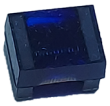
WCLA3225V1

Automotive grade wire wound chip inductor



Product features

- AEC-Q200 qualified
- 1210 (3225 metric) package
- Ferrite core wire wound construction
- Inductance range from 0.47 µH to 680 µH
- Moisture sensitivity level (MSL): 1

Applications

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

Environmental data

- Operating temperature range: -55 °C to +125 °C (ambient plus self-temperature rise)

Powering Business Worldwide

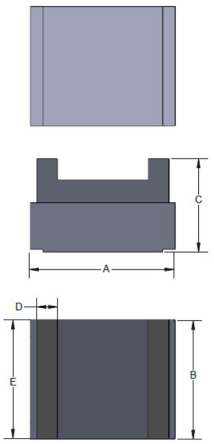
Product specifications

Part number[2]	OCL Tolerance (%)	OCL (µH)	OCL Test frequency (MHz)	Q minimum	Q Test frequency (MHz)	DCR (Ω) @ +25 °C maximum	Test voltage[1] (mV)	SRF (MHz) minimum	I Rated (mA)
WCLA3225V1-R47-R	±10%	0.47	25.2	30	25.2	0.5	500	350	800
WCLA3225V1-1R0-R	±10%	1	7.96	10	7.96	0.12	500	290	1200
WCLA3225V1-1R5-R	±10%	1.5	7.96	10	7.96	0.13	500	260	1000
WCLA3225V1-2R2-R	±10%	2.2	7.96	10	7.96	0.17	500	190	880
WCLA3225V1-3R3-R	±10%	3.3	7.96	10	7.96	0.22	500	64	775
WCLA3225V1-4R7-R	±10%	4.7	7.96	10	7.96	0.26	500	54	710
WCLA3225V1-6R8-R	±10%	6.8	7.96	10	7.96	0.3	500	34	660
WCLA3225V1-100-R	±10%	10	2.52	10	2.52	0.39	500	25	570
WCLA3225V1-150-R	±10%	15	2.52	10	2.52	0.66	500	17	440
WCLA3225V1-220-R	±10%	22	2.52	10	2.52	0.82	500	16	400
WCLA3225V1-330-R	±10%	33	2.52	10	2.52	1.5	500	12	285
WCLA3225V1-390-R	±10%	39	2.52	10	2.52	1.66	500	12	270
WCLA3225V1-470-R	±10%	47	2.52	10	2.52	1.9	500	10	260
WCLA3225V1-680-R	±10%	68	2.52	10	2.52	2.29	500	9	235
WCLA3225V1-101-R	±10%	100	1	10	1	3.48	500	7	190
WCLA3225V1-151-R	±10%	150	1	10	1	6.55	500	5	140
WCLA3225V1-221-R	±10%	220	1	10	1	8.23	500	4	115
WCLA3225V1-331-R	±10%	330	1	10	1	13.7	500	2.8	98
WCLA3225V1-471-R	±10%	470	1	10	1	18.1	500	2.6	86
WCLA3225V1-681-R	±10%	680	1	10	1	22	500	2.3	76

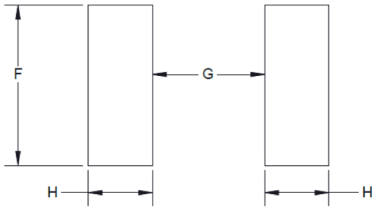
1. Test voltage is for open circuit inductance (OCL) and Q at +25 °C

2. Part Number Definition: WCLA3225V1-xxx-R
WCLA3225V1 = 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

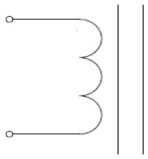
Dimensions (mm)



