


	DATASHEET	Part No.
	Ultra-Low ESR, High Q, C0G/NPO Microwave Capacitor	A60F series

CUSTOMER :

DATA SHEET

Product name	: Ultra-Low ESR, High Q, C0G/NPO Microwave Capacitor
Part number	: A60F series
Features	: 2012mm/0805inch, C0G/NP0, DC250V, High Q
Revision date	: 2020/07/07

 	Address : 380, NAMDONGSEO-RO, NAMDONG-GU INCHEON, 21629 KOREA (AMOTECH. CO., LTD)
	Contact : TEL) 82-32-821-0363, FAX) 82-32-811-0283

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	Ultra-Low ESR, High Q, COG/NPO Microwave Capacitor	A60F series

1. Features :

- Lowest ESR in Class
- **Highest Working Voltage in class – 250V**
- High Self Resonance Frequencies
- Low Inter-Modulation (IM) performance
- Standard EIA Size : 0805
- Laser Marking (Optional)
- RoHS Compliant

2. Applications :

- 4G-LTE/ 5G NR/ Small Cells/ CBRS/ WiFi 6E/
- IoT / RFID
- Medical/ Autonomous / Automotive / Aerospace

3. Circuit Applications :

- Discrete lumped element filtering networks
- Input/ Output and Inter stage matching networks
- Circuit tuning, signal coupling, high current shunts, bypass and DC blocking circuits

4. Part Number Code & Ordering Information

- Product Part No.

Series Name	Size	Capacitance	Cap tolerance	Terminal	Voltage	Laser Marked	Packing info.
<u>A60</u>	<u>F</u>	<u>0R2</u>	<u>B</u>	<u>T</u>	<u>250</u>	<u>X</u>	<u>T</u>

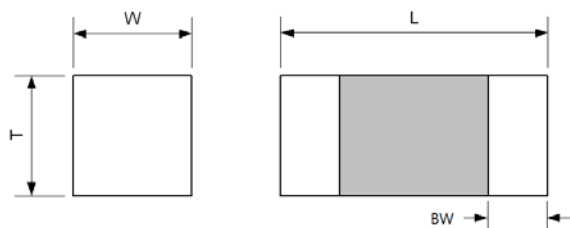
- **Series Name** : A60
- **Size** : F – 2012 mm, 0805 inch
- **Capacitance/ Cap tolerance** : Refer to "6. Capacitance Values, Markings & Tolerances"
- **Terminal** : "T"-Sn plated over Ni Barrier "W"-Sn/Lead Solder plated over Ni Barrier
"TN"-Sn plated over Non-Magnetic Barrier
- **Working Voltage** : WVDC – Working Voltage of DC
- **Laser Marked** : X (Optional)
- **Packing info.** : T - Tape and Reel *

5. Specifications

■ Electrical Specifications

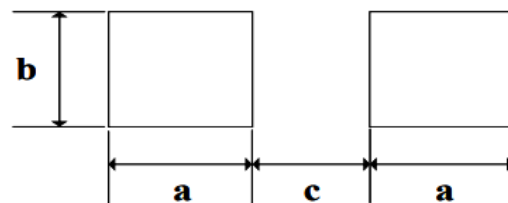
Capacitance	0.1 to 240pF
Tolerances	Refer to <u>6. Capacitance Values, Markings & Tolerances</u>
Working Voltage (WVDC)	250V
Quality Factor (Q)	2000 min. @ 1MHz
Temperature Range	-55 °C to + 125 °C (no derating of working voltage)
Temperature coefficient of Capacitances (TCC)	0± 30 ppm/°C, -55°C to + 125°C
Insulation Resistance	10 ⁵ MΩ min. at + 25°C at rated WVDC 10 ⁴ MΩ min. at + 125°C at rated WVDC
Dielectric Withstanding Voltage (DWV)	2.5 x WVDC for 5 seconds
Aging	None
Piezo Effects	None

■ Mechanical dimension



	L	W	T	BW
Size (mm)	2.0 ±0.20	1.24 ±0.20	1.3 max.	0.5 ±0.2

■ Recommended solder pad



	a	b	c
Size (mm)	1.3 ±0.05	1.5 ±0.10	0.6 ±0.10

■ Mechanical Specifications

Solderability	Solder coverage > 90% of end termination
Terminal Strength	4 lbs. Typ., 2 lbs. min. (1.8kg typ. 0.9kg min.)

