

# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### 600S Ultra-Low ESR, High Q, NPO Capacitors



## FEATURES

- Lowest ESR in Class
- Highest Working Voltage in Class - 250 V
- Standard EIA Size: 0603
- Laser Marking (Optional)
- High Self-Resonance Frequencies

## 600 SERIES OVERVIEW

Series	Case Size	EIA Case Size
600	L	0402
600	S	0603
600	F	0805

## APPLICATIONS

- Cellular Base Stations
- Broadband Wireless Services
- Satellite Communications
- Subscriber-based Wireless Devices
- WiFi (802.11)
- Public Safety Radio

## CIRCUIT APPLICATIONS

- Filter Networks
- High Q Frequency Sources
- Matching Networks
- Tuning, Coupling, Bypass and DC Blocking

## ELECTRICAL SPECIFICATIONS

<b>Capacitance</b>	0.1 to 100 pF
<b>Tolerances</b>	See Cap Value Chart
<b>Working Voltage (WVDC)</b>	250 V
<b>Quality Factor (Q)</b>	> 2000 @ 1 MHz
<b>Operating Temperature Range</b>	-55°C to +125°C (no derating of working voltage)
<b>Temperature Coefficient of Capacitance (TCC)</b>	0 ± 30 ppm/°C, -55°C to +125°C 10 <sup>5</sup> MΩ min. at +25°C at rated WVDC 10 <sup>4</sup> MΩ min. at +125°C at rated WVDC
<b>Dielectric Withstanding Voltage (DWV)</b>	2.5 x WVDC for 5 seconds
<b>Aging</b>	None
<b>Piezo Effects</b>	None

## PACKAGING OPTIONS



Tape & Reel



Vertical Orientation Tape & Reel



## ENVIRONMENTAL CHARACTERISTICS

<b>Thermal Shock</b>	5 Cycles, -55°C to 125°C
<b>Moisture Resistance</b>	Mil-STD-202, Method 106
<b>Life Test</b>	2000 hours at 125°C at 2X WVDC
<b>Solderability</b>	Solder Coverage > 90% of end termination
<b>Terminal Strength</b>	4 lbs. typ., 2 lb. min.
<b>Military Approval</b>	DSCC Drawing Number 05002

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## CAPACITANCE VALUES

Value (pF)	Cap Code	Marking	Tolerances	Value (pF)	Cap Code	Marking	Tolerances	Value (pF)	Cap Code	Marking	Tolerances
0.1	0R1	A9	A, B	2.7	2R7	L0	A, B, C, D	20	200	H1	F, G, J, K, M
0.2	0R2	H9	A, B	3.0	3R0	M0	A, B, C, D	22	220	J1	F, G, J, K, M
0.3	0R3	M9	A, B, C	3.3	3R3	N0	A, B, C, D	24	240	K1	F, G, J, K, M
0.4	0R4	d9	A, B, C	3.6	3R6	P0	A, B, C, D	27	270	L1	F, G, J, K, M
0.5	0R5	f9	A, B, C	3.9	3R9	Q0	A, B, C, D	30	300	M1	F, G, J, K, M
0.6	0R6	m9	A, B, C	4.3	4R3	R0	A, B, C, D	33	330	N1	F, G, J, K, M
0.7	0R7	n9	A, B, C	4.7	4R7	S0	A, B, C, D	36	360	P1	F, G, J, K, M
0.8	0R8	t9	A, B, C	5.1	5R1	T0	A, B, C, D	39	390	Q1	F, G, J, K, M
0.9	0R9	y9	A, B, C	5.6	5R6	U0	A, B, C, D	43	430	R1	F, G, J, K, M
1.0	1R0	A0	A, B, C, D	6.2	6R2	V0	A, B, C, D	47	470	S1	F, G, J, K, M
1.1	1R1	B0	A, B, C, D	6.8	6R8	W0	B, C, J, K	51	510	T1	F, G, J, K, M
1.2	1R2	C0	A, B, C, D	7.5	7R5	X0	B, C, J, K	56	560	U1	F, G, J, K, M
1.3	1R3	D0	A, B, C, D	8.2	8R2	Y0	B, C, J, K	62	620	V1	F, G, J, K, M
1.5	1R5	E0	A, B, C, D	9.1	9R1	Z0	B, C, J, K	68	680	W1	F, G, J, K, M
1.6	1R6	F0	A, B, C, D	10	100	A1	F, G, J, K, M	75	750	X1	F, G, J, K, M
1.8	1R8	G0	A, B, C, D	11	110	B1	F, G, J, K, M	82	820	Y1	F, G, J, K, M
2.0	2R0	H0	A, B, C, D	12	120	C1	F, G, J, K, M	91	910	Z1	F, G, J, K, M
2.2	2R2	J0	A, B, C, D	15	150	E1	F, G, J, K, M	100	101	A2	F, G, J, K, M
2.4	2R4	K0	A, B, C, D	18	180	G1	F, G, J, K, M				

