

MCLA1005V2

Automotive multilayer chip inductor



Product features

- AEC-Q200 qualified
- 0402 (1005 metric) package
- Multilayer monolithic construction yields high reliability
- Inductance range from 1.0 nH to 330 nH
- Moisture sensitivity level (MSL): 1

Applications

- ADAS
- Infotainment
- Wireless communications
- Wifi, bluetooth, satellite
- Antennas tuning
- On board computer

Environmental data

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



Product specifications

Part number	OCL Tolerance	OCL (nH)	Q minimum	DCR@ (Ω) @ +25 °C maximum	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) minimum	I Rated (mA)
MCLA1005V2-1R0-R	±0.3nH	1.0	8	0.1	100	50	10000	400
MCLA1005V2-1R1-R	±0.3nH	1.1	8	0.1	100	50	10000	400
MCLA1005V2-1R2-R	±0.3nH	1.2	8	0.1	100	50	10000	400
MCLA1005V2-1R3-R	±0.3nH	1.3	8	0.1	100	50	10000	400
MCLA1005V2-1R5-R	±0.3nH	1.5	8	0.1	100	50	6000	300
MCLA1005V2-1R6-R	±0.3nH	1.6	8	0.12	100	50	6000	300
MCLA1005V2-1R8-R	±0.3nH	1.8	8	0.12	100	50	6000	300
MCLA1005V2-2R0-R	±0.3nH	2.0	8	0.15	100	50	6000	300
MCLA1005V2-2R2-R	±0.3nH	2.2	8	0.15	100	50	6000	300
MCLA1005V2-2R4-R	±0.3nH	2.4	8	0.15	100	50	6000	300
MCLA1005V2-2R7-R	±0.3nH	2.7	8	0.15	100	50	6000	300
MCLA1005V2-3R0-R	±0.3nH	3.0	8	0.2	100	50	6000	300
MCLA1005V2-3R3-R	±0.3nH	3.3	8	0.2	100	50	6000	300
MCLA1005V2-3R6-R	±0.3nH	3.6	8	0.2	100	50	4000	300
MCLA1005V2-3R9-R	±0.3nH	3.9	8	0.2	100	50	4000	300
MCLA1005V2-4R3-R	±0.3nH	4.3	8	0.2	100	50	4000	300
MCLA1005V2-4R7-R	±0.3nH	4.7	8	0.25	100	50	4000	300
MCLA1005V2-5R1-R	±0.3nH	5.1	8	0.25	100	50	4000	300
MCLA1005V2-5R6-R	±0.3nH	5.6	8	0.25	100	50	4000	300
MCLA1005V2-6R2-R	±0.3nH	6.2	8	0.3	100	50	3900	300
MCLA1005V2-6R8-R	±5%	6.8	8	0.3	100	50	3900	300
MCLA1005V2-7R5-R	±5%	7.5	8	0.4	100	50	3700	300
MCLA1005V2-8R2-R	±5%	8.2	8	0.4	100	50	3600	300
MCLA1005V2-9R1-R	±5%	9.1	8	0.4	100	50	3400	300
MCLA1005V2-100-R	±5%	10	8	0.4	100	50	3200	300
MCLA1005V2-120-R	±5%	12	8	0.5	100	50	2700	300
MCLA1005V2-150-R	±5%	15	8	0.5	100	50	2300	300
MCLA1005V2-180-R	±5%	18	8	0.6	100	50	2100	300
MCLA1005V2-200-R	±5%	20	8	0.6	100	50	2000	300
MCLA1005V2-220-R	±5%	22	8	0.6	100	50	1900	300
MCLA1005V2-270-R	±5%	27	8	0.7	100	50	1600	300
MCLA1005V2-330-R	±5%	33	8	0.8	100	50	1300	200
MCLA1005V2-390-R	±5%	39	8	1	100	50	1200	200
MCLA1005V2-430-R	±5%	43	8	1.1	100	50	1100	200
MCLA1005V2-470-R	±5%	47	8	1.1	100	50	1000	200
MCLA1005V2-560-R	±5%	56	8	1.2	100	50	750	200
MCLA1005V2-680-R	±5%	68	8	1.4	100	50	750	180
MCLA1005V2-820-R	±5%	82	8	2.4	100	50	750	150
MCLA1005V2-101-R	±5%	100	8	2.6	100	50	700	150
MCLA1005V2-121-R	±5%	120	8	2.8	100	50	600	150