■ Environmental Specifications

Life Test	2000 hours, +125°C at 2 X WVDC
Thermal Shock	5 cycles, -55°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106

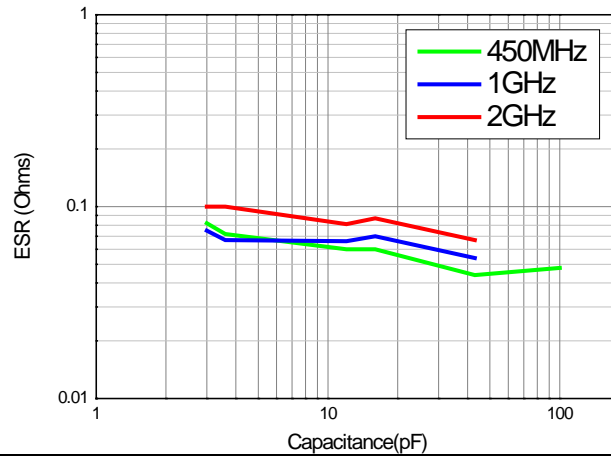
6. Capacitance Values, Markings & Tolerances

Value [pF]	Cap Code	Marking	Tolerance	Value [pF]	Cap Code	Marking	Tolerance	Value [pF]	Cap Code	Marking	Tolerance
0.1	0R1	A9	A,B	3.3	3R3	N0	A,B,C,D	30	300	M1	F,G,J,K,M
0.2	0R2	H9	A,B	3.6	3R6	P0	A,B,C,D	33	330	N1	F,G,J,K,M
0.3	0R3	M9	A,B,C	3.9	3R9	Q0	A,B,C,D	36	360	P1	F,G,J,K,M
0.4	0R4	d9	A,B,C	4.3	4R3	R0	A,B,C,D	39	390	Q1	F,G,J,K,M
0.5	0R5	f9	A,B,C	4.7	4R7	S0	A,B,C,D	43	430	R1	F,G,J,K,M
0.6	0R6	m9	A,B,C	5.1	5R1	T0	A,B,C,D	47	470	S1	F,G,J,K,M
0.7	0R7	n9	A,B,C	5.6	5R6	U0	A,B,C,D	51	510	T1	F,G,J,K,M
0.8	0R8	t9	A,B,C	6.2	6R2	V0	A,B,C,D	56	560	U1	F,G,J,K,M
0.9	0R9	y9	A,B,C	6.8	6R8	W0	B,C,J,K	62	620	V1	F,G,J,K,M
1.0	1R0	A0	A,B,C,D	7.5	7R5	X0	B,C,J,K	68	680	W1	F,G,J,K,M
1.1	1R1	B0	A,B,C,D	8.2	8R2	Y0	B,C,J,K	75	750	X1	F,G,J,K,M
1.2	1R2	C0	A,B,C,D	9.1	9R1	Z0	B,C,J,K	82	820	Y1	F,G,J,K,M
1.3	1R3	D0	A,B,C,D	10	100	A1	F,G,J,K,M	91	910	Z1	F,G,J,K,M
1.5	1R5	E0	A,B,C,D	11	110	B1	F,G,J,K,M	100	101	A2	F,G,J,K,M
1.6	1R6	F0	A,B,C,D	12	120	C1	F,G,J,K,M	110	111	B2	F,G,J,K,M
1.8	1R8	G0	A,B,C,D	15	150	E1	F,G,J,K,M	120	121	C2	F,G,J,K,M
2.0	2R0	H0	A,B,C,D	18	180	G1	F,G,J,K,M	150	151	E2	F,G,J,K,M
2.2	2R2	J0	A,B,C,D	20	200	H1	F,G,J,K,M	180	181	G2	F,G,J,K,M
2.4	2R4	K0	A,B,C,D	22	220	J1	F,G,J,K,M	200	201	H2	F,G,J,K,M
2.7	2R7	L0	A,B,C,D	24	240	K1	F,G,J,K,M	220	221	J2	F,G,J,K,M
3.0	3R0	M0	A,B,C,D	27	270	L1	F,G,J,K,M	240	241	K2	F,G,J,K,M

