


	DATASHEET	Part No.
	Ultra-Low ESR, High Q, C0G/NPO Microwave Capacitor	A60S series

CUSTOMER :

DATA SHEET

Product name	: Ultra-Low ESR, High Q, C0G/NPO Microwave Capacitor
Part number	: A60S series
Features	: 1608mm/0603inch, C0G/NP0, DC250V, High Q
Revision date	: 2021/07/13

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	Ultra-Low ESR, High Q, COG/NPO Microwave Capacitor	A60S 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 : 0603
- 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>S</u>	<u>0R2</u>	<u>B</u>	<u>T</u>	<u>250</u>	<u>X</u>	<u>T</u>

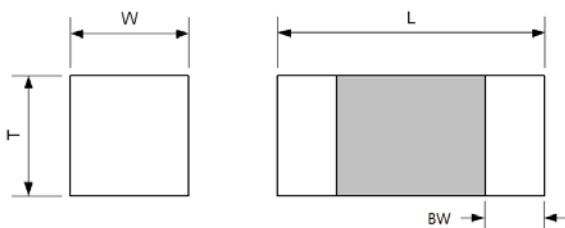
- **Series Name** : A60
- **Size** : S – 1608 mm, 0603 inch
- **Capacitance/ Cap tolerance** : Refer to "[6. Capacitance Values, Markings & Tolerances](#)"
- **Terminal** : "T"-Sn plated over Ni Barrier "TN"-Sn plated over Non-Magnetic Barrier
- **Working Voltage** : WVDC – Working Voltage of DC
- **Laser Marked** : X (Optional)
- **Packing info.** : T – Tape and Reel *

5. Specifications

■ Electrical Specifications

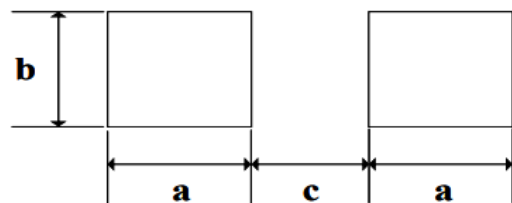
Capacitance	0.1 to 100pF
Tolerances	Refer to <u>6. Capacitance Values, Markings & Tolerances</u>
Working Voltage (WVDC)	250V
Quality Factor (Q)	2000 min. @ 1MHz
Temperature Range	-55 °C to + 125 °C (no derating of working voltage)
Temperature coefficient of Capacitances (TCC)	0± 30 ppm/°C, -55°C to + 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)	1.6	0.8	0.89	0.36
	±0.15	±0.15	Max.	±0.15

■ Recommended solder pad



	a	b	c
Size (mm)	0.75	0.9	0.8
	±0.05	±0.10	±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

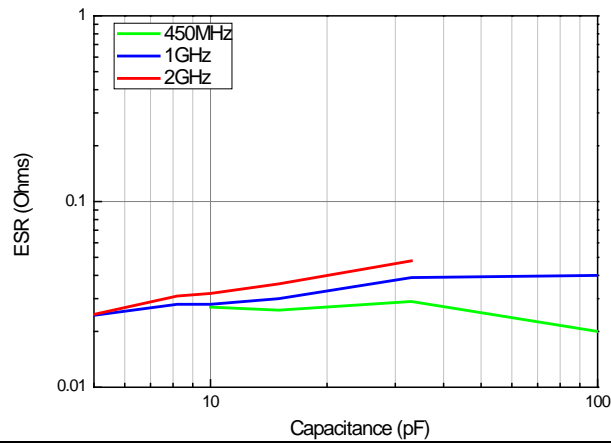
6. Capacitance Values, Markings & Tolerances

Value [pF]	Cap Code	Marking	Tolerance	Value [pF]	Cap Code	Marking	Tolerance	Value [pF]	Cap Code	Marking	Tolerance
0.1	0R1	A9	A,B	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				

