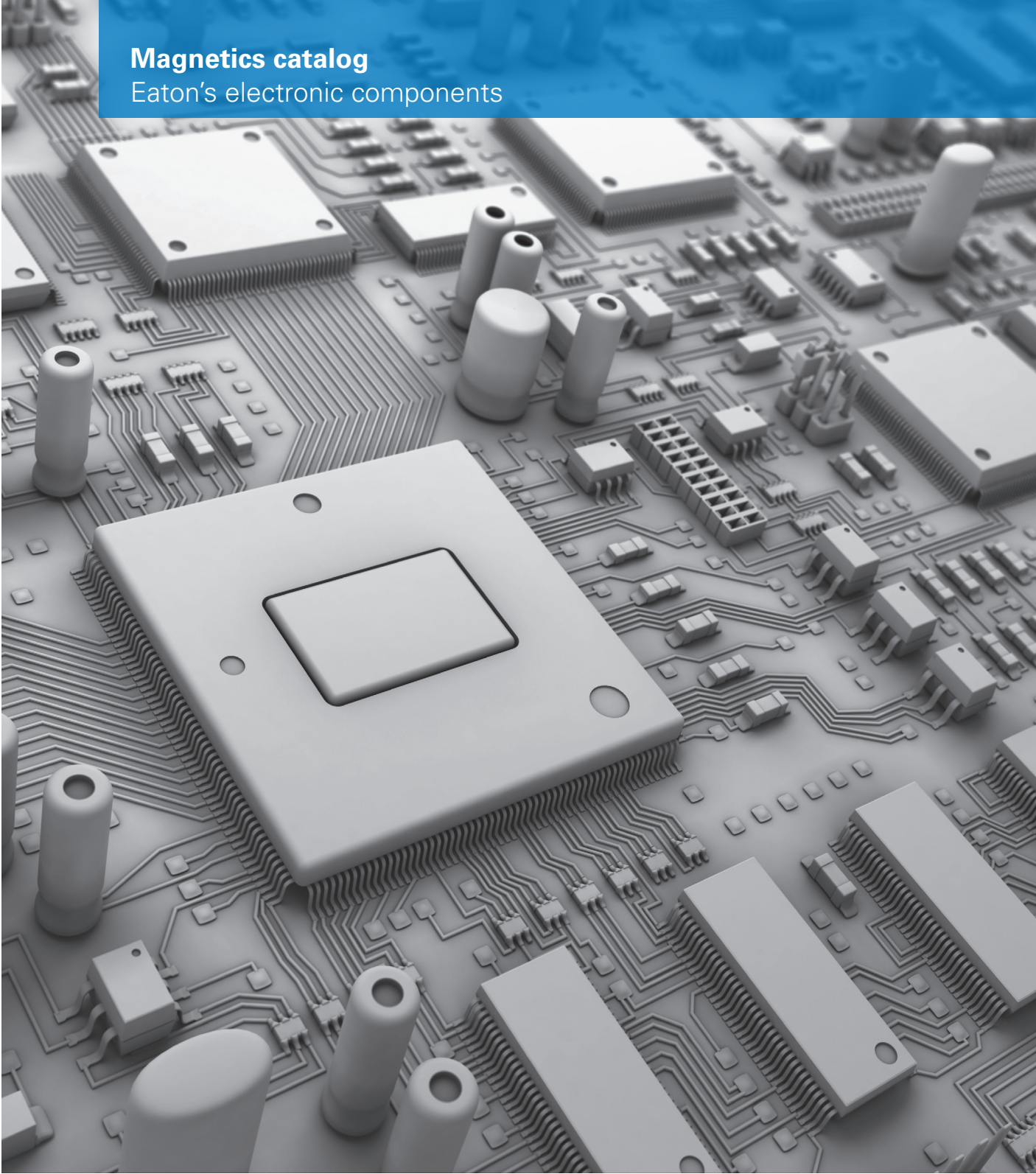


Magnetics catalog
Eaton's electronic components



EATON

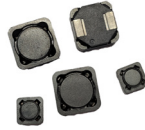
Powering Business Worldwide

Applications

	Automotive						Consumer					Computing				Industrial				Medical				
	Under-the-Hood	ADAS	Lighting	Infotainment	Interior	Drive/Traction	Computing/Peripherals	Personal Communication	Wearables	Set-Top Boxes	TV/Monitor/Display	Appliances	Servers	Storage	Wired Communication	Wireless Communication	Manufacturing Automation	Test & Measurement	Building & Home Control	Lighting & Security	Mission Critical Power	Personal	Consumable	Equipment
Chip inductors	MCL						X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
	WCL						X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X
	MCLA		X		X	X																		
	WCLA		X		X	X																		
High current	EXL						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	MPI						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	MPIA		X	X	X	X																		
	HCM						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	HCx						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
	HCMA		X	X	X	X																		
	HCM1A	X	X	X	X	X																		
	HCM1AV2	X	X	X	X	X																		
	HCSA	X	X	X	X	X																		
	FPx						X	X	X	X	X		X	X	X	X								
Multi-phase & V-core	FP						X			X	X		X	X	X	X								
	TLVR						X			X	X		X	X	X	X								
	CL						X			X	X		X	X	X	X								
	SDCx						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Shielded drum	SDCxA	X	X	X	X	X																		
	DR						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	DRA	X	X	X	X	X																		
	DRAQ	X	X	X	X	X																		
	DRAP	X	X	X	X	X																		
	SD						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	DRQ						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	SDQ						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SMD power	LD						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	UP						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CTX_1x						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	LCPI						X			X	X	X	X	X	X	X	X	X	X	X	X	X		X
Through-hole	RL						X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CMS						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	ECMS						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	ECMT						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	CMLA	X	X	X	X	X																		
	ACE1V		X		X	X																		
Common-mode	MFBx						X	X	X	X	X	X	X	X	X	X	X	X	X				X	X
	MFBA		X		X	X																		
	EPM					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DC-DC converters																								

