



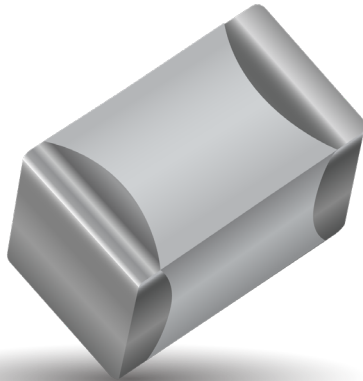
**THE DATASHEET OF
600L0R2AT200T**



RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

600L Ultra-Low ESR NPO Capacitors



FEATURES

- Lowest ESR in Class
- Highest Working Voltage in Class - 200 V
- Capacitance Range 0.1 pF to 27 pF
- High Q
- High Self-Resonance

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

Temperature Coefficient (TCC)	0 ± 30 PPM/°C
Capacitance Range	0.1 pF to 27 pF
Operating Temperature	-55°C to +125°C*
Quality Factor	Greater than 2,000 at 1 MHz (Cap Values ≤10pf .0010 Max. @ 1MHz Cap Values >10pf .0005 Max. @ 1MHz)
Insulation Resistance (IR)	10 ⁵ Megohms min. @ 25°C at rated WVDC 10 ⁴ Megohms min. @ 125°C at rated WVDC
Working Voltage (WVDC)	200 V
Dielectric Withstanding Voltage (DWV)	250% of rated WVDC for 5 seconds
Aging Effects	None
Piezoelectric Effects	None

PACKAGING OPTIONS



Tape & Reel



ENVIRONMENTAL CHARACTERISTICS

Thermal Shock	5 Cycles, -55°C to 125°C
Moisture Resistance	Mil-STD-202, Method 106
Life Test	2000 hours at 125°C at 2X
Solderability	Solder Coverage > 90% of end termination
Terminal Strength	2 lbs. typ., 1 lb. min.
Military Approval	DSCC Drawing Number 05003

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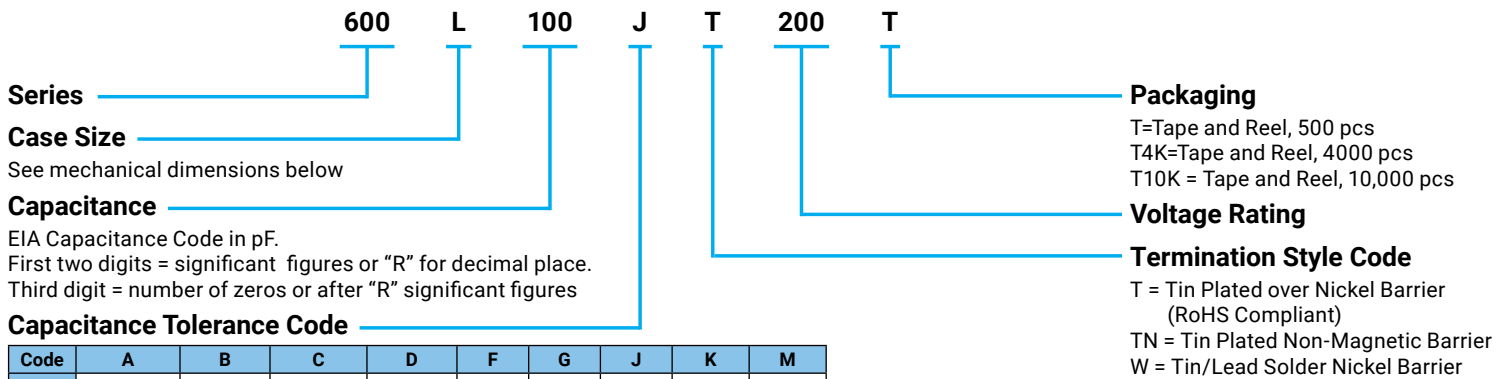
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CAPACITANCE VALUES