1. Test frequency and 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.

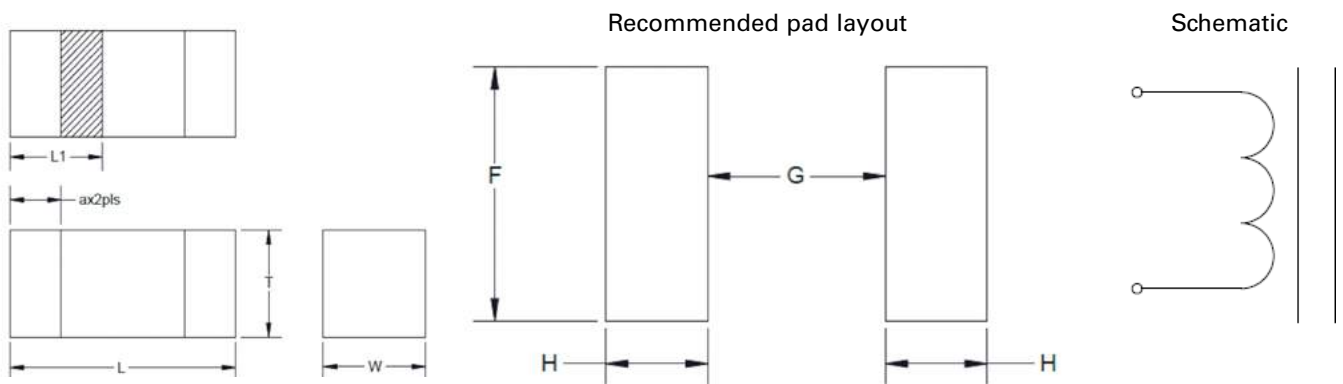
3. Part Number Definition: MCLA1005V2-xxx-R
MCLA1005V2 = Product code and size
xxx= inductance value in nH, R= decimal point,
If no R is present then last character equals number of zeros
-R suffix = RoHS compliant

Part number	OCL Tolerance	OCL (nH)	Q minimum	DCR@ (+25 °C) maximum	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) minimum	I Rated (mA)
MCLA1005V2-151-R	±5%	150	8	3.2	100	50	550	100
MCLA1005V2-181-R	±5%	180	8	3.7	100	50	500	100
MCLA1005V2-221-R	±5%	220	8	4.0	100	50	450	100
MCLA1005V2-271-R	±5%	270	8	4.5	100	50	400	100
MCLA1005V2-331-R	±5%	330	6	7.0	50	50	350	50

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Mechanical parameters, schematic, pad layout (mm)



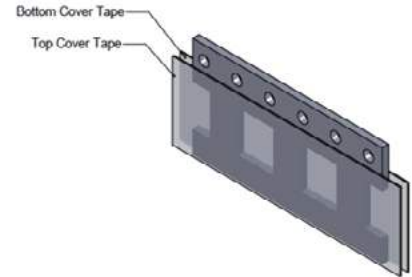
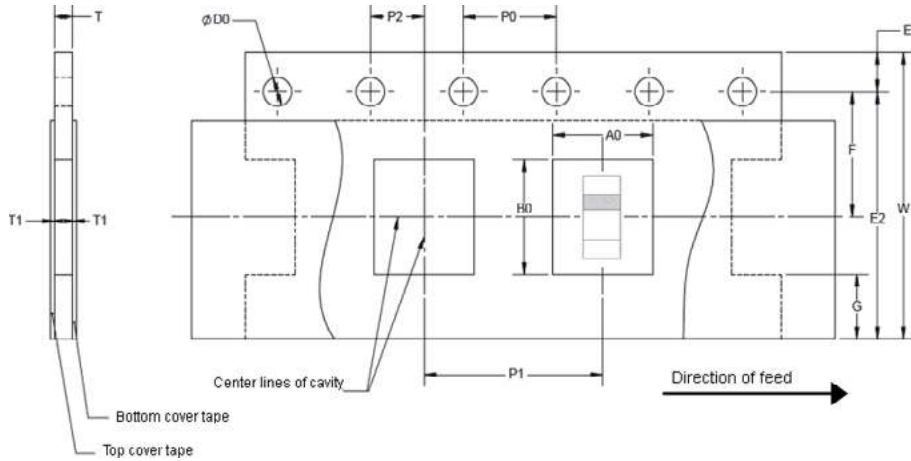
Part Number	L	W	T	A	L1	F	G	H
MCLA1005V2-xxx-R	1.00±0.15	0.50±0.15	0.50±0.15	0.25±0.10	0.50±0.15	0.85 ref	0.15 ref	0.75 ref

Part marking: No marking
All soldering surfaces to be coplanar within 0.1 millimeters
Tolerances are ±0.1 millimeters unless stated otherwise
Dimension L1 is for orientation
Pad layout dimensions are reference only
Traces or vias underneath the inductor is not recommended

Packaging information (mm)

