CLCC2V3216

Common mode inductor / auto transformer

Product features

- Use as auto transformer
- Capacitive chip LAN
- 1206 (3216 metric) compact package
- Weight 0.044 grams typical
- Moisture sensitivity level (MSL): 1
- Use with CLCC1V2012 common-mode inductor for capacitive chip LAN applications

Applications

- 1 G, 2.5 G BASE-T applications
- RJ45 network interface card
- Ethernet switch, router, ADSL
- VDSL digital equipment
- Network set-top box
- Smart TV
- Network camera
- PC motherboard
- Industrial motherboard

Environmental compliance and general specifications

- Operating temperature range: -40 °C to +85 °C (ambient plus self-temperature rise)
- Storage temperature range: -40 °C to +85 °C (component)

Pb HALOGEN HF FREE RoHS

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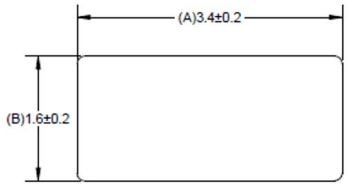
Product specifications

Part number	Inductance[1] (µH) minimum	Capacitance[2] (pF) maximum	DCR[3] (Ω) @ +25 °C maximum	Rated current[4] (mA) maximum	Rated voltage[4] (Vdc) maximum	Withstand voltage[5] (Vdc) maximum	Insulation resistance[5] (MΩ minimum)
CLCC2V3216-600-R	60	25	1.7	200	50	125	10

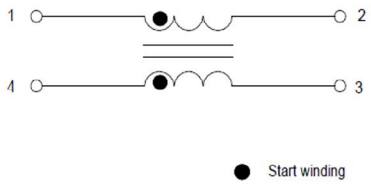
1. Inductance: pins (1-2), (4-3), test frequency parameters: 100 kHz, 0.1 V @ +25 °C
2. Capacitance: pins (1,2) to (4,3), test frequency parameters: 100 kHz, 0.1 V @ +25 °C
3. DCR: pins (1-2), (4-3), @ +25 °C
4. Rated current and rated voltage: pins (1-4) short (2-3), based on a temperature rise of approximately 15 °C
5. Withstand voltage: (1 mA, 1 s), Insulation resistance: (50 V, 1 s): pins (1,2) - (4,3)

Mechanical parameters, schematic, pad layout (mm)