Automotive AEC-Q200 products

DRA, DRAP, DRAQ, SDCxA, HCMA, HCM1A, HCM1AV2, HCSA, MPIA, MCLA, WCLA, MFBA, ACE1V



Chip inductors and ferrite beads

MCL, MCQ, WCL, MFBx



High current inductors

MPI, HCM, HCx, FPx



Shielded/semi-shielded drum inductors

DR, SD, DRQ, SDQ, SDCx



Surface mount power inductors

LD, UP (Uni-Pac), CTX_-1x
(Octa-Pac, Econo-Pac)



Multi-phase & V-core

FP, CL, TLVR



Through-hole power inductors

LCPI, RL



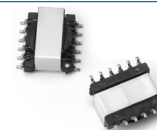
Common-mode inductors

CMS, CMLA, ECMS, ECMT



Transformers

VP (Versa-Pac), POE



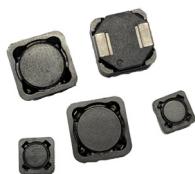
Non-isolated/isolated DC-DC converters

EPM



DRA and DRAQ Automotive-grade high power shielded inductors

- AEC-Q200 qualified
- +165 °C maximum total temperature operation
- Ferrite core material
- Rugged construction for high shock and vibration environments
- Magnetically shielded - reduces EMI
- Dual winding option, DRAQ



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
Single winding											
DRA73	0.29	992	0.24	14.8	0.24	8.4	0.005	6.18	7.6	7.6	3.6
DRA74	0.29	1002	0.29	18.4	0.26	7.3	0.006	5.02	7.6	7.6	4.4
DRA124	0.42	1001	0.63	30.8	0.38	13.5	0.003	3.52	12.5	12.5	4.5
DRA125	0.45	993	0.70	33.2	0.55	14.7	0.003	2.13	12.5	12.5	6.0
DRA127	0.41	999	1.10	56.0	0.60	15.9	0.003	2.10	12.5	12.5	8.0
Dual winding											
DRAQ75	4.48	866	0.31	4.4	0.38	4.5	0.031	4.36	7.6	7.6	4.5
DRAQ127	9.63	192	2.54	11.2	1.31	6.0	0.022	0.44	12.5	12.5	8.0

DRAP Automotive-grade high power shielded inductors

- AEC-Q200 qualified
- Secure four terminal mounting ideal for severe vibration environments up to 30 G
- +165 °C maximum total temperature operation
- Ferrite core material
- Magnetically shielded - reduces EMI



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
Single winding											
DRAP124	0.42	1001	0.63	30.8	0.38	13.5	0.003	3.52	12.5	12.5	4.6
DRAP125	0.45	993	0.70	33.2	0.55	14.7	0.003	2.13	12.5	12.5	6.1
DRAP127	0.41	999	1.10	56.0	0.60	15.9	0.003	2.10	12.5	12.5	8.1

HCM1A Automotive-grade high current shielded inductors

- AEC-Q200 qualified
- +155 °C maximum total temperature operation
- Alloy powder core material
- Low core losses
- Magnetically shielded



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HCM1A0503	0.2	10	2.3	24	2.4	16	2.3	108	5.5	5.3	3.0
HCM1A0703	0.1	33	2.3	36	1.6	22	1.4	242	7.4	7.0	3.0
HCM1A0805	3.3	100	2.7	10	1.5	8	10.0	265	8.3	8.0	5.4
HCM1A1104	0.2	100	3.0	40	1.9	32	0.7	265	11.5	10.3	4.0
HCM1A1305	0.1	33	7.0	80	4.0	43	0.6	86	13.8	12.5	5.0
HCM1A1307	0.2	56	4.6	100	4.6	48	0.7	65	13.7	13.0	6.5
HCM1A1707	1.0	68	6.0	48	5.2	33	1.6	60	17.5	17.2	7.0

SDCxA (SDCLA / SDCHA) Automotive-grade semi-shielded inductors

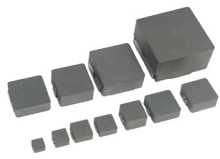
- Multiple industry standard footprints from 4 mm to 8 mm
- AEC-Q200 Grade 1 (-40 °C to +125 °C)
- High current up to 8 A (Irms)
- Wide inductance value range (1 uH to 100 uH)
- Resin shielded for lower EMI



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
SDCHA1V50	1	22	1.1	7.5	1.1	5	12	225	5.2	5.2	4.1
SDCHA1V60	1	100	1.3	13.5	0.9	8	10	456	6.3	6.3	4.5
SDCHA1V80	1	100	1.5	13.8	1.2	8.5	8.2	300	8.3	8.3	4.0
SDCLA1V40	1	22	0.9	4	0.7	3.2	27	290	4.2	4.2	1.8

HCM1AV2 Automotive-grade high current shielded inductors


- AEC-Q200 qualified
- High current carrying capacity in a variety of footprints
- Magnetically shielded, low EMI
- Rugged construction
- Moisture sensitivity level (MSL): 1



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HCM1A4020V2	0.1	15	1.8	22	1.3	16	4.0	384	4.8	4.5	2.0
HCM1A0503V2	0.2	10	2.3	20	2.8	21	2.0	108	5.7	5.4	3.0
HCM1A0703V2	0.1	33	2.3	54	1.6	29	0.8	242	7.3	6.8	3.0
HCM1A0805V2	3.3	68	1.9	8	2.1	9	10	175	8.4	8.0	5.4
HCM1A1104V2	0.2	68	3.0	60	2.2	43	0.7	210	11.2	10.3	4.0
HCM1A1105V2	0.7	68	4.0	30	2.3	25	1.9	211	11.2	10.3	5.0
HCM1A1305V2	0.1	33	5.2	80	4.5	48	0.6	58	13.8	12.9	5.0
HCM1A1307V2	0.2	56	4.3	100	4.0	52	0.6	65	13.8	12.9	6.5
HCM1A1707V2	1.0	68	6.8	57	5.0	36	1.5	60	17.5	17.2	7.0
HCM1A2213V2	0.5	100	8.0	100	6.4	66	0.5	36	22.8	22.3	13.0

