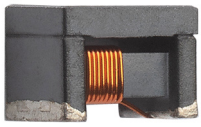
Eaton automotive Power-over-Coax (PoC) inductor - PCA family

High-current Power-over-Coax inductors for broadband filtering in automotive applications



Eaton's PCA family are automotive grade PoC (Power-over-Coax) inductors with two families: PCA1V and PCA2V, both offering a wide range of high-current and SRF performance needed for broadband filtering in PoC applications.

Product description

Eaton's PCA family are automotive grade PoC (Power-over-Coax) inductors with two families: PCA1V and PCA2V, both offering a wide range of high-current and SRF performance needed for broadband filtering in Power-over-Coax (PoC) applications. Eaton's PCA1V and PCA2V are packaged in the popular compact 1210 (3225 metric) industry footprint utilizing less board space. The PCA construction features precision coil winding for superior filtering characteristics in various Power-over-Coax automotive applications and is tested per automotive AEC-Q200. These products are magnetically shielded for optimal EMI immunity and offer a wide operating temperature range from - 55 °C to + 150 °C.

Features and benefits

- Package size - standard SMT footprint;
  - 1210 (3225 metric) footprint
  - 2.3 mm and 3.0 mm height
- Precision-controlled coil winding
- Wide inductances range from 2.2 µH to 47 µH
  - PCA1V3223 (2.2 µH to 47 µH)
  - PCA2V3223 (2.2 µH to 15 µH)
  - PCA1V3230 (2.2 µH to 22 µH)
- EMI shielded construction
- Robust ferrite-bobbin core construction
- High operating temperature: - 55 °C to + 150 °C
- AECQ-200 tested

Powering Business Worldwide

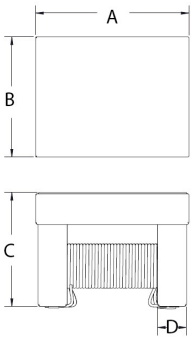
Product specifications

Part number	OCL (µH)	DCR (Ω) maximum @ +25 °C	SRF (MHz minimum)	Isat (mA) Typical +25 °C	Irms (mA) Typical +85 °C	+105 °C	+125 °C
PCA1V3223							
PCA1V3223-2R2-R	2.2 ± 20%	0.19	200	1000	1000	880	520
PCA1V3223-2R7-R	2.7 ± 20%	0.22	200	975	975	860	510
PCA1V3223-3R3-R	3.3 ± 20%	0.24	150	950	950	840	500
PCA1V3223-4R7-R	4.7 ± 20%	0.28	100	850	850	720	400
PCA1V3223-100-R	10.0 ± 20%	0.4	100	500	700	620	360
PCA1V3223-220-R	22.0 ±20%	0.62	50	400	550	500	280
PCA1V3223-470-R	47.0 ± 20%	0.9	30	300	500	300	100

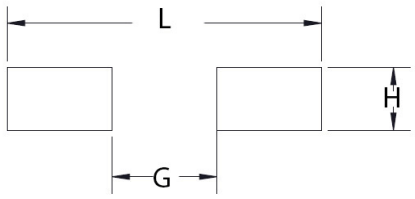
Part number	OCL (µH)	DCR (Ω) maximum @ +25 °C		SRF (MHz)	Isat (mA) Typical					Irms (mA) Typical		
		Typical	Maximum		+25 °C	+85 °C	+105 °C	+125 °C	+140 °C	+25 °C	+85 °C	+125 °C
PCA1V3230												
PCA1V3230-2R2-R	2.2 ± 20%	0.1	0.13	300	2200	1900	1700	1500	1300	1900	1730	1000
PCA1V3230-6R8-R	6.8 ± 20%	0.2	0.24	120	1400	1000	930	800	700	1360	1230	800
PCA1V3230-100-R	10.0 ± 20%	0.29	0.34	95	1100	850	760	660	560	1130	1020	570
PCA1V3230-220-R	22.0 ± 20%	0.76	0.88	70	720	580	520	450	390	700	630	400

Part number	OCL (µH)	DCR (Ω) maximum @ +25 °C	Isat (mA) Typical			Irms (mA) Typical		
			+25 °C	+105 °C	+125 °C	+25 °C	+105 °C	+125 °C
PCA2V3223								
PCA2V3223-2R2-R	2.2±20%	0.18	1100	1000	950	1350	1220	1045
PCA2V3223-4R7-R	4.7±20%	0.1	720	650	600	1500	1400	1300
PCA2V3223-100-R	10.0±20%	0.15	450	400	350	1300	1200	1100
PCA2V3223-150-R	15.0±20%	0.4	400	350	310	825	725	625

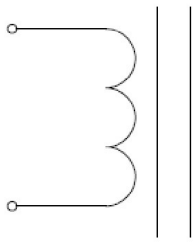
Mechanical parameters (mm)



Recommended pad layout



Schematic



Part number	A	B	C	D	L	G	H
PCA1V3223-XXX-R	3.20 ± 0.20	2.50 ± 0.20	2.30 ± 0.20	0.58 ± 0.10	3.80	2.20	2.80
PCA1V3230-XXX-R	3.20 ± 0.20	2.50 ± 0.20	3.00 ± 0.20	0.58 ± 0.10	3.80	2.20	2.80
PCA2V3223-XXX-R	3.20 ± 0.20	2.50 ± 0.20	2.30 ± 0.20	0.58 ± 0.10	3.80	2.20	2.80

See data sheets for full specification details

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