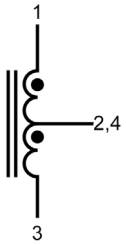
Top view



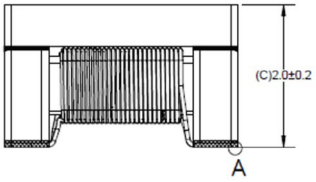
Schematic
Common-mode



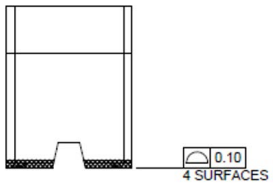
Schematic
Auto transformer



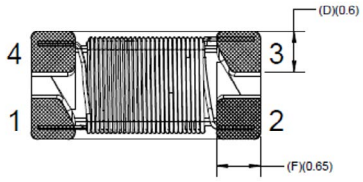
Front view



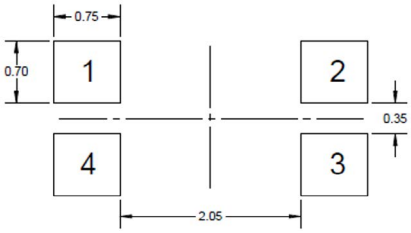
Right view



Bottom view



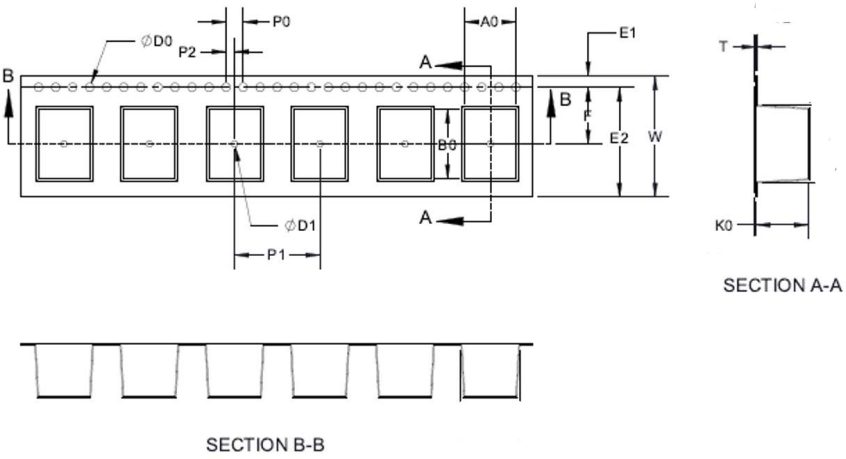
Recommended pad layout



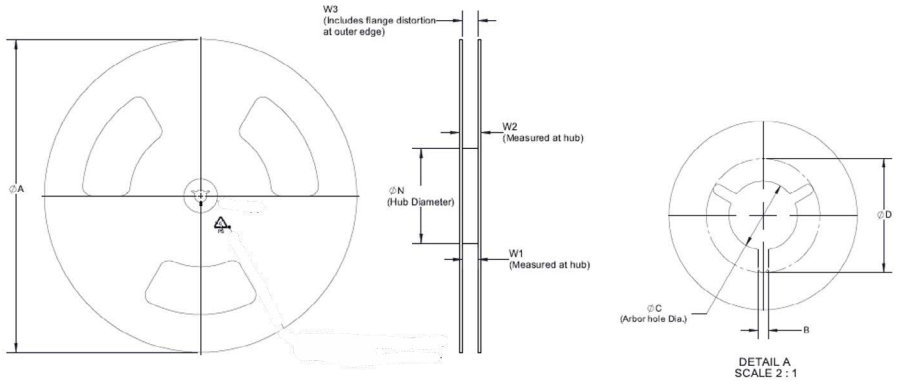
Part marking: No marking
All soldering surfaces to be coplanar within 0.1 millimeters
Silkscreen thickness: 0.1 - 0.15 mm
Traces or vias underneath the inductor is not recommended

Packaging information (mm)

Supplied in tape and reel packaging, 7,000 parts per 13" diameter reel (EIA-481 compliant)

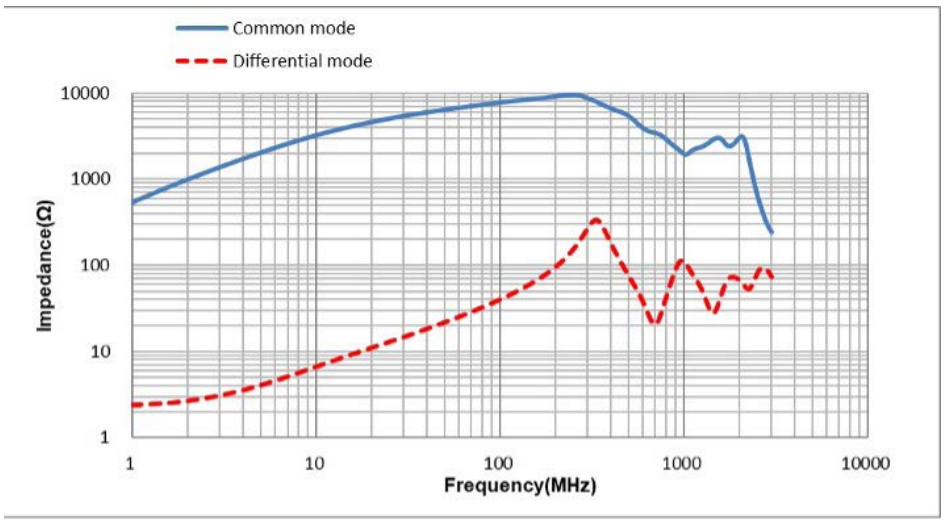


Dimension	CLCC2V3216
Ao	1.85 ± 0.1
Bo	3.65 ± 0.1
Ko	2.30 ± 0.1
T	0.26 ± 0.05
W	8 ± 0.1
F	3.50 ± 0.1
E1	1.75 ± 0.1
E2	5.25 minimum
P0	4 ± 0.1
P1	4 ± 0.1
P2	2 ± 0.05
D0	1.50 + 0.1/-0
D1	0.65 + 0.1/-0