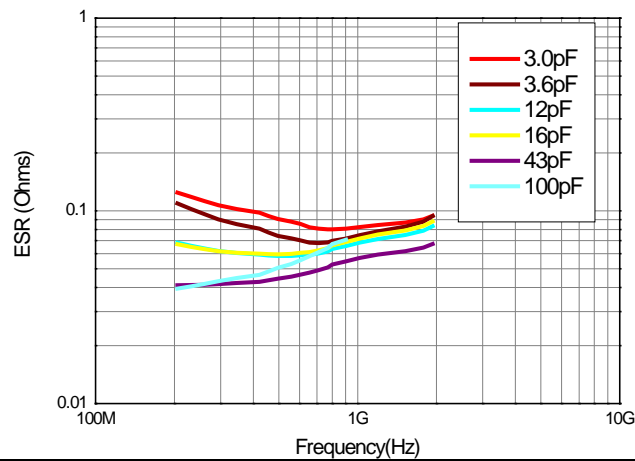
* **Cap tolerance** : "P"-±0.02pF "Q"-±0.03pF "A"-±0.05pF "B"-±0.1pF "C"-±0.25pF "D"-±0.5pF
 "F"-±1% "G"-±2% "J"-±5% "K"-±10% "M"-±20%

7. Series & Parallel Resonance Curves

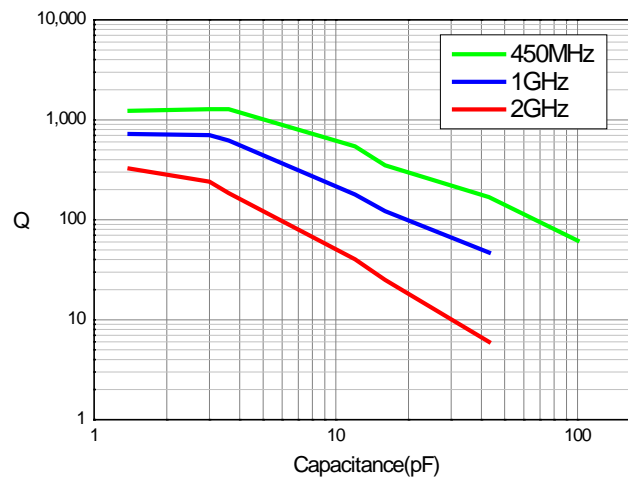
ESR vs Capacitance



ESR vs Frequency

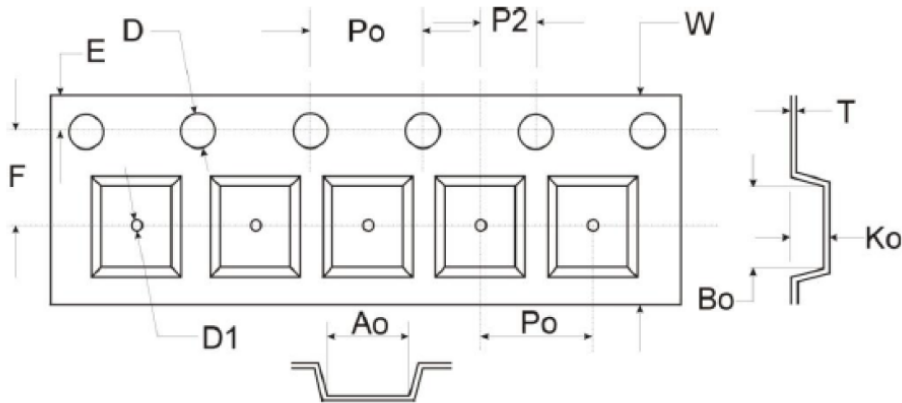


Q vs Capacitance



8. Tape and Reel Specification

■ **Size**



unit :mm

	W	P	E	F	D	D ₁	P ₀	P ₂	A ₀	B ₀	K ₀	t
Spec.	8.00	4.00	1.75	3.50	1.50	1.00	4.00	2.00	1.45	2.25	1.25	0.230
Tolerance	+0.30 -0.10	+0.10 -0.10	+0.10 -0.10	+0.05 -0.05	+0.10 -0.00	+0.25 -0.00	+0.10 -0.10	+0.05 -0.05	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.013 -0.013

■ **Material**

- 1) carrier tape: PET/ PC/ PS
- 2) Top tape (Cover tape): Polyester film

※ **Packing Amount Information**

Prototype - 500 pcs on 7 inch reel

Production – 3000 pcs (for 0805) on 7 inch reel (Always laser marked)

4000 pcs (for 0603) on 7 inch reel (Always laser marked)

10,000 pcs (for 0402 & 0201) on 7 inch reel