HCSA Automotive-grade molded coupled inductors


- Coupled molded design offering soft inductance roll-off vs ferrite solutions
- High current handling up to 11 A
- Lower DCR provides lower losses and improves heat dissipation
- Comes in 3 most popular inductance values 10 μH, 15 μH and 22 μH
- AECQ Grade 1 rated for -55 °C to +155 °C



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HCSA1V1008	10	22	7.5	11.2	3.3	5	40.5	84.1	11.4	10.3	8.2

HCMA Automotive-grade high current shielded inductors


- AEC-Q200 qualified
- +125 °C maximum total temperature operation
- Iron powder core material
- Low core losses
- Magnetically shielded



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HCMA0503	0.2	22	1.9	21	1.9	22	2.3	270	5.5	5.3	3.0
HCMA0703	0.2	33	2.2	52	1.8	26	2.5	242	7.4	7.0	3.0
HCMA1104	0.2	22	5.5	45	5.0	32	0.7	66	11.5	10.3	4.0
HCMA1305	0.1	33	8.0	118	5.2	55	0.6	86	13.8	12.5	5.0
HCMA1707	1.5	68	6.5	40	5.2	40	2.2	85	17.5	17.2	7.0

MCLA Multilayer automotive-grade RF chip inductors

- AEC-Q200 Grade 3 qualified
- High current withstand capability with low DCR
- Monolithic construction yields high reliability
- High Q
- Flexible footprint options



	Inductance (μH)		SRF (MHz)		I Rated (mA)		DCR Max. (mΩ)		Size (mm)		
	Min	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
MCLA1005V2	0.001	0.3	350	10000	50	400	100	7000	1.2	0.7	0.7
MCLA1608V1	0.047	3.9	35	260	15	50	200	1300	1.8	1.0	1.0
MCLA1608V2	0.001	0.5	250	10000	150	500	50	3600	1.8	1.0	1.0
MCLA2012V1	0.047	12.0	22	320	15	300	150	1150	2.2	1.4	1.1
MCLA3216V1	0.047	12.0	22	320	15	300	150	900	3.4	1.8	1.1

MFBA Automotive-grade ferrite beads

- AEC-Q200 qualified
- 0402 (0603 metric), 0603 (1608 metric), and 1206 (3126 metric)
- Rugged multilayer monolithic construction
- High impedance performance
- Special design for high current applications (up to 4 A)
- Wide range of impedance values 30 Ω to 600 Ω
- Operating temperature range: -55 °C to +150 °C



	Impedance (Ω) ±25%		Idc Current Max. (mA)		DCR Max. (mΩ)		Size (mm)		
	Min	Max.	Min.	Max.	Min.	Max	L	W	H
MFBA2V1005	33	220	1500	4000	0.03	0.15	1	0.5	0.5
MFBA2V1608	30	600	1000	3000	0.04	0.2	1.6	0.8	0.8
MFBA2V2012	30	600	1000	3000	0.04	2	2	1.3	0.9

ACE1V Automotive-grade common-mode chip inductors

- AEC-Q200 qualified
- High filtering capability
- Low parasitic capacitance
- Rugged construction
- Standard footprints



	Impedance Z (Ω)		Idc Current Max. (mA)		Rated Voltage (V)		DCR Max. (mΩ)		Size (mm)		
	Min	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
ACE1V2012	90	2200	150	400	50	300	2000	2.2	1.4	1.4	
ACE1V3225	300	5100	70	300	80	400	4800	3.4	2.7	2.5	
ACE1V4532	300	15000	100	250	50	600	4500	4.7	3.4	3.0	

WCLA Wire wound automotive-grade RF chip inductors

- AEC-Q200 Grade 3 qualified
- High current withstand capability with low DCR
- High Q
- Flexible footprint options



	Inductance (μH)		SRF (MHz)		I Rated (mA)		DCR Max. (mΩ)		Size (mm)		
	Min	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
WCLA1005V1	0.001	0.1	1100	10000	30	1360	45	2200	1.2	0.7	0.6
WCLA1608V1	0.002	0.5	700	12500	75	700	40	7000	1.8	1.1	1.0
WCLA2012V1	0.002	2.2	50	8500	150	800	30	4200	2.3	1.7	1.5

MPIA Automotive-grade low profile, high power density shielded inductors

- AEC-Q200 qualified
- Soft saturation roll-off
- +125 °C maximum total temperature operation
- Rugged construction
- Magnetically shielded



	Inductance (μH)		Isat Current (A)		I rms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
MPIA20-V1	0.5	2.2	2.6	5.5	2.2	4.5	31	135	2.2	1.8	1.0
MPIA25-V2	0.3	4.7	1.9	7.5	1.4	5	19	235	2.7	2.2	1.0-1.2
MPIA40-V2	0.1	22.0	1.7	22.0	1.2	16	5	402	4.7	4.3	1.2-2.0

FP high current inductors

- High frequency
- Ferrite core material
- Tight tolerance DCR
- High current carrying capacity
- Small size, low profile, open bottom, lower DCR, and vertical versions