Recommended pad layout



Schematic



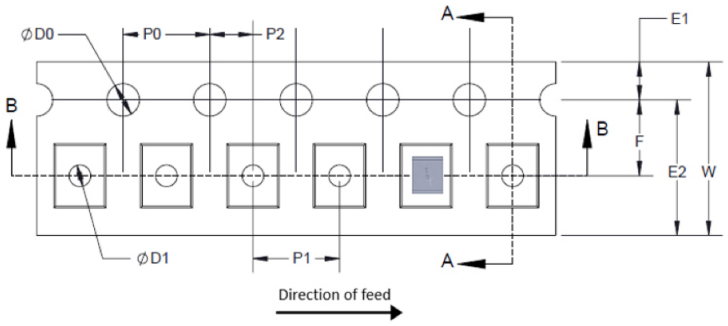
Part Number	A	B	C	D	E	F	G	H
WCLA3225V1-xxx-R	3.60 max	2.80 max	2.40 max	0.65±0.10	2.80 max	2.80 ref	1.78 ref	1.02 ref

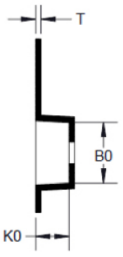
Part marking: No marking
All soldering surfaces to be coplanar within 0.1 millimeters
Tolerances are ±0.1 millimeters unless stated otherwise
Pad layout dimensions are reference only
Traces or vias underneath the inductor is not recommended

Packaging information (mm)

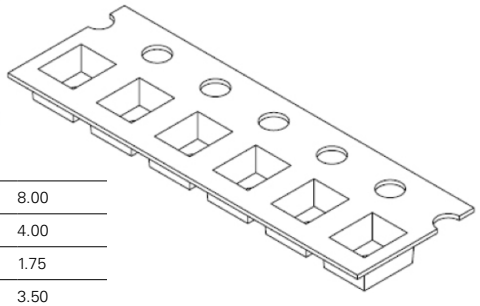
Drawing not to scale

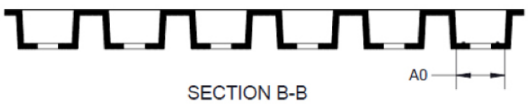
Supplied in tape and reel packaging, 2000 parts per 7" diameter reel (EIA-481 compliant)





