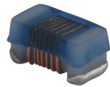


# WCLA1005V1

## Automotive grade wire wound chip inductor



### Product features

- AEC-Q200 qualified
- 0402 (1005 metric) package
- High Q value
- Tight inductance tolerance
- Inductance range from 1.0 nH to 120 nH
- Moisture sensitivity level (MSL): 1

### Applications

- ADAS
- Infotainment
- Wireless communications
- Wifi, bluetooth, satellite
- Antenna tuning
- On board computer
- Industrial connectivity (IoT)

### Environmental data

- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)



**Product specifications**

Part number	OCL Tolerance (%)	OCL (nH)	OCL Test frequency (MHz)	Q minimum	Q Test frequency (MHz)	DCR@ (Ω) @ +25 °C maximum	Test voltage (mV)	SRF (MHz) minimum	I Rated (mA)
WCLA1005V1-1R0-R	±10	1.0	250	13	250	0.045	500	10000	1360
WCLA1005V1-1R2-R	±10	1.2	250	8	250	0.135	500	10000	640
WCLA1005V1-1R8-R	±10	1.8	250	16	250	0.070	500	6000	1040
WCLA1005V1-1R9-R	±10	1.9	250	16	250	0.070	500	6000	1040
WCLA1005V1-2R0-R	±10	2.0	250	18	250	0.070	500	6000	1040
WCLA1005V1-2R2-R	±10	2.2	250	18	250	0.070	500	6000	960
WCLA1005V1-2R4-R	±10	2.4	250	16	250	0.080	500	6000	790
WCLA1005V1-2R5-R	±10	2.5	250	15	250	0.120	500	6000	640
WCLA1005V1-2R7-R	±10	2.7	250	15	250	0.120	500	6000	640
WCLA1005V1-2R9-R	±10	2.9	250	8	250	0.300	500	6000	400
WCLA1005V1-3R3-R	±5	3.3	250	20	250	0.066	500	6000	840
WCLA1005V1-3R6-R	±5	3.6	250	20	250	0.066	500	6000	840
WCLA1005V1-3R9-R	±5	3.9	250	20	250	0.066	500	6000	840
WCLA1005V1-4R3-R	±5	4.3	250	20	250	0.091	500	6000	700
WCLA1005V1-4R7-R	±5	4.7	250	18	250	0.200	500	4500	640
WCLA1005V1-5R1-R	±5	5.1	250	18	250	0.083	500	4800	800
WCLA1005V1-5R6-R	±5	5.6	250	20	250	0.083	500	4800	760
WCLA1005V1-6R2-R	±5	6.2	250	23	250	0.083	500	4800	760
WCLA1005V1-6R8-R	±5	6.8	250	23	250	0.260	500	4800	680
WCLA1005V1-7R5-R	±5	7.5	250	23	250	0.100	500	4800	680
WCLA1005V1-8R2-R	±5	8.2	250	25	250	0.100	500	4400	680
WCLA1005V1-8R7-R	±5	8.7	250	25	250	0.200	500	4100	480
WCLA1005V1-9R0-R	±5	9.0	250	25	250	0.100	500	4160	680
WCLA1005V1-9R5-R	±5	9.5	250	25	250	0.200	500	4000	480
WCLA1005V1-100-R	±5	10	250	25	250	0.20	500	3900	480
WCLA1005V1-110-R	±5	11	250	25	250	0.120	500	3680	640
WCLA1005V1-120-R	±5	12	250	25	250	0.120	500	3600	640
WCLA1005V1-130-R	±5	13	250	25	250	0.210	500	3450	440
WCLA1005V1-150-R	±5	15	250	25	250	0.300	500	3280	560
WCLA1005V1-160-R	±5	16	250	25	250	0.220	500	3100	560
WCLA1005V1-180-R	±5	18	250	25	250	0.230	500	3100	420
WCLA1005V1-190-R	±5	19	250	25	250	0.200	500	3040	480
WCLA1005V1-200-R	±5	20	250	25	250	0.250	500	3000	420
WCLA1005V1-220-R	±5	22	250	25	250	0.300	500	2800	400
WCLA1005V1-230-R	±5	23	250	22	250	0.380	500	2720	310
WCLA1005V1-240-R	±5	24	250	25	250	0.300	500	2700	400
WCLA1005V1-270-R	±5	27	250	25	250	0.520	500	2480	280
WCLA1005V1-300-R	±5	30	250	24	250	0.500	500	2350	400
WCLA1005V1-330-R	±5	33	250	24	250	0.650	500	2350	350

