

MCLA2012V1

Automotive multilayer chip inductor



Product features

- AEC-Q200 qualified
- 0805 (2012 metric) package
- Multilayer monolithic construction yields high reliability
- Inductance range from 0.047 μ H to 12 μ H
- Moisture sensitivity level (MSL): 1

Applications

- ADAS
- Infotainment
- Wireless communications
- Wifi, bluetooth, satellite
- Antenna 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 (μH)	Q minimum	DCR@ (Ω) @ +25 °C maximum	Test frequency (MHz)	Test voltage (mV)	SRF (MHz) minimum	I Rated (mA)
MCLA2012V1-R047-R	±10	0.047	25	0.15	50	50	320	300
MCLA2012V1-R056-R	±10	0.056	25	0.15	50	50	320	300
MCLA2012V1-R068-R	±10	0.068	25	0.2	50	50	280	300
MCLA2012V1-R082-R	±10	0.082	25	0.2	50	50	280	300
MCLA2012V1-R100-R	±10	0.1	20	0.2	25	50	235	250
MCLA2012V1-R120-R	±10	0.12	20	0.25	25	50	220	250
MCLA2012V1-R150-R	±10	0.15	20	0.25	25	50	200	250
MCLA2012V1-R180-R	±10	0.18	20	0.3	25	50	185	250
MCLA2012V1-R220-R	±10	0.22	20	0.3	25	50	170	250
MCLA2012V1-R270-R	±10	0.27	20	0.4	25	50	150	250
MCLA2012V1-R330-R	±10	0.33	20	0.4	25	50	145	250
MCLA2012V1-R390-R	±10	0.39	25	0.5	25	50	135	200
MCLA2012V1-R470-R	±10	0.47	25	0.5	25	50	125	200
MCLA2012V1-R560-R	±10	0.56	25	0.6	25	50	115	150
MCLA2012V1-R680-R	±10	0.68	25	0.65	25	50	105	150
MCLA2012V1-R820-R	±10	0.82	25	0.7	25	50	100	150
MCLA2012V1-1R0-R	±10	1.0	35	0.4	10	50	75	50
MCLA2012V1-1R2-R	±10	1.2	35	0.4	10	50	65	50
MCLA2012V1-1R5-R	±10	1.5	35	0.4	10	50	60	50
MCLA2012V1-1R8-R	±10	1.8	35	0.4	10	50	55	50
MCLA2012V1-2R2-R	±10	2.2	35	0.6	10	50	50	50
MCLA2012V1-2R7-R	±10	2.7	35	0.6	10	50	45	50
MCLA2012V1-3R3-R	±10	3.3	35	0.6	10	50	41	50
MCLA2012V1-3R9-R	±10	3.9	35	0.8	10	50	38	50
MCLA2012V1-4R7-R	±10	4.7	35	0.9	10	50	35	30
MCLA2012V1-5R6-R	±10	5.6	30	1.0	4	50	32	15
MCLA2012V1-6R8-R	±10	6.8	30	1.05	4	50	29	15
MCLA2012V1-8R2-R	±10	8.2	30	1.05	4	50	26	15
MCLA2012V1-100-R	±10	10	30	1.15	2	50	24	15
MCLA2012V1-120-R	±10	12	30	1.15	2	50	22	15

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 40 °C or less.