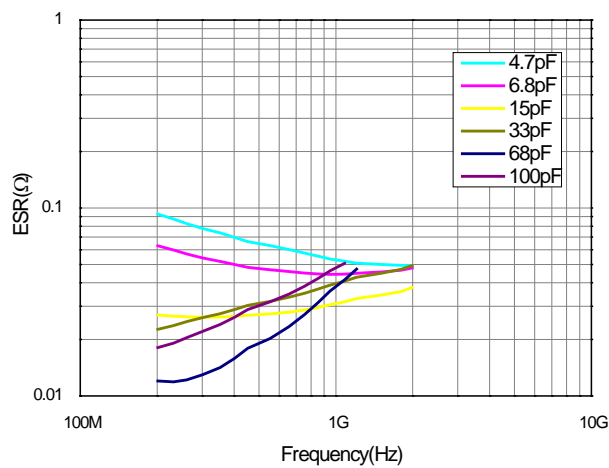
* **Cap tolerance** : "P"-±0.02pF "Q"-±0.03pF "A"-±0.05pF "B"-±0.1pF "C"-±0.25pF "D"-±0.5pF
 "F"-±1% "G"-±2% "J"-±5% "K"-±10% "M"-±20%

7. Series & Parallel Resonance Curves

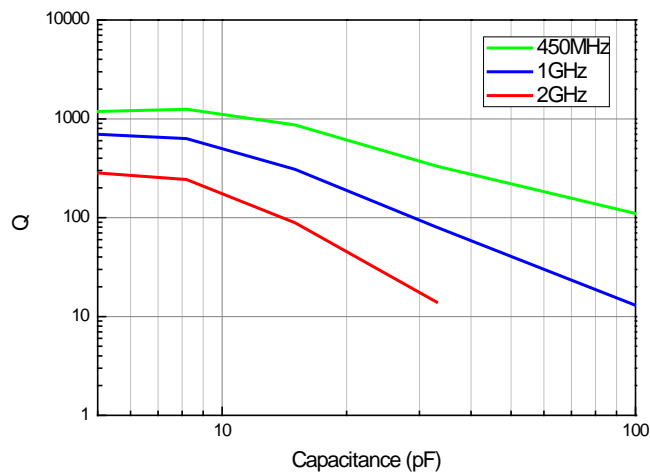
ESR vs Capacitance



ESR vs Frequency

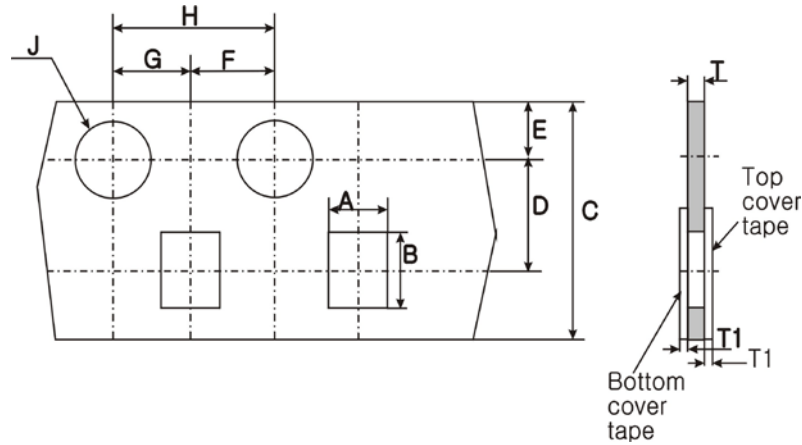


Q vs Capacitance



8. Tape and Reel Specification

■ Size



	A	B	C	D	E	F	G	H	J	T	T1
Spec.	1.00	1.90	8.00	3.50	1.80	2.00	2.00	4.00	1.55	0.95	0.1
Tolerance	±0.05	±0.05	±0.10	±0.05	±0.05	±0.05	±0.05	±0.10	±0.03	±0.05	Max

■ Material

- 1) Paper carrier tape: Laminated virgin pulp
- 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