SECTION A-A

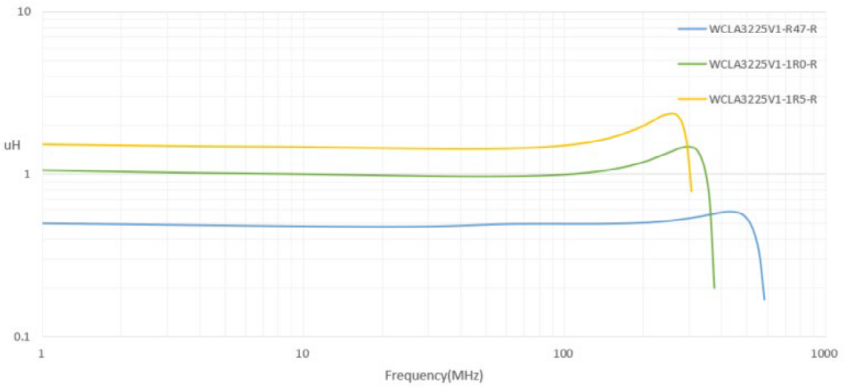


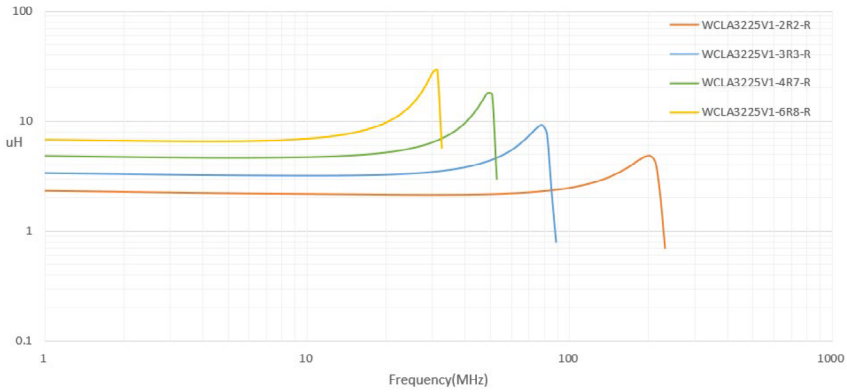


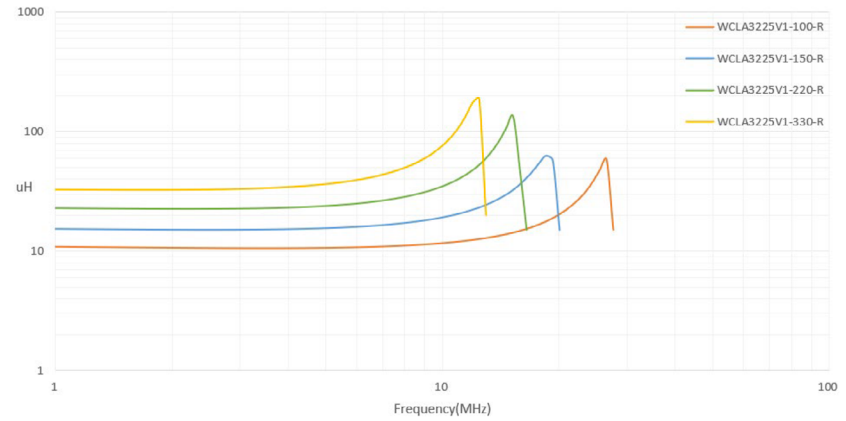
SECTION B-B

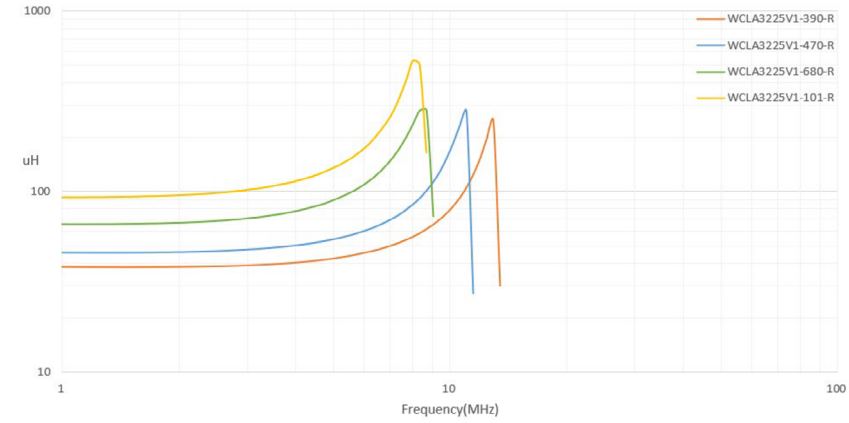
W±0.1	8.00
P1±0.1	4.00
E1±0.1	1.75
F±0.05	3.50
P2±0.05	2.00
D0+0.10/-0	1.50
D1±0.10	1.00
B0±0.10	3.72
A0±0.10	2.88
K0±0.10	2.50
P0±0.10	4.00
T±0.05	0.26