## HOW TO ORDER

**Series** 600  
**Case Size** S  
 See mechanical dimensions below  
**Capacitance Code** 0R2  
 EIA Capacitance Code in pF.  
 Third digit = number of zeros or after "R" significant figures  
**Capacitance Tolerance Code** B  
**Voltage Rating** T  
**Termination Style Code** 250  
**Laser Marking (Optional)** X\*\*  
**Packaging** T

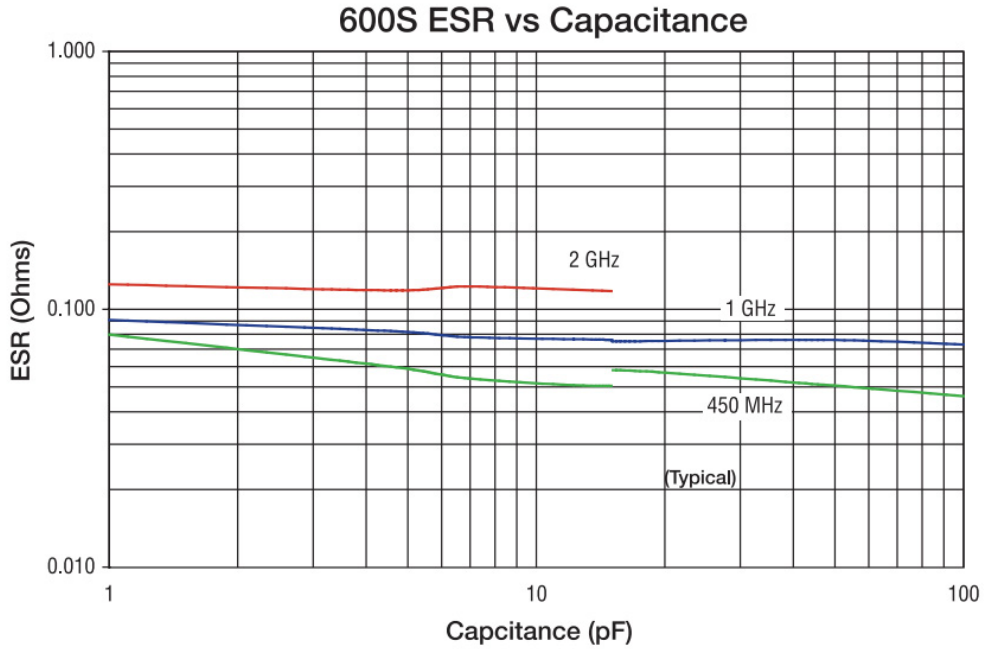
**Packaging**  
 T = Tape and Reel, 500 pcs  
 T4K = Tape and Reel, 4000 pcs  
 TV = Vertical Tape and Reel, 500 pcs