	Inductance (nH)		Isat Current (A)		Irms Current (A)		DCR Typ. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
FP0404	22	170	14	9		19		0.32	4.0	4.0	3.0 - 4.0
FP0505R		100		34		30		0.38	5.0	5.0	4.8
FP0507V		50		80		35		0.47	5.2	5.0	6.6
FP0705	72	220	20	65	32	43	0.25	0.46	7.0	7.0	5.0
FP2	50	500	9	70	16	39	0.13	0.65	7.2	6.7	3.0 - 5.0
FP0707		110		55		45		0.32	7.2	7.2	7.0
FP0708	72	200	36	90		44		0.35	8.5	7.0	7.2
FP0805	32	200	20	110		65		0.17	7.6	7.5	5.0
FP0807	70	220	35	108		45		0.50	7.6	7.4	7.0
FP0906	100	300	33	94		51		0.29	9.6	6.5	8.0
FP0910V	100	470	17	80		44	0.13	0.40	9.0	5.0	9.5
FP1005	85	220	33	90	45	53	0.39	0.70	10.2	7.0	5.0
FP1006	85	220	38	100	45	53	0.27	0.36	10.2	8.0	6.0
FP4	100	200	30	64	33	40	0.42	0.65	10.2	6.8	5.0
FP1007	115	300	32	94	51	61	0.29	0.48	10.4	8.0	6.5 - 7.5
FP1007R6	150	470	24	75		61		0.29	10.5	8.0	7.0
FP1008R5/R6	100	300	36	103	74	79	0.17	18.00	10.8	8.0	8.0
FP1008L	100	150	50	75		65		0.17	9.6	6.4 - 7.5	8.0
FP1008R7	100	180	60	100		72		0.12	10.8	8.2	8.2
FP1010R	70	330	20	124	50	78	0.15	0.19	10.0	7.0	10.0
FP1010V	100	470	30	117	34	68	0.15	0.42	9.6	6.4	10.0
FP1012V	70	470	22	130		84		0.14	10.0	6.0	12.0
FP1105	100	226	39	81		46		0.35	11.0	8.0	4.9
FP1107R	70	510	18	140	42	55	0.29	0.47	11.0	7.2	7.2 - 7.5
FP1108	100	210	55	100		65		0.29	11.0	8.0	7.5
FP1108B		180		63		40		0.29	11.6	8.0	8.0
FP1108L1/L2	105	180	47	81	48	64	0.10	0.18	11.0	8.2	8.3
FP1108L3/L4	105	180	33	57		91		0.05	11.0	8.0	8.0
CTX01-18738-R		210		55		50		0.29	11.0	8.0	7.5
FP1109	205	950	12	69		35		0.42	11.2	11.2	9.0
FP1109B	150	330	38	80		55		0.19	11.0	8.2	9.0
FP1110V1	195	320	42	70		61		0.23	10.5	7.5	9.5
FP1110V2		200		65		61		0.18	10.5	6.2	9.5
FP1206	120	400	24	88		50		0.43	12.0	8.0	6.0
FP1208	150	250	55	85		50		0.29	12.1	8.0	8.0
FP1308R	110	440	37	120	45	68	0.18	0.53	13.4	12.7	8.0
FP1309B	100	150	80	100		60		0.19	12.8	8.3	8.8
FP1505	100	400	24	105		53		0.47	15.0	7.0	5.0
FP2207		230		75		50		0.54	22.5	8.2	7.3

Computing (V-core, multi-phase, VRM, POL) solutions

TLVR - Trans-inductor voltage regulators

- High current
- Higher efficiency
- Fast multi-phase trans-inductor voltage regulator
- Low ripple current performance
- Single and dual configurations



	Inductance (nH)		Isat Current (A)		Irms Current (A)		DCR Typ. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
TL1011V2	70	170	67	163	70			0.16	9.6	6.4	11
TL1012V2	70	170	64	157	75			0.138	10	6.0	12
TL1211V1	70	200	62	180	75			0.138	12	6.0	11.1
TL1211V2	70	200	59	170	75			0.138	12	6.0	11
TL1212V2	70	170	76	186	75			0.138	12	6.0	12.1
TLP1013V1	105	170	66	108	72			0.154	12	6.4	13.2

High current inductors – zero voltage switching (ZVS)

- Ferrite core material
- Magnetically shielded
- Compatible with Picor® Cool-Power® ZVS buck and buck-boost regulator families



	Inductance (nH)		Isat Current (A)		Irms Current (A)		DCR Typ. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
Dual conductor and two-turn construction											
FPT705	170	300	17	31	13			0.7	7.5	8.3	5.3
FPT1006	340	580	23	41	19			1.0	10.3	8.7	6.4
FPV1507	500	650	31	40	20			1.2	15.1	8.6	6.6
CTX01-19603-R		375		52	16			1.3	15.1	8.6	6.6
Single conductor and multi-turn winding											
FPV1006	85	150	45	81	25			0.4	10.3	8.7	6.4
FP1507R		185		40	45			0.5	15.1	8.5	6.7
HCV1206	420	3000	13	42	11	16	3.15	7.4	12.7	10.2	5.1
HCV1707		480		55	32			1.9	17.8	14.4	6.9

Multi-phase coupled inductors

- High current multi-phase inductor
- Ferrite core material

- Designed exclusively for use with Maxim® VPR-Devices



	Number of phases		Inductance per phase (nH)		DCR typ. (mΩ)	Size (mm)		
	Min.	Max.	Min.	Max.	Max.	L	W	H
CL0904	2	3	50		0.35	20.5 - 27.8	8.5	4.0
CL1108	2	5	50		0.28	18.5 - 45.8	11.5	8.0
CLA1108	2	4	50		0.28	18.5 - 36.5	11.5	8.0
CLB1108	2	5	50		0.28	18.5 - 45.8	11.5	8.0
CL0608		2	100		0.89	10.5	6.8	8.0
CL1110-R	2	6	100		0.63	10.0 - 29.0	11.8	10.5
CL1208	2	6	100		0.45	2.5 - 36.5	12.0	8.5
CLH1110R1	3	6	50		0.23	23 - 45.8	11.5	10.0
CPL/CPLA/CPLE	2	6	50		0.60	18.5 - 54.7	8.5	4.8
CPL2	2	5	50		0.28	26.5 - 54	11.5	5.0
CTX01-18754-R		2	60		0.26	12.7	12.1	3.0
CTX17-18765-R		2	50		0.27	10.0	10.0	4.0
CTX17-18913-R		2	100		0.30	18.5	11.5	10.0