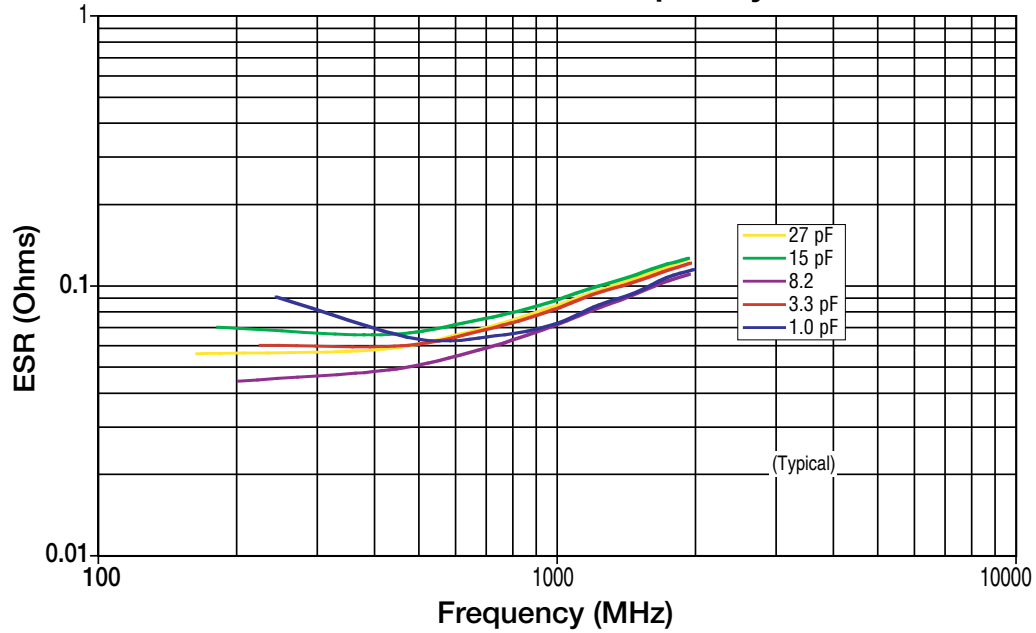
Value (pF)	Cap Code	Tolerances	Value (pF)	Cap Code	Tolerances	Value (pF)	Cap Code	Tolerances
0.1	0R1	A, B	1.6	1R6	A, B, C, D	6.2	6R2	A, B, C, D
0.2	0R2	A, B	1.8	1R8	A, B, C, D	6.8	6R8	B, C, J, K
0.3	0R3	A, B, C	2.0	2R0	A, B, C, D	7.5	7R5	B, C, J, K
0.4	0R4	A, B, C	2.2	2R2	A, B, C, D	8.2	8R2	B, C, J, K
0.5	0R5	A, B, C	2.4	2R4	A, B, C, D	9.1	9R1	B, C, J, K
0.6	0R6	A, B, C	2.7	2R7	A, B, C, D	10	100	F, G, J, K, M
0.7	0R7	A, B, C	3.0	3R0	A, B, C, D	11	110	F, G, J, K, M
0.8	0R8	A, B, C	3.3	3R3	A, B, C, D	12	120	F, G, J, K, M
0.9	0R9	A, B, C	3.6	3R6	A, B, C, D	15	150	F, G, J, K, M
1.0	1R0	A, B, C, D	3.9	3R9	A, B, C, D	18	180	F, G, J, K, M
1.1	1R1	A, B, C, D	4.3	4R3	A, B, C, D	20	200	F, G, J, K, M
1.2	1R2	A, B, C, D	4.7	4R7	A, B, C, D	22	220	F, G, J, K, M
1.3	1R3	A, B, C, D	5.1	5R1	A, B, C, D	24	240	F, G, J, K, M
1.5	1R5	A, B, C, D	5.6	5R6	A, B, C, D	27	270	F, G, J, K, M

