

	DATASHEET	Part No.
	Ultra-Low ESR, High Q, C0G/NPO Microwave Capacitor	A60L series

CUSTOMER :

DATA SHEET

Product name	: Ultra-Low ESR, High Q, C0G/NPO Microwave Capacitor
Part number	: A60L series
Features	: 1005mm/0402inch, C0G/NP0, DC200V, High Q
Revision date	: 2020/07/07

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1. Features :

- Lowest ESR in Class
- **Highest Working Voltage in class – 200V**
- High Self Resonance Frequencies
- Low Inter-Modulation (IM) performance
- Standard EIA Size : 0402
- 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	Packing info.
<u>A60</u>	<u>L</u>	<u>0R2</u>	<u>B</u>	<u>T</u>	<u>200</u>	<u>T</u>

- **Series Name** : A60
- **Size** : L – 1005 mm, 0402 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
- **Packing info.** : T – Tape and Reel *

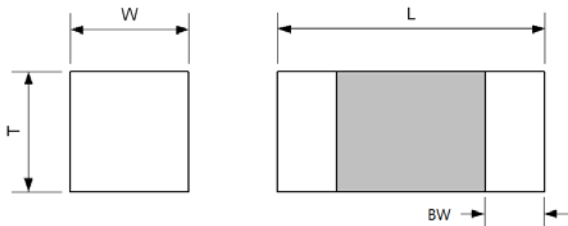
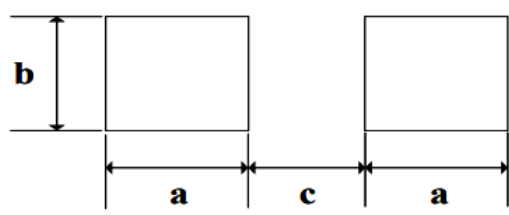
5. Specifications

■ Electrical Specifications

Capacitance	0.1 to 27pF
Tolerances	Refer to <u>6. Capacitance Values, Markings & Tolerances</u>
Working Voltage (WVDC)	200V
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

■ Recommended solder pad

								
	L	W	T	BW		a	b	c
Size (mm)	1.0 ± 0.10	0.5 ± 0.10	0.6 max.	0.25 ± 0.15		0.61	0.51	0.51

■ Mechanical Specifications

Solderability	Solder coverage > 90% of end termination
Terminal Strength	2 lbs. Typ., 1 lbs, min. (0.9kg typ. 0.45kg 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

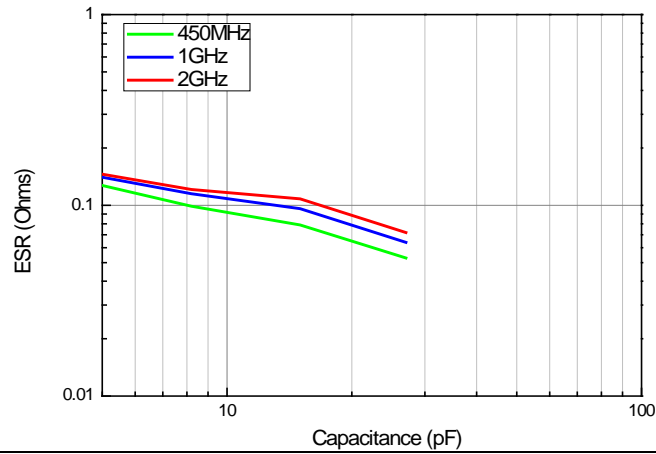
6. Capacitance Values, Markings & Tolerances

Value [pF]	Cap Code	Tolerance	Value [pF]	Cap Code	Tolerance	Value [pF]	Cap Code	Tolerance
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