MPI Low profile, high power density shielded inductors

- Rugged construction
- Magnetically shielded

- High frequency, high current
- High power density



	Inductance (μH)		Isat Current (A)		I rms Current (A)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
MPI20-V1	0.47	2.2	2.6	5.5	2.2	4.5	31	135	2.2	1.8	1.0
MPI25-V2	0.33	4.7	1.9	7.5	1.4	5.1	19	235	2.7	2.2	1.0-1.2
MPI40-V2	0.10	22.0	1.7	22.0	1.2	16.0	5	402	4.7	4.3	1.2-2.0

MCL Multilayer RF chip inductors

- High-Q
- Suitable for RF matching

- High current with good attenuation
- Monolithic construction yields high reliability



Family	Inductance (μH)		SRF (MHz)		I Rated (mA)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
MCL1005	0.001	0.4	300	10000	50	400	100	7500	1.2	0.7	0.7
MCL1608V1	0.047	12.0	15	260	60	150	120	1250	1.8	1.0	1.0
MCL1608V2	0.002	0.5	250	10000	150	500	50	3600	1.8	1.0	1.0
MCL2012V1	0.047	22.0	16	320	50	350	15	750	2.2	1.4	1.1
MCL2012V2	0.0015	0.5	200	6000	300	500	100	2000	2.2	1.4	1.1

WCL Wire wound RF chip inductors

- High-Q
- Suitable for RF matching

- High current with good attenuation



	Inductance (μH)		SRF (MHz)		I Rated (mA)		DCR Max. (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
WCL2520	0.12	220	2.5	850	20	800	150	18000	2.9	2.8	2.1
WCL3225	0.12	2560	1.5	850	30	450	200	28000	3.5	2.9	2.3

Commercial and industrial solutions

EXL High performance molded inductors

- High current carrying capacity, 4.4 A to 25 A
- Low DCR, high efficiency
- Magnetically shielded, low EMI

- Soft-rolloff saturation current
- Inductance range from 0.47 μH to 15 μH
- 5 PCB sizes (4 mm to 10 mm height)



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. ($\text{m}\Omega$)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
EXL1V0402	0.5	3.3	4.4	12.5	4.4	9.8	6.8	38.3	4.6	4.6	2.1
EXL1V0503	0.2	4.7	7	32.5	4.3	14.3	2.3	36.3	6.2	5.9	3.1
EXL1V0505	5.6	10	5.4	7.2	3.8	5.3	24.2	43	6.2	5.9	5.0
EXL1V0603	0.2	4.5	8	36	5	24	1.8	25.3	7.4	7.1	3.1
EXL1V0605	0.8	8.2	6.8	20	4.5	16	4.2	31.5	7.4	7.1	5.0
EXL1V0606	1	10	6.8	16	5	15	4.3	29.3	7.4	7.1	6.0
EXL1V0703	1	8.2	9	28	3	16.1	5	48.7	8.7	8.3	3.1
EXL1V0705	2.2	5.6	11	17	7	11	6.4	17.2	8.7	8.3	5.0
EXL1V0707	2.2	6.8	11	17.6	7	13.2	6.3	19.6	8.7	8.3	7.0
EXL1V1010	3.3	15	12.5	23.4	9.9	18.2	4.1	19.3	12.2	11.3	10.0

HC High current inductors – iron powder

- Iron powder core material
- Magnetically shielded, low EMI

- High current carrying capacity, low core losses

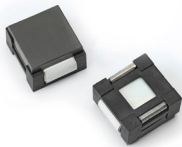


	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. ($\text{m}\Omega$)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HCM0503	0.2	22.0	1.9	21	1.9	22	2.3	270	5.5	5.3	3.0
HCM0703	0.2	33.0	2.2	52	1.8	26	2.5	242	7.4	7.0	3.0
HCM1103	0.1	22.0	5.0	75	3.0	30	0.6	99	11.5	10.3	3.0
HCM1104	0.2	22.0	5.5	45	5.0	32	0.7	66	11.5	10.3	4.0
HCM1305	0.1	33.0	8.0	12	5.2	55	0.6	86	13.8	12.5	5.0
HCM1307	0.5	3.0	40.0	63	15.0	38	1.2	5	14.2	13.0	6.5
HCM1707	1.5	68.0	6.5	40	5.2	40	2.2	85	17.5	17.2	7.0
HCP0605		0.1		20		53			6.1	5.3	5.0
HCP0704	0.4	4.7	8.0	27	5.0	17	3.5	33	6.8	6.8	4.0 - 4.2
HCP0805	0.4	2.2	14.0	32	10.0	20	3.3	12	7.9	7.6	5.0
FP3	0.1	14.9	2.5	35	2.2	19	1.2	127	7.3	6.7	3.0
DRQ127	0.419	4020	0.571	56.0	0.307	17.9	2.0	6,800	12.5	12.5	8.0

HC High current inductors – ferrite

- Ferrite core material
- Low profile

- Low core losses with high DC bias
- High current



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. ($\text{m}\Omega$)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HCF1007	0.3	10.0	5.3	48	9.4	30	0.99	9.2	10.3	8.1	6.7
HCF1305	0.5	4.7	10.4	36	10.9	32	1.00	7.2	12.5	12.5	5.0
HC1	0.2	10.5	5.3	41	12.8	51	0.36	5.7	13.0	13.0	10.0
HC2LP	0.5	6.0	16.5	64	17.0	53	0.60	4.6	19.2	19.2	11.2
HC3	0.5	6.5	30.0	120	33.8	78	0.42	2.2	25.3	30.0	17.5 - 18.0

HC High current inductors – high temperature shielded inductors

- +155 $^{\circ}\text{C}$ maximum total operating temperature
- Low DCR


- High efficiency



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. ($\text{m}\Omega$)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
HC8	0.175	47.3	4.2	76	2.2	39.0	0.8	237	10.9	10.4	4.0
HC8LP	0.170	47.9	3.1	56	1.8	29.0	1.4	344	10.9	10.4	3.3 - 3.5
HC9	0.219	49.2	5.7	95	3.7	46.7	0.5	72	13.4 - 14.1	13.1	7.5
HC7	0.220	4.8	17.3	87	9.8	35.8	0.7	9	13.8 - 14.3	13.0	5.5 - 6.0

