NP0) Capacitors

### Ultra Low ESR "U" Series, C0G (NP0) Capacitors (RoHS)

#### Automotive, AEC Q200 Qualified



#### GENERAL INFORMATION

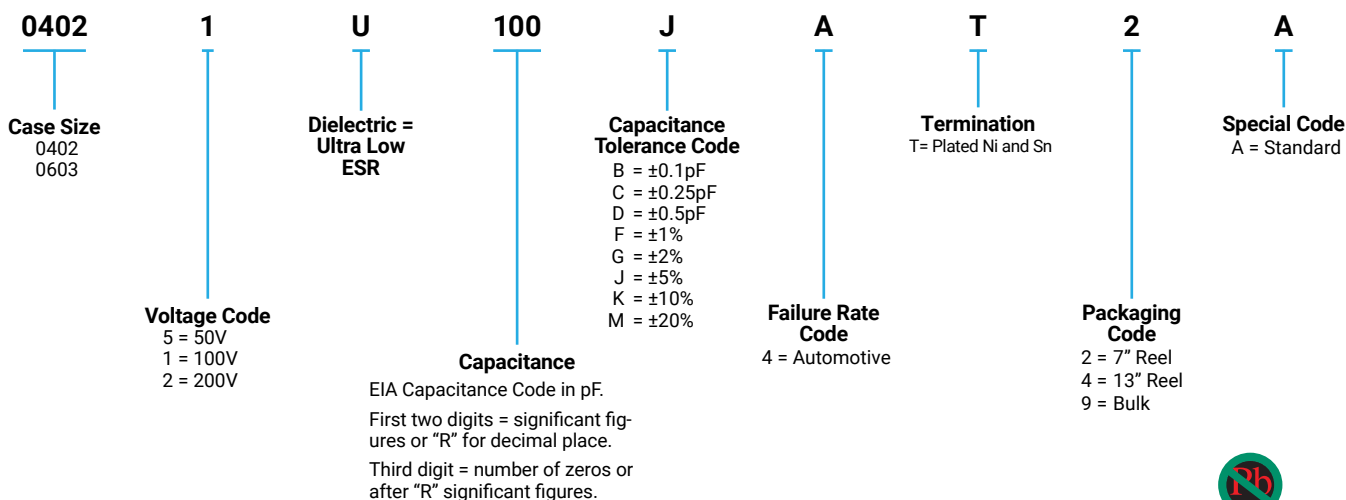
Automotive "U" Series capacitors are C0G (NP0) chip capacitors specially designed for "Ultra" low ESR for applications in the automotive market. Max ESR and effective capacitance are met on each value producing lot to lot uniformity. Sizes available are EIA chip sizes 0402 and 0603.

#### DIMENSIONS: inches (millimeters)



inches (mm)					
Size	A	B	C	D	E
0402	0.039±0.004 (1.00±0.1)	0.020±0.004 (0.50±0.1)	0.024 max (0.6)	N/A	N/A
0603	0.060±0.010 (1.52±0.25)	0.030±0.010 (0.76±0.25)	0.036 max (0.91)	0.010±0.005 (0.25±0.13)	0.030 min (0.76)

#### HOW TO ORDER



#### ELECTRICAL CHARACTERISTICS

##### Capacitance Values and Tolerances:

Size 0402 - 0.2 pF to 22 pF @ 1 MHz  
 Size 0603 - 1.0 pF to 100 pF @ 1 MHz

##### Temperature Coefficient of Capacitance (TC):

0±30 ppm/°C (-55° to +125°C)

##### Insulation Resistance (IR):

10<sup>12</sup> Ω min. @ 25°C and rated WVDC  
 10<sup>11</sup> Ω min. @ 125°C and rated WVDC

##### Working Voltage (WVDC):

Size	Working Voltage
0402	- 100, 50, 25 WVDC
0603	- 200, 100, 50 WVDC

##### Dielectric Working Voltage (DWV):

250% of rated WVDC

##### Equivalent Series Resistance Typical (ESR):

0402	-	See Performance Curve, page 303
0603	-	See Performance Curve, page 303

##### Automotive Specifications

Meets or exceeds the requirements of AEC Q200



LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



RoHS  
COMPLIANT

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#### CAPACITANCE RANGE

Cap (pF)	Available Tolerance	Size 0402	Size 0603
0.2	B,C	50V	N/A
0.3			
0.4			
0.5	B,C		
0.6	B,C,D		
0.7			
0.8	B,C,D		
0.9			

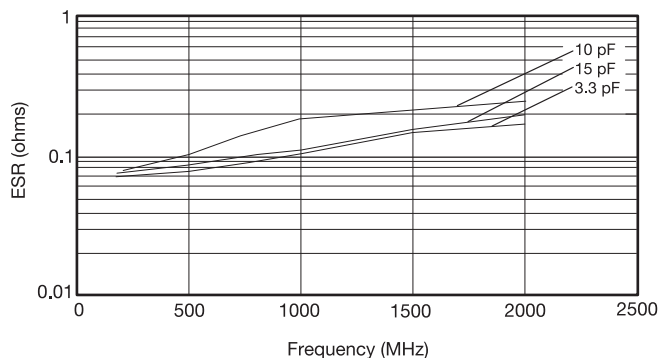
Cap (pF)	Available Tolerance	Size 0402	Size 0603
1.0	B,C,D	50V	200V
1.1			
1.2			
1.3			
1.4			
1.5			
1.6			
1.7			
1.8			
1.9			
2.0			
2.1			
2.2			
2.4			
2.7			
3.0			
3.3			
3.6			
3.9			
4.3			
4.7			
5.1			
5.6			
6.2	B,C,D		
6.8	B,C,J,K,M		

Cap (pF)	Available Tolerance	Size 0402	Size 0603
7.5	B,C,J,K,M	50V	200V
8.2			
9.1	B,C,J,K,M		
10	F,G,J,K,M		
11			
12			
13			
15			
18			
20			200V
22			100V
24			
27			
30		50V	
33		N/A	
36			
39			
43			
47			
51			
56			
68			
75			
82			
91			

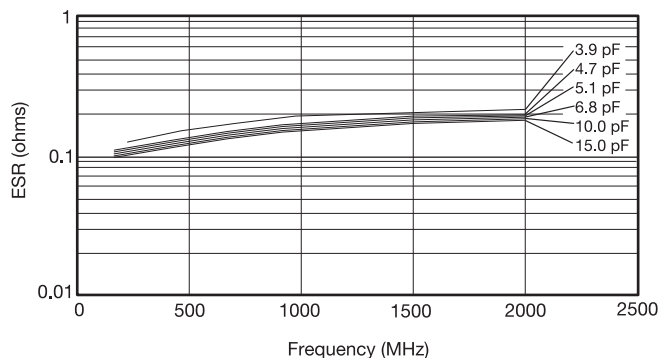
Cap (pF)	Available Tolerance	Size 0402	Size 0603
100	F,G,J,K,M	N/A	100V
110			50V
120			50V
130			N/A
140			
150			
160			
180			
200			
220			
270			
300			
330			
360			
390			
430			
470			
510			
560			
620			
680			
750			
820			
910			
1000	F,G,J,K,M		

#### ULTRA LOW ESR, "U" SERIES

TYPICAL ESR vs. FREQUENCY  
0402 "U" SERIES



TYPICAL ESR vs. FREQUENCY  
0603 "U" SERIES



TYPICAL  
SERIES RESONANT FREQUENCY  
"U" SERIES CHIP