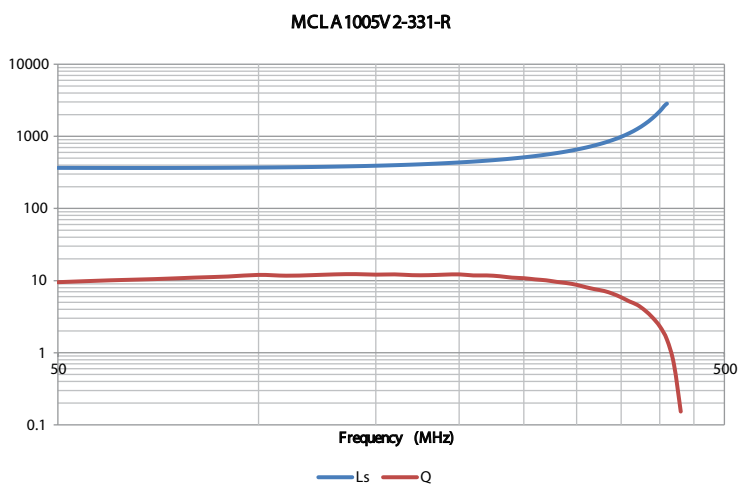
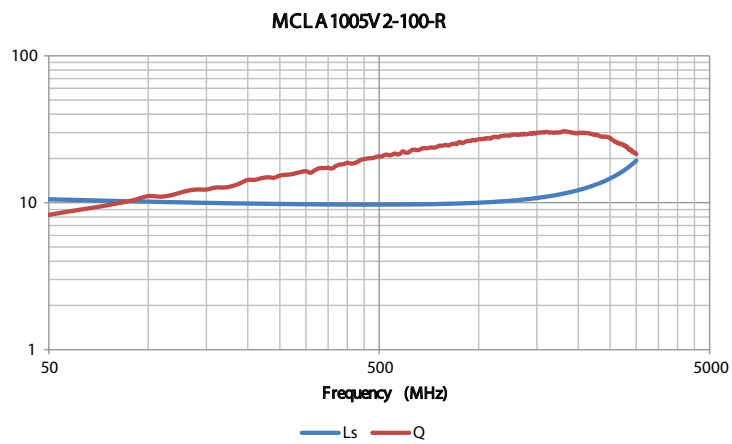
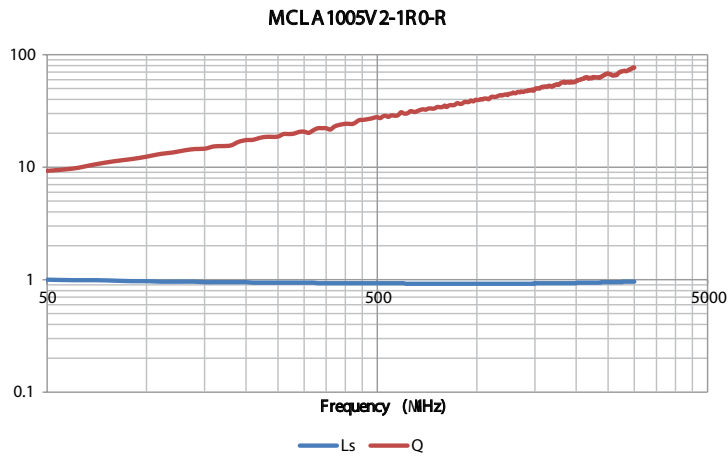
Drawing not to scale

Supplied in tape and reel packaging, 10000 parts per 7" diameter reel

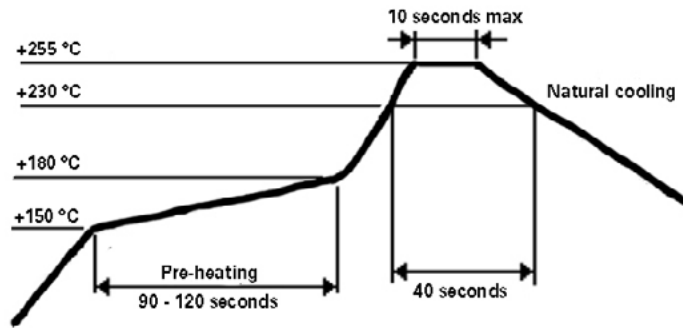


$W \pm 0.2$	8.00
$F \pm 0.1$	3.50
$E1 \pm 0.2$	1.75
E2 Min	na
$P0 \pm 0.2$	4.00
$P1 \pm 0.1$	2.00
$P2 \pm 0.1$	2.00
$D0 \pm 0.1$	1.55
A0	0.65 ± 0.1
B0	1.15 ± 0.1
T	0.6 ± 0.1
T1 Max	na

Inductance and Q vs frequency



Solder reflow profile



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