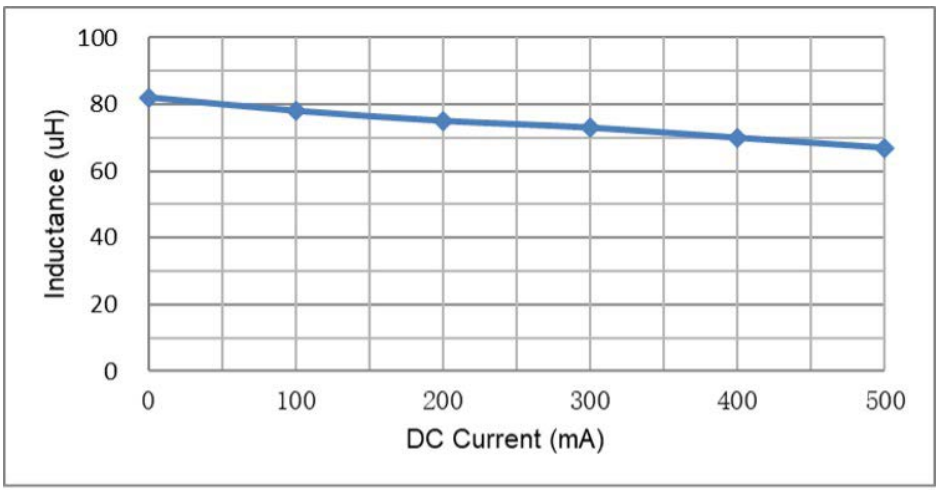


Dimension	CLCC2V3216
Type	13"*8
A	330 ± 2
B	3.20 ± 0.3
C	13 + 0.5/-0.2
D	20.20 minimum
N	100 ± 2
W1	8.4 + 1.5/-0
W2	12.60 ± 0.3
W3	N/A