1. Test voltage is for open circuit inductance (OCL) and Q at +25 °C  
2. Rated I: When rated I is applied to the product, self-temperature rise will be 20 °C or less.

3. Part Number Definition: WCLA1005V1-xxx-R  
WCLA1005V1 = Product code and size  
xxx= inductance value in nH, R= decimal point,  
If no R is present then last character equals number of zeros  
-R suffix = RoHS compliant

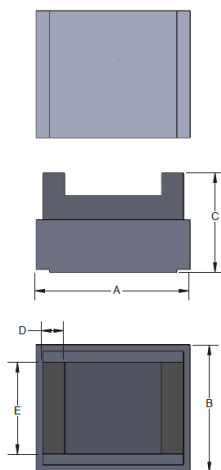
**Product specifications**

Part number	OCL Tolerance (%)	OCL (nH)	OCL Test frequency (MHz)	Q minimum	Q Test frequency (MHz)	DCR@ (+25 °C) maximum	Test voltage (mV)	SRF (MHz) minimum	I Rated (mA)
WCLA1005V1-360-R	±5	36	250	25	250	0.600	500	2320	250
WCLA1005V1-390-R	±5	39	250	25	250	0.750	500	2100	200
WCLA1005V1-400-R	±5	40	250	25	250	0.600	500	2240	220
WCLA1005V1-430-R	±5	43	250	25	250	0.810	500	2030	100
WCLA1005V1-470-R	±5	47	250	25	250	0.830	500	2100	150
WCLA1005V1-510-R	±5	51	250	25	250	0.820	500	1750	100
WCLA1005V1-560-R	±5	56	250	25	250	0.97	500	1760	100
WCLA1005V1-620-R	±5	62	250	25	250	1.120	500	1620	100
WCLA1005V1-680-R	±5	68	250	25	250	1.12	500	1620	100
WCLA1005V1-750-R	±5	75	250	25	250	1.630	500	1400	50
WCLA1005V1-820-R	±5	82	250	25	250	1.70	500	1260	50
WCLA1005V1-101-R	±5	100	250	25	250	2.00	500	1160	30
WCLA1005V1-121-R	±5	120	250	25	250	2.20	500	1100	30

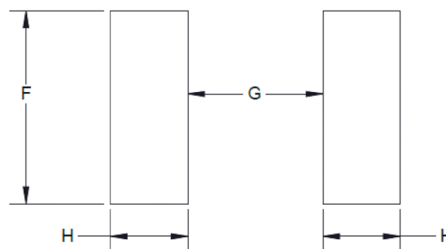
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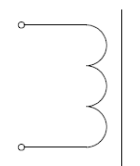
**Dimensions (mm)**