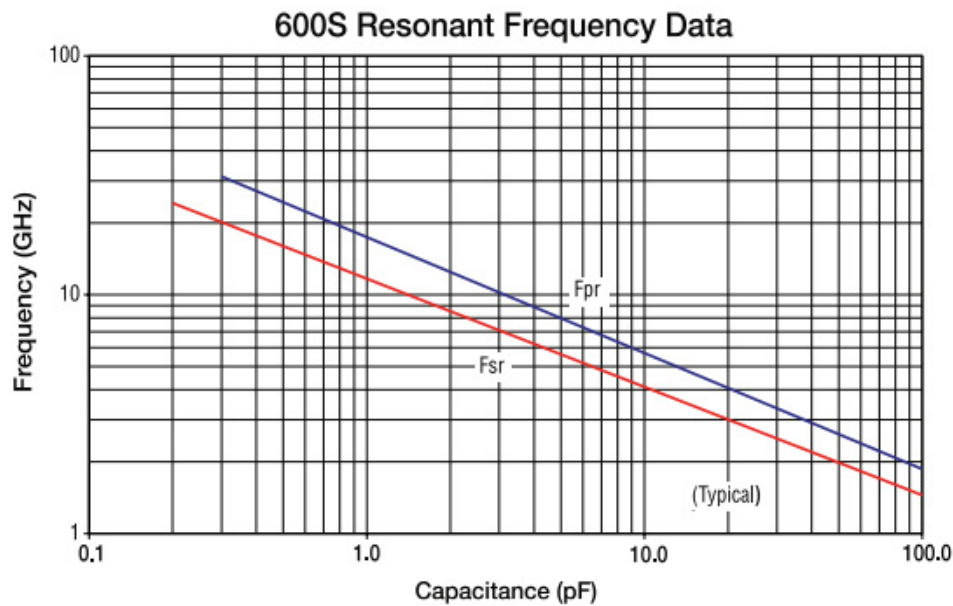
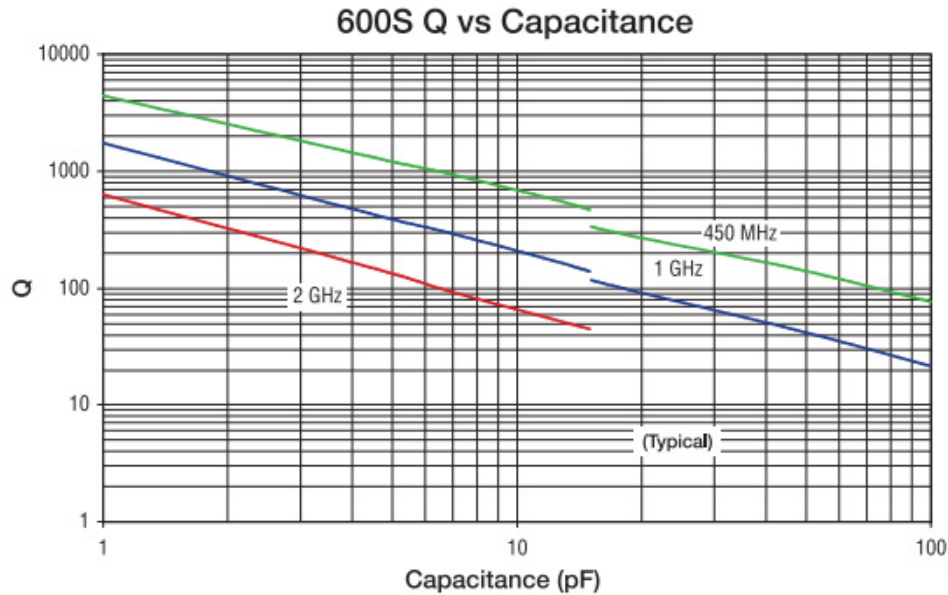
**Laser Marking (Optional)**  
**Voltage Rating**  
**Termination Style Code**  
 T = Tin Plated over Nickel Barrier (RoHS Compliant)  
 TN = Tin Plated Non-Magnetic Barrier  
 W = Tin/Lead Solder Nickel Barrier

Code	A	B	C	D	F	G	J	K	M
Tol.	±0.05 pF	±0.1 pF	±0.25 pF	±0.5 pF	±1%	±2%	±5%	±10%	±20%

The above part number refers to a 600F Series (case size F) 10 pF capacitor, J tolerance (±5%), 250 WVDC, with T termination (Tin Plated over Nickel Barrier, RoHS Compliant), Laser Marking and Tape and Reel packaging.

\*\*Laser Marking is optional





#### 600F Series Data Sheet Condition Description

Capacitors horizontally mounted on 13.3-mil thick Rogers R0435® softboard 29-mils wide 1/2 oz. Cu traces  
**FSR** = lowest frequency at which S11 response, referenced at capacitor edge, crosses real axis on Smith Chart.  
**FPR** = lowest frequency at which there is a notch in S21 magnitude response.