DR and DRQ High power, shielded inductors


- High power density
- High efficiency
- Magnetically shielded drum
- Dual winding available, DRQ
- Secure mounting
- Ferrite core material



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCRTyp. (mΩ)		Size (mm)			
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H	
Single winding												
DR73	0.306	995	0.250	14.4	0.26	6.2	8.5	5060	7.6	7.6	3.6	
DR74	0.294	1009	0.310	18.4	0.27	6.3	8.6	4540	7.6	7.6	4.4	
DR1030	1.100	155	0.860	9.5	0.68	7.0	8.0	700	10.5	10.3	3.0	
DR1040	1.400	323	0.700	10.0	0.52	6.5	8.0	1090	10.5	10.3	4.0	
DR1050	0.700	1000	0.480	13.5	0.43	9.7	4.0	1950	10.5	10.3	5.0	
DR124	0.420	998	0.530	24.4	0.44	16.0	2.7	3500	12.5	12.5	4.5	
DR125	0.456	120630	0.069	33.0	0.06	17.6	2.1	175000	12.5	12.5	6.0	
DR127	0.419	1005	1.140	56.0	0.61	17.9	2.3	1940	12.5	12.5	8.0	
Dual winding												
DRQ73	0.306	3980	0.130	14.4	0.128	6.2	6.0	17,400	7.6	7.6	3.6	
DRQ74	0.294	4036	0.160	18.4	0.135	6.2	6.0	15,600	7.6	7.6	4.5	
DRQ125	0.470	4032	0.350	33.0	0.283	17.6	2.0	6,800	12.5	12.5	6.0	
DRQ127	0.419	4020	0.571	56.0	0.307	17.9	2.0	6,800	12.5	12.5	8.0	

SD and SDQ High power, shielded inductors

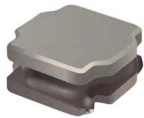
- High power density
- Dual winding available, SDQ
- Ferrite core material
- Low profile shielded drum



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (Ω)		Size (mm)			
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H	
Single winding												
SD10	0.45	468	0.11	3.5	0.12	2.59	0.025	12.10	5.2	5.2	1.0	
SD12	0.49	992	0.09	3.9	0.12	3.19	0.025	17.20	5.2	5.2	1.2	
SD14	0.61	1008	0.12	4.8	0.13	3.52	0.022	15.80	5.2	5.2	1.5	
SD18	0.49	1004	0.10	4.6	0.14	3.58	0.020	14.01	5.2	5.2	1.8	
SD20	0.49	1005	0.88	4.0	0.17	3.59	0.020	8.73	5.2	5.2	2.0	
SD25	0.47	1003	0.13	6.0	0.22	3.88	0.018	5.70	5.2	5.2	2.5	
SD3114	1.20	330	0.14	2.4	0.11	1.60	0.058	11.78	3.7	3.1	1.4	
SD3118	1.00	999	0.08	3.1	0.09	2.01	0.041	21.00	3.9	3.2	1.8	
SD53	1.10	100	0.45	4.8	0.44	3.25	0.017	0.69	5.2	5.7	3.0	
SD6020	1.99	94	0.36	2.2	0.42	4.20	0.030	1.00	6.0	6.0	2.0	
SD6030	2.70	659	0.16	2.6	0.27	4.08	0.013	3.50	6.0	6.0	3.0	
SD7030	1.50	677	0.21	4.5	0.28	5.50	0.010	3.20	7.0	7.0	3.0	
SD8328	2.70	97	0.80	4.5	0.80	6.60	0.012	0.33	9.5	8.3	3.0	
SD8350	1.50	99	1.30	9.1	0.80	5.50	0.012	0.32	9.5	8.3	4.5	
Dual winding												
SDQ12	0.49	331	0.167	4.34	0.15	2.78	0.0325	10.49	5.2	5.2	1.2	
SDQ25	0.39	4033	0.063	6.43	0.08	3.71	0.0181	39.26	5.2	5.2	2.5	

SDCx (SDCL / SDCH) Semi-shielded inductors

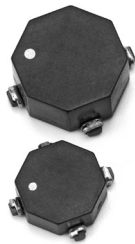
- High current carrying capacity
- Great balance between performance, and low cost design
- Magnetically semi-shielded using magnetic resin/epoxy technology
- Low profile shielded drum
- Inductance range from 0.33 μH to 1 mH (1000 μH)



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
SDCH1V50	1	680	0.2	8	0.2	4.7	0.26	113	5.2	5.2	4.1
SDCH1V60	1	1000	0.3	12.8	0.2	6	0.2	69	6.2	6.2	4.5
SDCH1V80	1	1000	0.4	12	0.4	8	0.09	33	8.3	8.3	4.2
SDCL1V20	0.5	15	0.5	2.4	0.4	2.3	0.5	13	2.3	1.9	1.1
SDCL1V25	0.3	22	0.6	4.3	0.4	3	0.4	9.9	2.8	2.4	1.2
SDCL1V30	1	100	0.2	2.4	0.2	2.3	0.6	28.8	3.2	3.2	1.5
SDCL1V40	0.5	470	0.3	10	0.2	7	0.2	83	4.2	4.2	3.0

Dual winding toroidal power inductors

- Dual winding inductors that can be used as either a single inductor, or in coupled inductor/transformer applications (1:1 turns ratio)
- Closed magnetic path, low EMI
- Low core loss



	Inductance (μH)		Current (A)		DCR Max. (Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
CTX_-1	0.40	1210	0.1	5.5	0.005	5.7	11.4	8.9	4.2
CTX_-2	0.42	1203	0.2	6.5	0.005	4.9	11.4	8.9	6.0
CTX_-3	0.38	1204	0.2	6.0	0.005	3.1	14.0	11.4	4.8
CTX_-4	0.44	1192	0.3	7.0	0.004	2.7	14.0	11.4	6.4
CTX_-1P	0.42	1199	0.2	5.5	0.005	6.1	11.4	8.9	4.2
CTX_-2P	0.54	1201	0.2	5.9	0.006	4.7	11.4	8.9	6.0
CTX_-3P	0.46	1194	0.3	6.2	0.006	3.7	14.0	11.4	4.8
CTX_-4P	0.49	1196	0.3	7.9	0.005	4.0	14.0	11.4	6.4