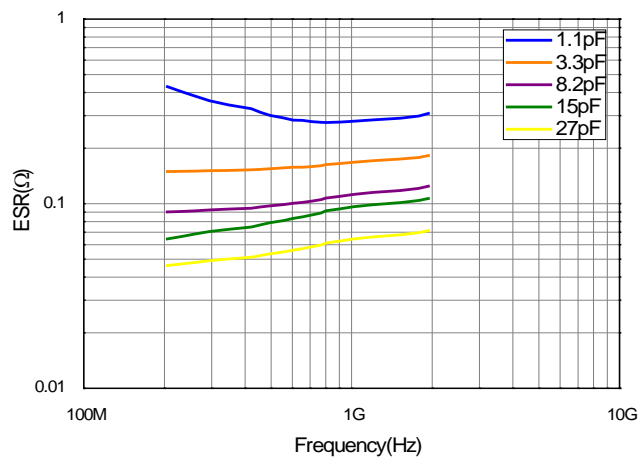
* **Cap tolerance :** "P"-±0.02pF "Q"-±0.03pF "A"-±0.05pF "B"-±0.1pF "C"-±0.25pF "D"-±0.5pF
 "F"-±1% "G"-±2% "J"-±5% "K"-±10% "M"-±20%

7. Series & Parallel Resonance Curves

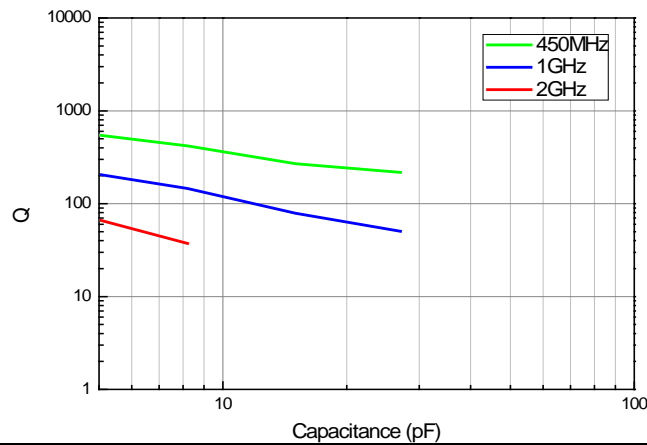
ESR vs Capacitance



ESR vs Frequency

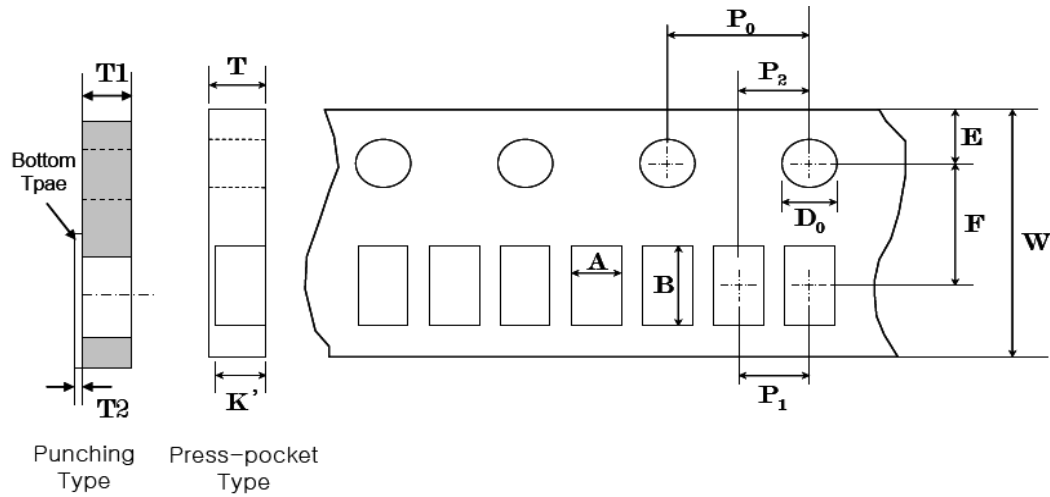


Q vs Capacitance



8. Tape and Reel Specification

■ Size



(Unit :mm)

	A	B	D ₀	E	F	P ₀	P ₁	P ₂	W	K'	T	T ₁	T ₂
Spec.	0.62	1.12	1.55	1.75	3.50	4.00	2.00	2.00	8.0	0.60	0.65	0.60	0.1
Tolerance	± 0.04	± 0.04	± 0.10	± 0.05	± 0.05	± 0.10	± 0.05	± 0.05	± 0.1	± 0.03	± 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