**Recommended pad layout**



**Schematic**



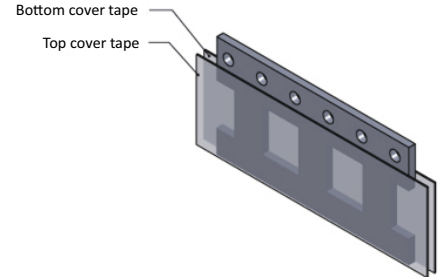
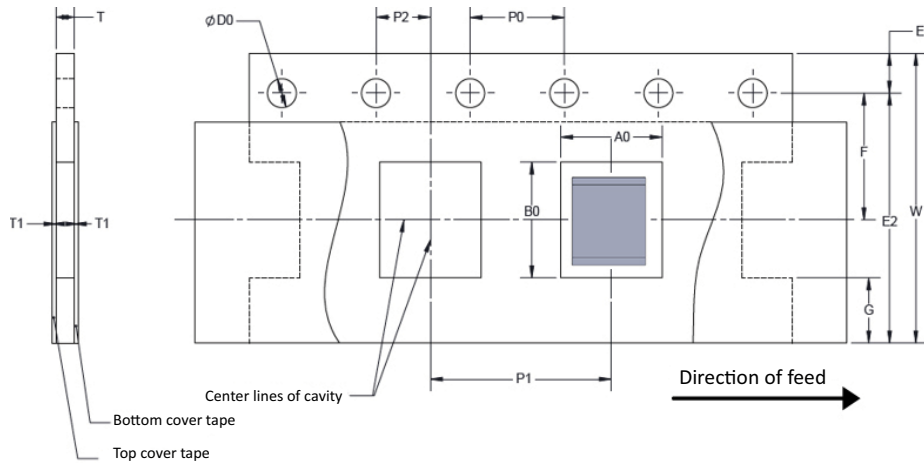
Part Number	A	B	C	D	E	F	G	H
WCLA1005V1-xxx-R	1.19 max	0.66 max	0.60 max	0.23 ref	0.50 ref	0.66 ref	0.46 ref	0.36 ref

Park marking: No marking  
All soldering surfaces to be coplanar within 0.1 millimeters  
Tolerances are ±0.1 millimeters unless stated otherwise  
Pad layout dimensions are reference only  
Traces or vias underneath the inductor is not recommended

**Packaging information (mm)**

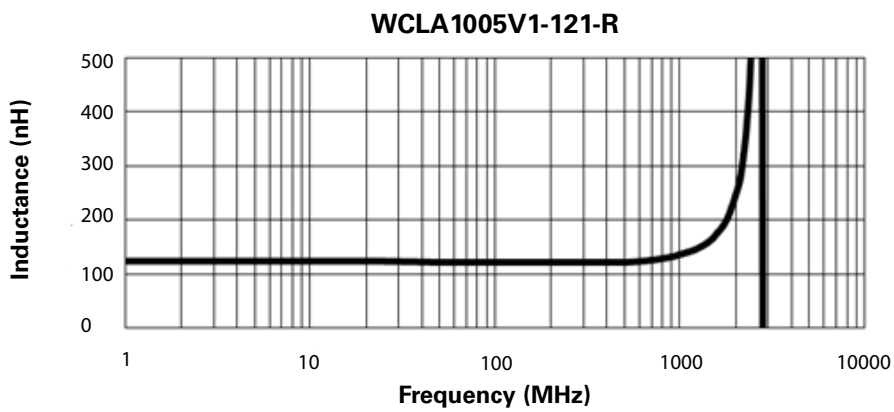
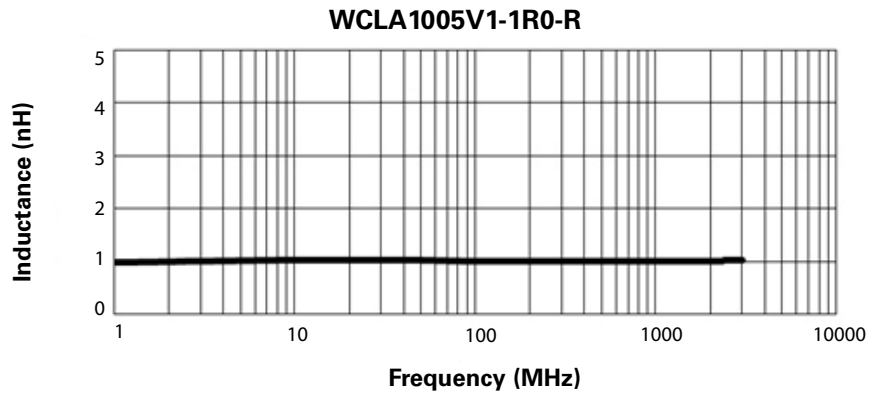
Drawing not to scale