	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (m Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
CTX_-4A	0.33	1211	0.4	22.5	0.4	12.2	0.003	3.1	14.0	11.4	6.4

UP Unshielded drum core power inductors

- Designed for high shock environments
- Ferrite core material
- Rugged construction



	Inductance (μH)		Isat Current (A)		Irms Current (A)		DCR Max. (m Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
UP0.4C	1.20	100	0.4	3.7	0.37	2.88	30.0	1580	6.6	4.5	2.9
UP1B	0.57	332	0.3	7.7	0.28	6.00	9.7	3100	8.9	6.1	5.0
UP2B	0.60	1005	0.3	11.4	0.37	10.60	4.9	2960	14.0	10.4	6.0
UP2.8B	0.98	150	0.7	8.0	0.62	3.60	28.6	971	12.9	9.4	2.8
UP2UC	1.00	1000	0.3	9.0	0.30	6.80	9.0	3000	13.0	9.5	5.2
UP3B	0.45	330	1.0	25.1	0.75	16.00	2.1	733	19.3	13.2	6.8
UP4B	0.47	470	1.7	51.7	0.91	19.20	1.9	833	22.1	15.0	7.9
UP5	1.00	1000	1.0	20.0	0.56	8.60	9.0	1800	18.7	15.3	7.5

CMS Toroidal common mode inductors

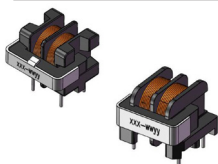
- Common mode inductor
- +160 °C maximum total temperature
- Frequency range up to 100 MHz
- Noise attenuation up to 44 dB



	Inductance (μH)		I _{rms} Current (A)		DCR Typ. (Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
CMS1	8	205	0.85	7.0	0.003	0.19	9.4	7.2	2.6
CMS2	25	1340	0.50	6.0	0.004	0.62	11.4	8.9	6.0
CMS3	28	1310	0.75	5.7	0.005	0.03	14.0	11.4	6.0

ECMT Power line common mode choke

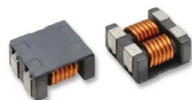
- Multiple industry standard footprints from 17 mm to 29 mm
- Wide range operating temperature (-40 °C to +125 °C)
- Current ratings up to 2.5 A
- Wide inductance range
- High voltage isolation 1500 Vac



	Inductance (μH)		I _{rms} Current (A)		DCR Max (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
ECMT1V17	1	85	0.3	1.4	0.1	5.7	17	16	14
ECMT1V20	2	60	0.4	1.5	0.1	2.1	19.5	19.5	17
ECMT1V24	5	30	0.6	1.4	0.3	1.6	20	29	24

ECMS Power line common mode filter

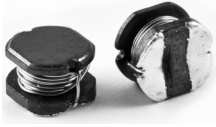
- Multiple industry standard footprints from 7 mm to 12 mm
- Operating temperature (-40 °C to +125 °C)
- Impedances up 3,000 Ω
- High current up to 15 A
- Voltage rated up to 125 V



	Impedance (Ω) Min.		I _{rms} Current (A)		DCR Max (mΩ)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
ECMS1V0704	40	2500	0.9	15	5	75	7.5	8	6.5
ECMS1V0905	225	2000	2	6	6	80	9.5	10	7.5
ECMS1V1306	80	750	6	10	2	14	12.5	13	11.3

LD Metalized, unshielded drum core inductors

- Metalized, unshielded drum core
- Ferrite core material
- Noise filtering and output filter chokes



	Inductance (μH)		Isat Current (A)		I _{rms} Current (A)		DCR Max. (m Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
LD1	1	330	0.3	4.5	0.22	2.66	33	4700	4.8	4.3	3.5
LD2	10	470	0.6	3.5	0.74	3.83	70	1960	8.1	7.3	5.3

LCPI Vertical, horizontal and header mounted through-hole toroidal inductors

- Self-leaded and header mounted toroidal inductors
- Low loss, iron powder cores with stable electrical operating characteristics
- Vertical and horizontal configurations



	Inductance (μH)		Isat Current (A)		I _{rms} Current (A)		DCR Max. (m Ω)		Mounting Style		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
CTX-52	10.1	1004	1.9	29.5	1.5	31.5	0.003	0.64	Vertical		
CTX-52LP	10.1	1004	1.9	29.5	1.5	31.5	0.003	0.64	Horizontal		
CTX-52M	10.1	1004	1.9	14.5	1.5	11.4	0.008	0.64	Header		

RL Through-hole unshielded inductors

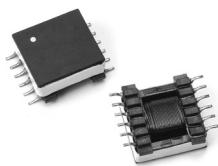
- Radial leaded, unshielded drum core
- Protective sleeving over winding
- Ferrite core



	Inductance (μH)		Isat Current (A)		I _{rms} Current (A)		DCR Max. (m Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
RL1011	4.43	2204	0.3	7.1	0.26	4.60	17	4580	9.5	9.5	10.5
RL1218	4.47	12000	0.3	15.0	0.20	5.65	17	14100	12.2	12.2	18.0

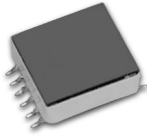
VP Surface-mount configurable inductor/transformers

- High power density, low profile configurable transformers
- Multi-winding (six total)
- Ferrite core material
- Low radiated noise and tightly coupled windings
- Over 500 configurable combinations