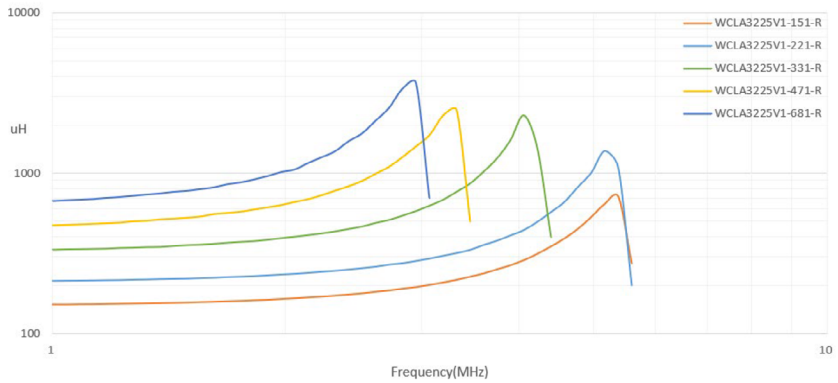
Inductance vs frequency



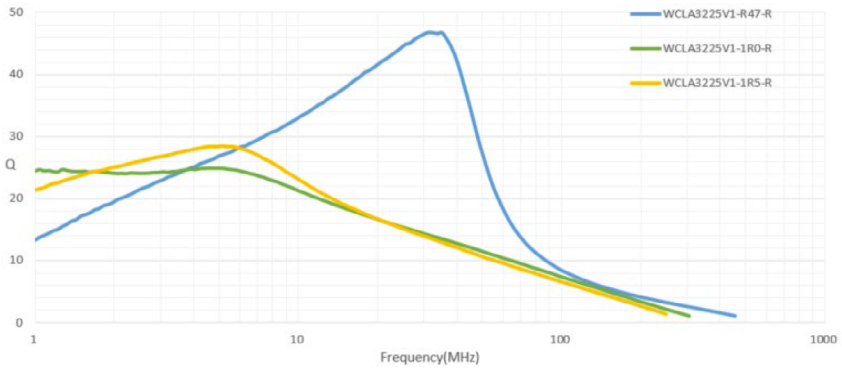


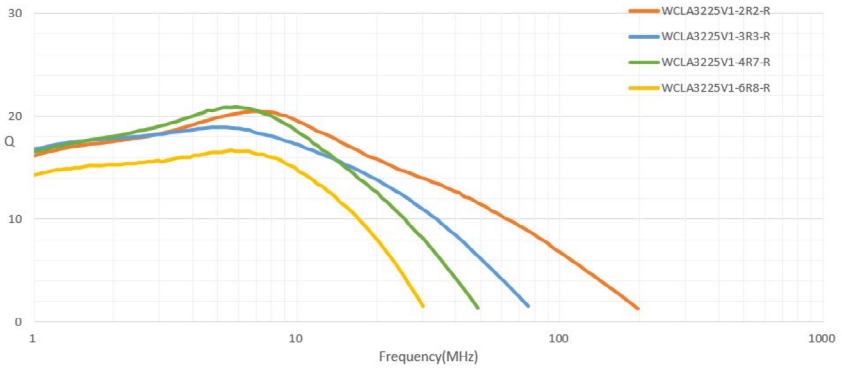


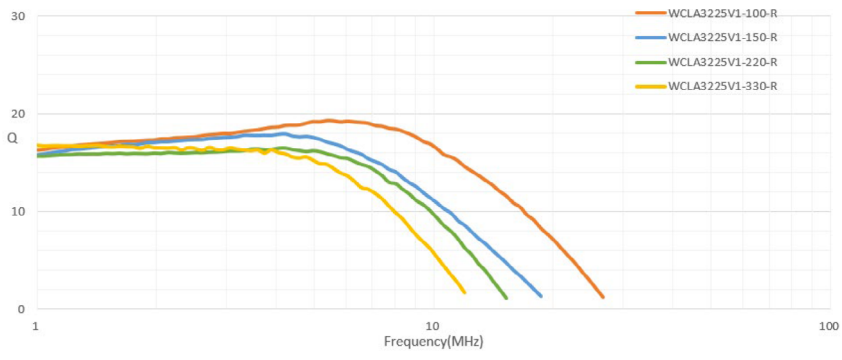


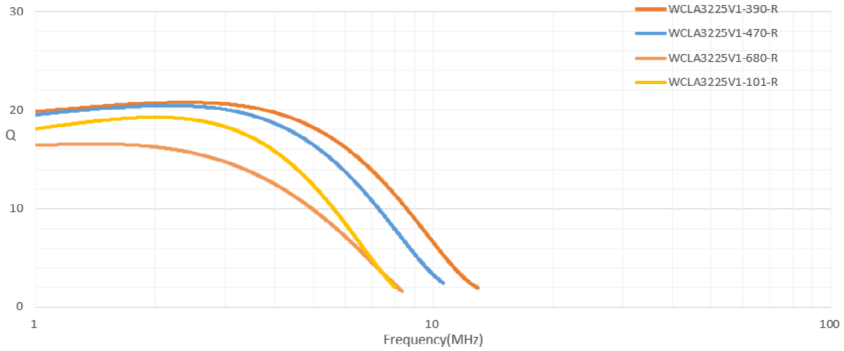


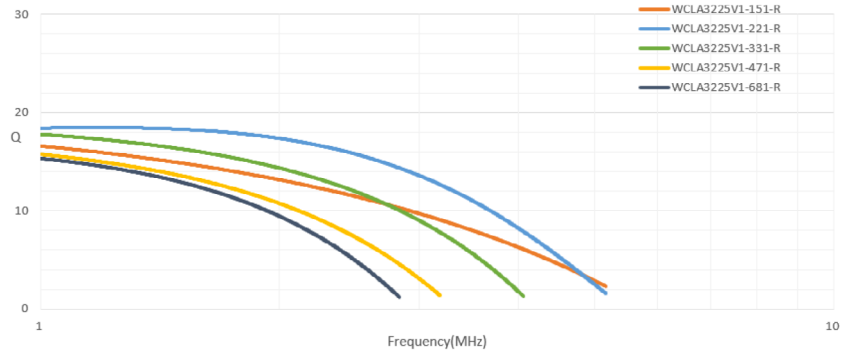
Q vs frequency








WCLA3225V1-390-R
WCLA3225V1-470-R
WCLA3225V1-680-R
WCLA3225V1-101-R
30
20
Q
10
0
1
10
100
Frequency(MHz)


WCLA3225V1-151-R
WCLA3225V1-221-R
WCLA3225V1-331-R
WCLA3225V1-471-R
WCLA3225V1-681-R
30
20
Q
10
0
1
10
Frequency(MHz)

Solder reflow profile

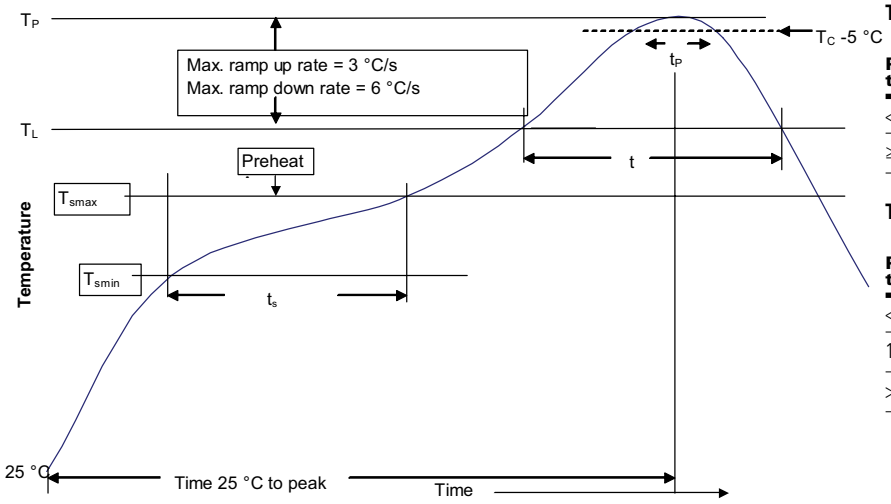


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T_C)

Package thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Profile feature		Standard SnPb solder	Lead (Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	100 °C	150 °C
	• Temperature max. (T_{smax})	150 °C	200 °C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-120 seconds
Ramp up rate T_L to T_p		3 °C/ second max.	3 °C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L		183 °C 60-150 seconds	217 °C 60-150 seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)* within 5 °C of the specified classification temperature (T_C)		20 seconds*	30 seconds*
Ramp-down rate (T_p to T_L)		6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature		6 minutes max.	8 minutes max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Manual solder

Use a 20 watt soldering iron with tip diameter of 1.0 mm maximum. +350 °C, 4-5 seconds maximum, generally manual, hand soldering is not recommended..

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Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

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Printed in USA
Publication No. ELX1153 BU-ELX22012
March 2022

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