3. Part Number Definition: MCLA2012V1-xxx-R

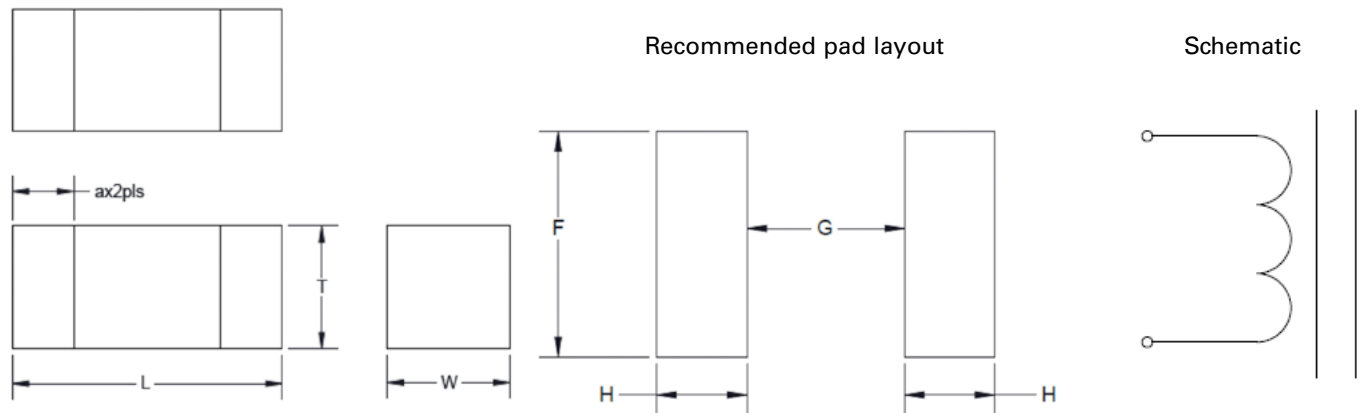
MCLA2012V1 = Product code and size

xxx= inductance value in μH, R= decimal point,

If no R is present then last character equals number of zeros

-R suffix = RoHS compliant

Mechanical parameters, schematic, pad layout (mm)

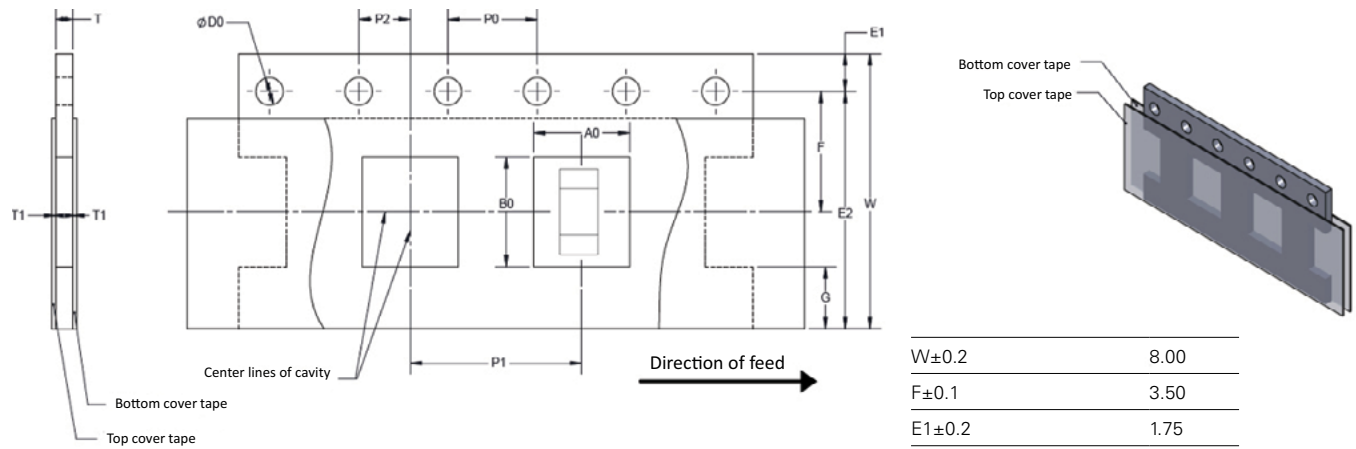


Part Number	L	W	T	a	F	G	H
MCLA2012V1-xxx-R	2.00±0.20	1.20±0.20	0.90±0.20	0.50±0.30	1.60 ref	0.20 ref	1.20 ref