Family	Inductance (μH)		Isat Current (A)		I _{rms} Current (A)		DCR Max. (m Ω)		Size (mm)		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	L	W	H
VP1/VPH1	3.8	201	0.04	1.37	0.55	0.85	0.145	0.344	13.0	12.9	6.2
VP2/VPH2	3.2	160	0.10	2.50	0.95	1.26	0.090	0.159	16.8	16.3	7.8
VP3/VPH3	3.8	132	0.10	1.73	0.97	1.47	0.061	0.140	22.3	17.1	8.4
VP4/VPH4	3.8	160	0.11	2.18	1.41	1.70	0.057	0.083	24.6	18.0	10.0
VP5/VPH5	3.4	173	0.14	4.59	1.70	2.08	0.047	0.071	28.5	21.0	10.8

Power-over-Ethernet (PoE) configurable transformers



- Versatile design allows for multiple output variations
- Flyback and forward topology
- Low leakage inductance
- Ferrite core material

Family	Power (W)	Input (V)		Primary Inductance (μH)	Secondary Outputs@Currents	DCR Primary (Ω)	DCR Secondary (Ω)		Leakage Inductance (μH)		Size (mm)		
		Min.	Max.				Min.	Max.	Min.	Max.	L	W	H
PoE4	4	29.5	60	200	3.0 x 3.3 V @ 0.5 A 3.0 x 5.0 V @ 0.3 A 2.0 x 12.0 V @ 0.2 A	0.50	0.07	0.74	1.4	2.8	22.3	17.1	8.4
PoE7	7	29.5	60	100	3.0 x 3.3 V @ 0.8 A 3.0 x 5.0 V @ 0.5 A 2.0 x 12.0 V @ 0.3 A	0.28	0.03	0.25	1.0	1.0	22.3	17.1	8.4
PoE13	13	29.5	60	100	3.0 x 3.3 V @ 1.4 A 3.0 x 5.0 V @ 0.9 A 2.0 x 12.0 V @ 0.6 A 7.0V@1.1A, 3.3V@1.1A, 1.8V@1.1A 5.0V@1.6A, 3.3V @ 1.6 A	0.25	0.03	0.28	1.0	1.5	24.6	18.0	10.0
PoE26	26	29.5	60	160	2.0 x 3.3 V @ 4.0 A 5.0 V @ 2.6 A	0.10	0.03	0.05	1.0	1.0	28.5	21.5	10.8

Custom capabilities

Custom capabilities

Eaton's leadership in custom solutions is derived from our in-depth understanding of applications, modeling tools, and customer needs to maximize device performance. We offer transformers, inductors, and planar form factors which can be build to print or fully designed by our team.

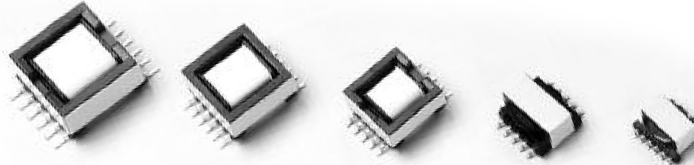
Standard geometry custom inductors

- Power range from 1 W to 120 W
- Frequency range from 20 kHz to 500 kHz
- High power density and low radiated noise
- Ferrite core material

Standard geometries sizes 1 to 9 core and bobbin parameters

Specifications	SG1	SG2	SG3	SG4	SG5	SG6	SG7	SG8	SG9
Core	ER 11/5	ER 14.5/6	EFD 15	EFD 17	EFD 20	EE8.3	EF 12.6	EE 13	SEE 16
AL-1, nH/T ²	1400	1600	780	1028	1200	675	1075	1100	1254
AL-2, nH/T ²	190	216	138	140	155	96	95	128	153
AL-3, nH/T ²	102	116	84	75	83				
AL-4, nH/T ²	76	83	55	60	67	58	57	77	92
AL-5, nH/T ²	59	66	47	47	53				
Ae, min. core area, cm ²	0.09	0.15	0.12	0.20	0.31	0.06	0.10	0.14	0.18
le, mag. path lgth., cm	1.46	1.90	3.40	4.12	4.70	1.92	2.96	3.06	3.55
Ve, core volume, cm ³	0.17	0.33	0.51	0.94	1.46	0.16	0.39	0.55	0.86
MLT, ave. turn length, cm	2.167	2.705	2.681	3.220	3.836	2.088	2.548	3.230	3.778
Wa, usable wdg. area, cm ² *	0.0171	0.0302	0.0915	0.1051	0.1441	0.0317	0.0769	0.1114	0.1849
WaAc, cm ⁴	0.0015	0.0046	0.0112	0.0206	0.0447	0.0019	0.0077	0.0154	0.0342
UL flammability rating	94V-0	94V-0	94V-0	94V-0	94V-0	94V-0	94V-0	94V-0	94V-0

* fill factor considered



- Standard geometries sizes 1 through 5 are gull wing style devices offering very low product profiles
- Standard geometries sizes 6 through 9 are J-lead style devices offering smaller product footprints but with increased product height

EPM DC-DC converters (non-isolated)

EPM12

- DOSA SMT package
- Programmable non-isolated DC-DC converter
- Short circuit protection and remote ON/OFF function
- Programmable output voltage from 0.9-5.5 Vdc @ 1 A
- Input voltages: up to 14 Vdc, output voltages up to 5.5 V, 1 A to 12 A

EPM78

- Switching regulator, non-isolated DC-DC converter
- 3-pin SIP package compatible w/ LM78xx linear regulator
- Input voltages: up to 32 Vdc, output voltages up to 15 V @ 1 A
- High efficiency



	Input voltage (Vdc)		Output voltage (Vdc)		Capacitance load (µF)	
	Min.	Max.	Min.	Max.	Min.	Max.
EPM12V1	3	14	0.9	5.5	-	200
EPM12V2	3	14.4	0.6	5.5	-	200
EPM78Vx	4.8	32	1.8	15	-	470

Tools

Eaton's electronics product selection tools



PARAMETRIC SEARCH

Drill down into the Eaton Electronics product database to find the right part for your application.



IC MATCHING

Find the Eaton Electronics parts called out on IC manufacturers' demo and evaluation boards.



CROSS REFERENCE

Find a cross to a competitor's product or to an alternate Eaton Electronics part number.



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