HOW TO ORDER

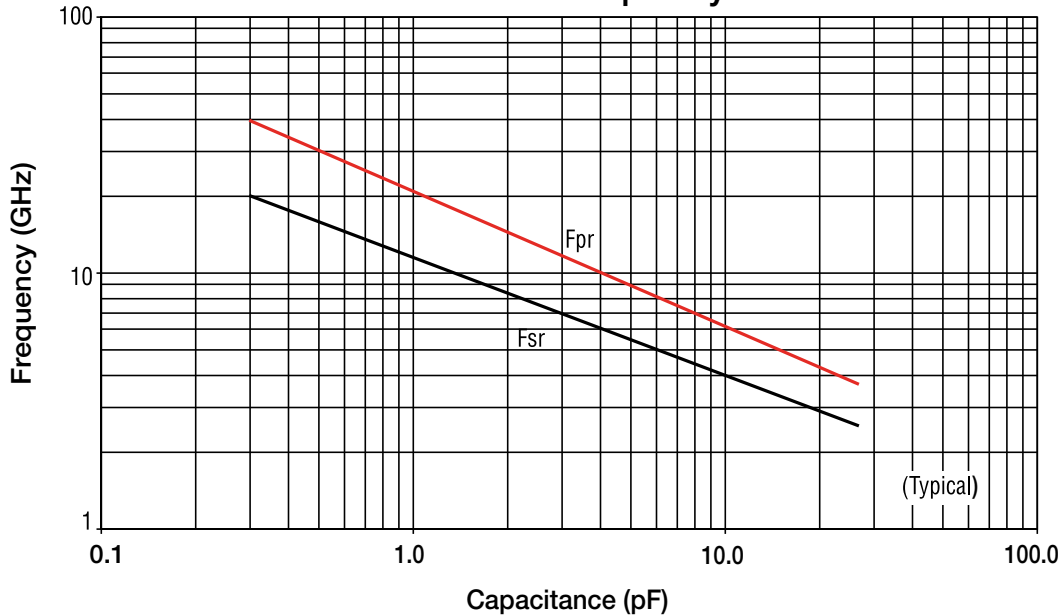


*All Tape and Reel Packaging comes on 7" reels. The above part number refers to a 600L Series (case size L) 11 pF capacitor, J tolerance (±5%), 200 WVDC, with T termination (Tin Plated over Nickel Barrier, RoHS Compliant), Tape and Reel packaging.

600L ESR vs. Frequency



600L Resonant Frequency Data



ATC 600L Series Data Sheet Test Condition Description

Capacitors mounted in series microstrip configuration on 10-mil thick Rogers R04350® softboard, 22-mils wide 1/2 oz. Cu traces.

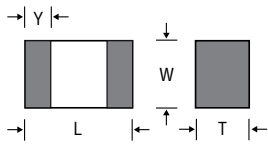
FSR = lowest frequency at which S11 response, referenced at capacitor edge, crosses real axis on Smith Chart.

FPR = lowest frequency at which there is a notch in S21 magnitude response.

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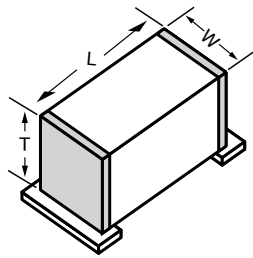
OUTLINE DIMENSIONS



L (0402)	L: .040 ± .004 (1.02 ± 0.1)	T: .024 max (0.60 max)
	W: .020 ± .004 (.51 ± 0.1)	Y: .010 ± .006 (0.25 ± 0.15)

inches (mm)

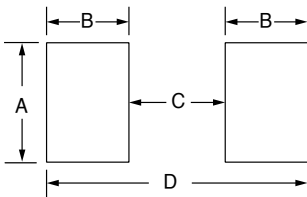
SUGGESTED MOUNTING PAD DIMENSIONS



Case Size L, S, and F

Case Size	A Min.	B Min.	C Min.	D Min.
0402 (1005)	.0275 (0.70)	.0354 (0.90)	.0157 (0.40)	.0866 (2.20)
0603 (1608)	.0393 (1.00)	.0433 (1.10)	.0236 (0.60)	.110 (2.80)
0805 (2012)	.0590 (1.50)	.0512 (1.30)	.0236 (0.60)	.1259 (3.20)

inches (mm)



DESIGN KITS

Kit #	RoHS Compliant	Item #	Description	Cap. Value Range (pF)	Cap. Value (pF)	Tol. (pF)	Price
Kit 36T		DK0036T	600L Series Ultra-low ESR, High Q Microwave Capacitors 16 different values, 15 pcs. min. per value	0.1 to 2.0	0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5.....	±0.1	\$100.00
					1.6, 1.8, 2.0	±0.25	
Kit 37T		DK0037T	600L Series Ultra-low ESR, High Q Microwave Capacitors 16 different values, 15 pcs. min. per value	0.1 to 10	1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3	±0.1	\$100.00
					3.9, 4.7, 5.6, 6.8, 8.2	±0.25	
					10	±5%	
Kit 38T		DK0038T	600L Series Ultra-low ESR, High Q Microwave Capacitors 8 different values, 15 pcs. min. per value	10 to 27	10, 12, 15, 18, 20, 22, 24, 27	±5%	\$100.00

For Online Kit Orders, Catalog & Application Notes, Visit: www.avx.com

Looking for pricing, stock, or lifecycle information?

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-  [American Technical Ceramics](#) Information

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-  Shortage Management
-  Alternative Solution
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