Part 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

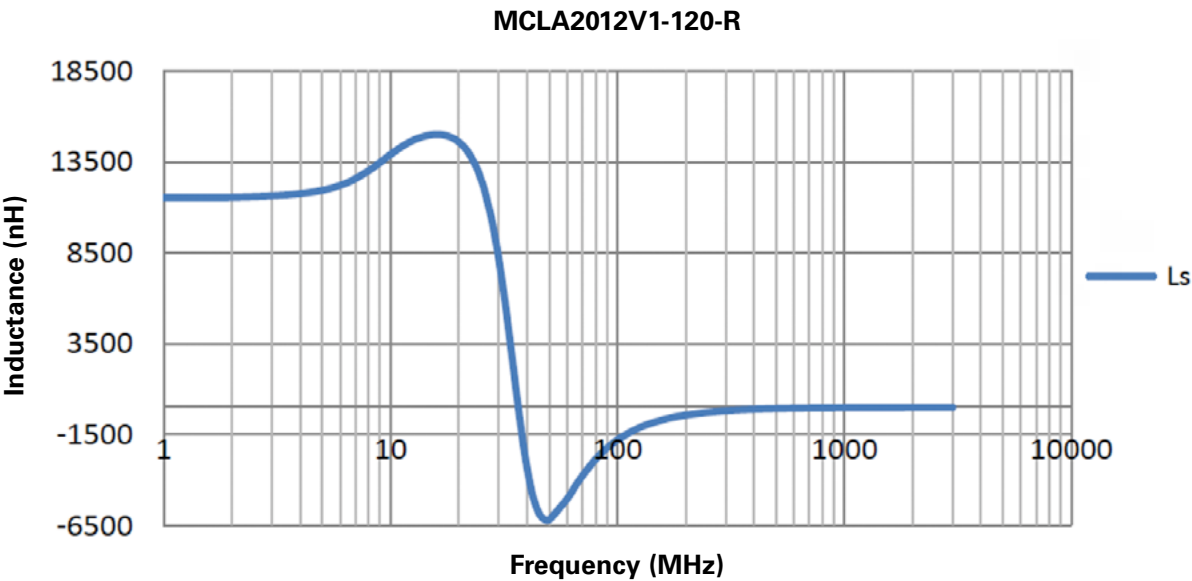
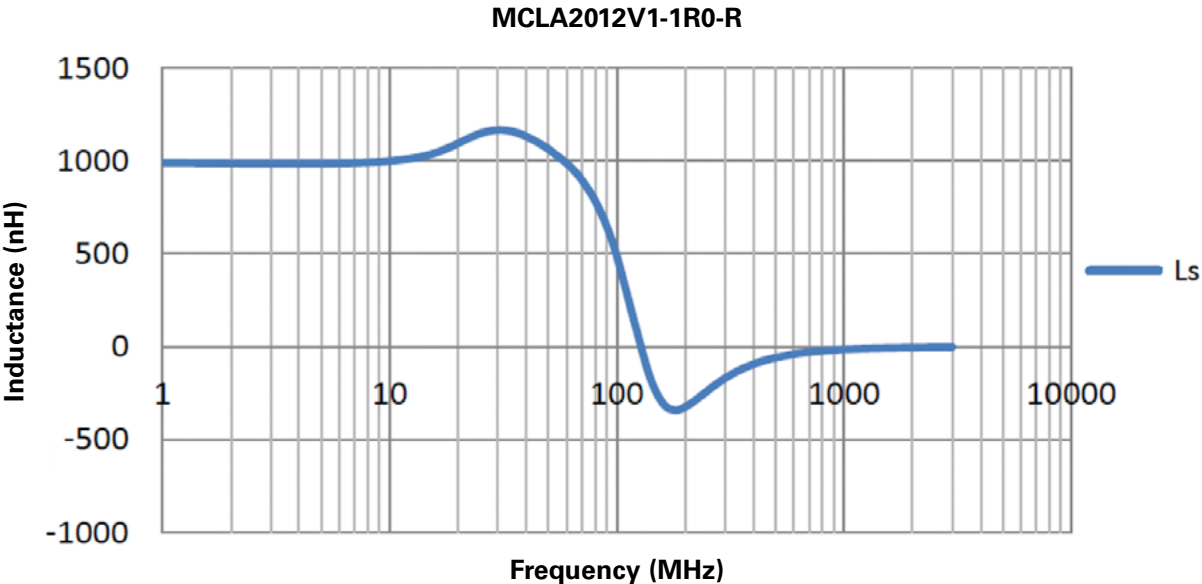
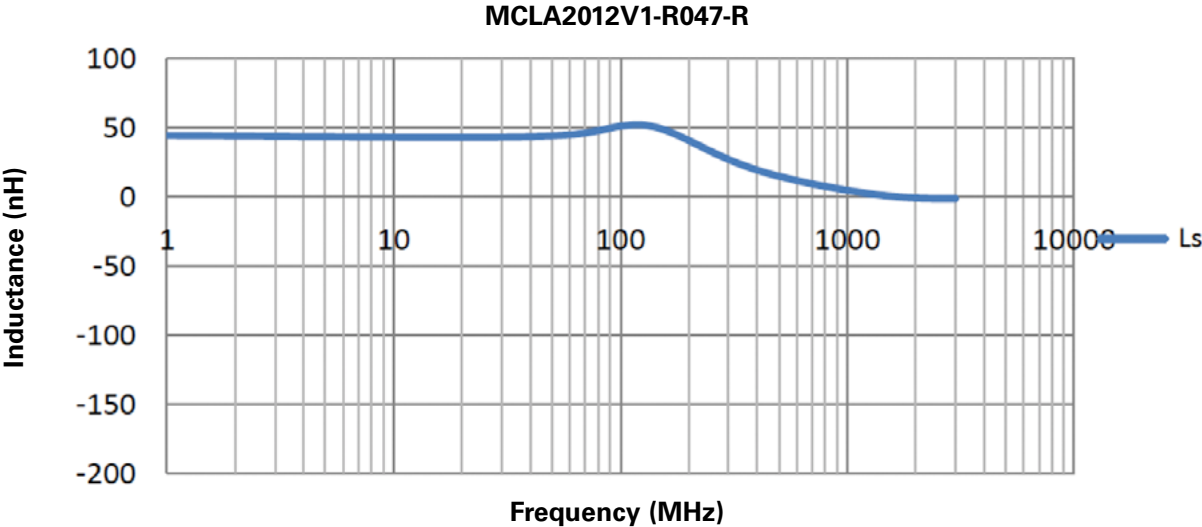
Packaging information (mm)