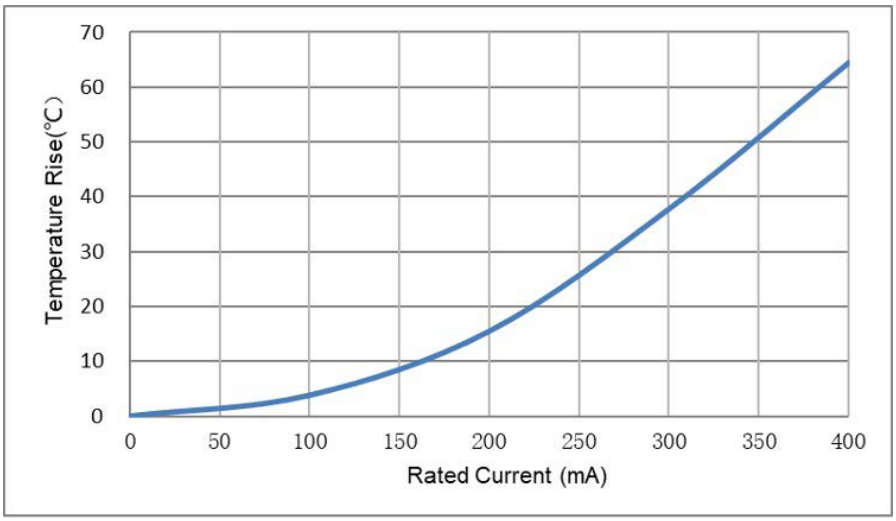
Impedance vs frequency



Inductance vs DC bias

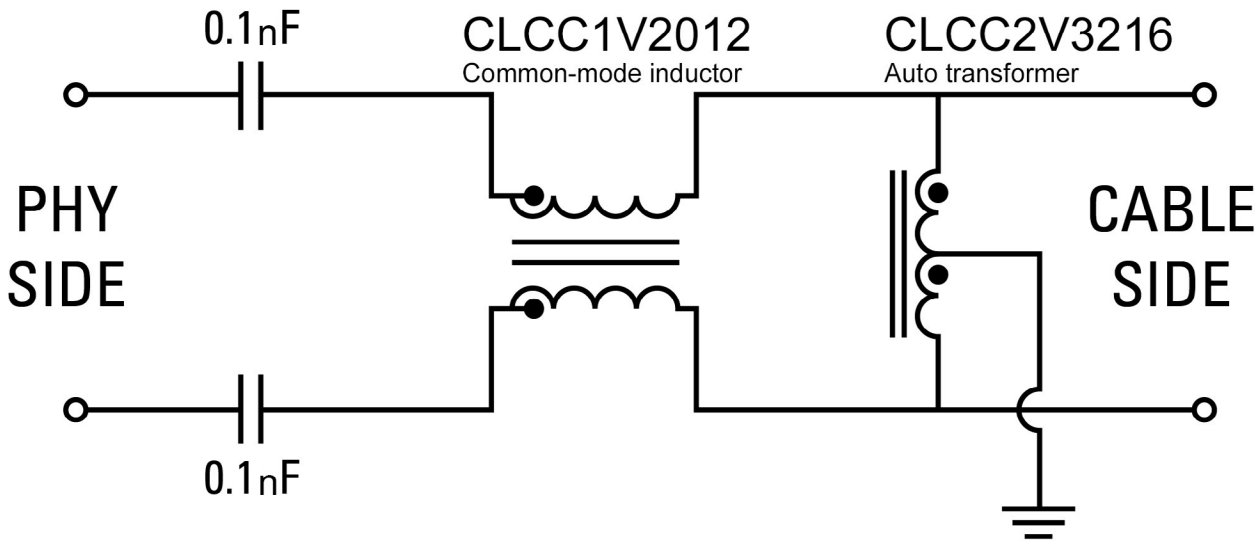


Current vs temperature rise



Application example

Voltage driving capacitive chip LAN circuit using Eaton CLCC1V2012 common-mode inductor and CLCC2V3216 auto transformer



Solder reflow profile

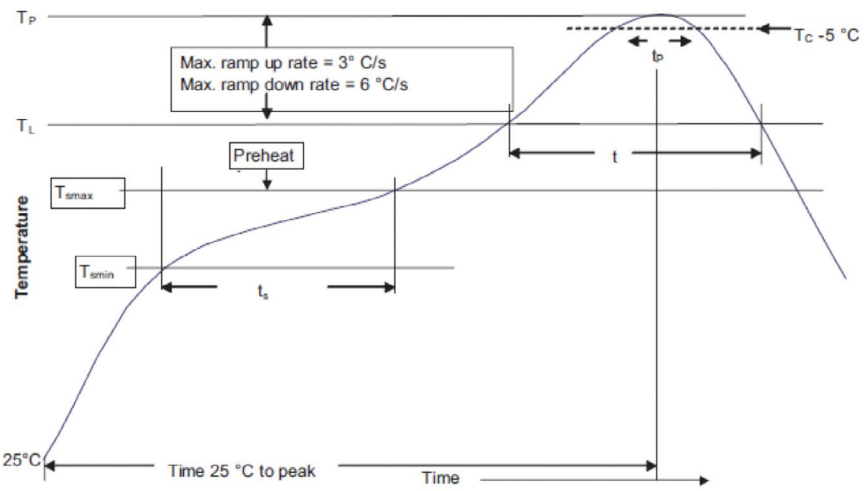


Table 1 - Standard SnPb solder (T_C)

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.

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