Supplied in tape and reel packaging, 5000 parts per 7" diameter reel

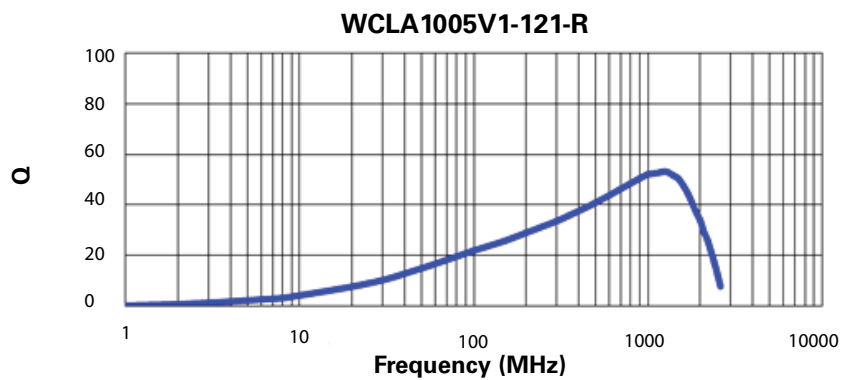
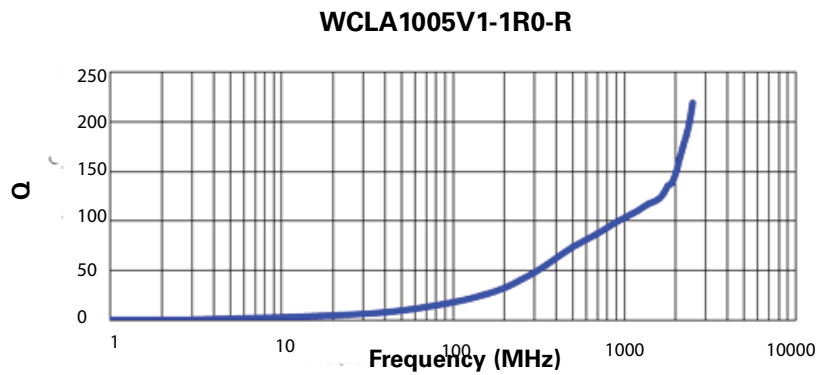


$W \pm 0.3$	8.00
$F \pm 0.05$	3.50
$E1 \pm 0.1$	1.75
$E2$ Min	na
$P0 \pm 0.1$	4.00
$P1 \pm 0.05$	2.00
$P2 \pm 0.05$	2.00
$D0 + 0.1 - 0.0$	1.55
$A0$	0.74
$B0$	1.23
$T$	0.68
$T1$	na

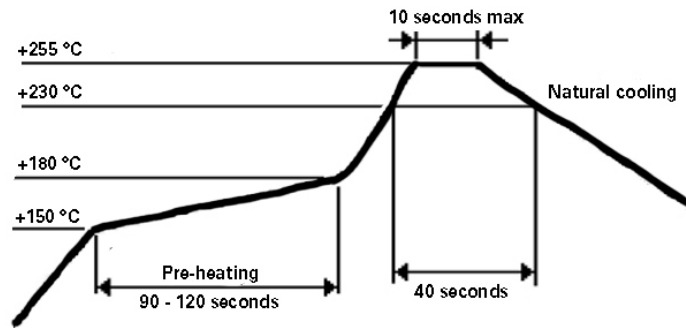
Inductance vs frequency



Q vs frequency



**Solder reflow profile**



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