Drawing not to scale
Supplied in tape and reel packaging, 4000 parts per 7" diameter reel

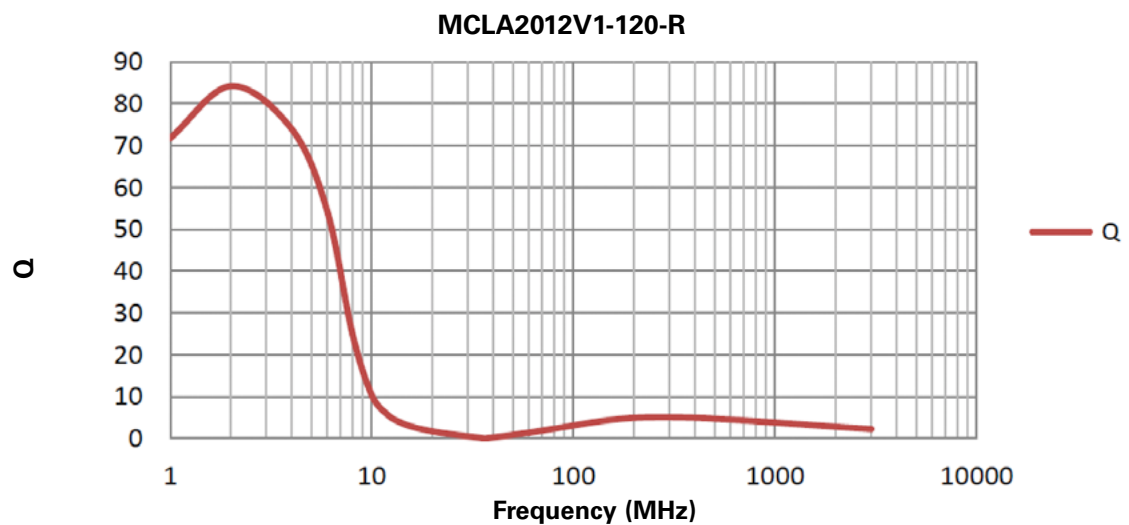
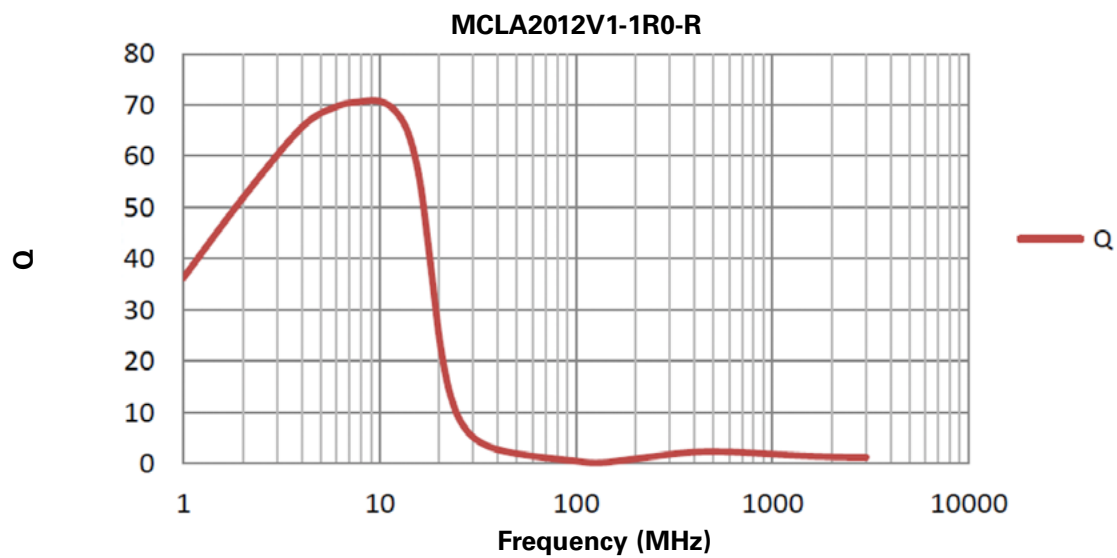
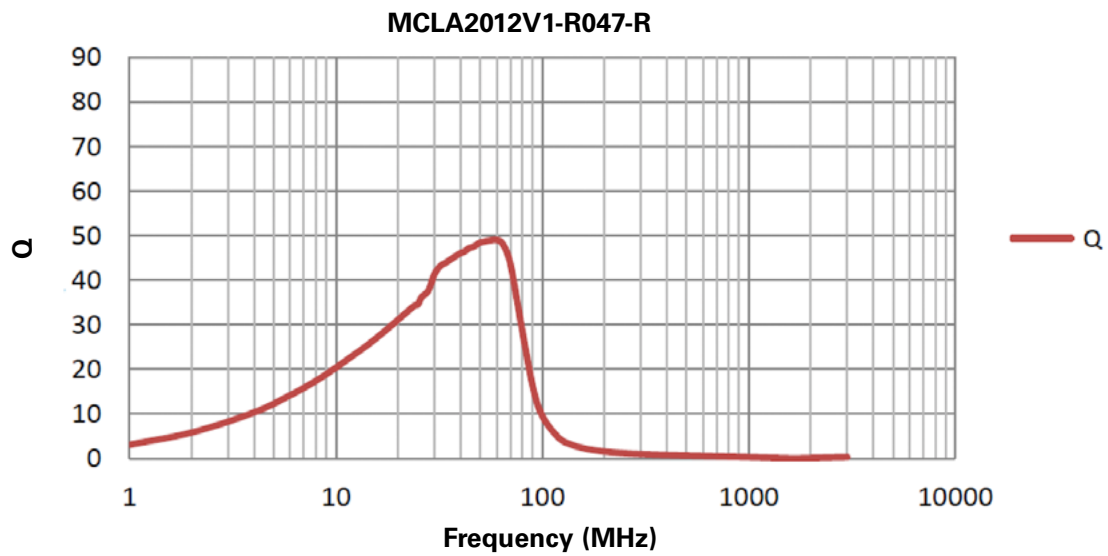


W±0.2	8.00
F±0.1	3.50
E1±0.2	1.75
E2 Min	na
P0±0.2	4.00
P1±0.2	4.00
P2±0.1	2.00
D0±0.1	1.55
A0	1.5±0.2
B0	2.3±0.2
T	0.95±0.1
T1 Max	na

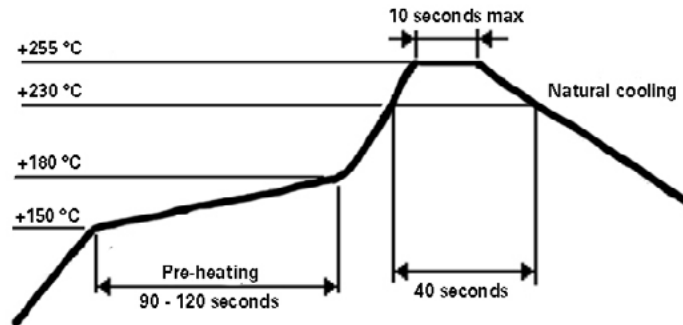
Inductance vs frequency



Q vs frequency



Solder reflow profile



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<u>MCLA2012V1-R047-R</u>	<u>MCLA2012V1-R270-R</u>	<u>MCLA2012V1-100-R</u>	<u>MCLA2012V1-1R0-R</u>	<u>MCLA2012V1-R100-R</u>
<u>MCLA2012V1-R120-R</u>	<u>MCLA2012V1-120-R</u>	<u>MCLA2012V1-R150-R</u>	<u>MCLA2012V1-1R5-R</u>	<u>MCLA2012V1-2R2-R</u>
<u>MCLA2012V1-8R2-R</u>	<u>MCLA2012V1-R220-R</u>	<u>MCLA2012V1-6R8-R</u>	<u>MCLA2012V1-R470-R</u>	<u>MCLA2012V1-R560-R</u>
<u>MCLA2012V1-R680-R</u>	<u>MCLA2012V1-1R2-R</u>	<u>MCLA2012V1-R082-R</u>	<u>MCLA2012V1-R820-R</u>	<u>MCLA2012V1-3R3-R</u>
<u>MCLA2012V1-R330-R</u>	<u>MCLA2012V1-5R6-R</u>	<u>MCLA2012V1-R390-R</u>	<u>MCLA2012V1-3R9-R</u>	<u>MCLA2012V1-4R7-R</u>