

INDUCTOR INFORMATIONS

NO. EK-079-0608

OUTLINE

Major characteristics of Ricoh DC/DC Converter are defined in combination with the usage of external parts. Among other things, the inductor gives much influence on the characteristics of DC/DC converters.

This document gives you some information on the inductors made by SUMIDA, Murata, TDK, and Taiyo-Yuden, and can be referenced when you choose inductors for Ricoh DC/DC Converters.

The definition of absolute maximum rating of the current, DC resistance, and others is specified by each manufacturer and different, not only that, specification might be changed. Therefore if you need the latest information, please contact each manufacturer.

Inductance Recommendation by Product Series

Inductance value recommendation depends on the input and the output of the DC/DC converters.

The values shown below are examples.

Function	Product Series name	Control Style	Driver	Oscillator Frequency fosc [kHz]	Maxduty		Inductance value [μH]
					VFM	PWM	
Step-up	RN5RKxx1A	VFM	Built-in	100	77%	-	100, 220
	RN5RKxx1B				55%		
	RN5RKxx2A				77%		
	RN5RYxx1	VFM	External	180	75%	-	27
	RN5RY202						27, 68
	R1210Nxx1						15
	R1210Nxx2	PWM	Built-in	100, 180	-	85%	100
	R1211x002A/B						27
	R1211x002C/D						10
	R1212D/R1215D						22
Step-down	R1221N/R1223N	VFM/ PWM or PWM only	External	300, 500	25%	100%	27
	R1224N/R1225N			180, 300, 500	35%		10 to 27
	R1232D			1000, 2250	-		1.5 to 4.7
	R1234D	500, 800	65%	10			
	R5210x	PWM	Built-in	800	-		10 to 22
	R5212D			1200			4.7
	R5220x			1200			4.7
Step-up/ Inverting	R1280D002A	PWM	External	700	-	External	6.8
	R1280D002B					90%	
	R1280D002C			200		External Adjustment	22
Step-up/ Step-down	R1282D002A	PWM	External	700	-	External	6.8
Step-up and down	RS5RM	PWM	Built-in/ External	50	-	80%	33 to 220
	RS5RJ	VFM		100	80%	-	

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ELECTRICAL CHARACTERISTICS (SUMIDA ELECTRIC CO., LTD.)

Series Name	Inductance (μ H)	Max. Current (I _{DC}) A	DC resistance (Max.) (R _{DC}) Ω	Size [mm] (Max.)		
				W	D	H
CLS4D09	4.7	0.80	0.185	4.9	4.9	1.0
	6.8	0.63	0.260			
	10	0.50	0.370			
	15	0.37	0.580			
	22	0.30	0.910			
CLS4D11	4.7	0.80	0.180	4.9	4.9	1.2
	6.8	0.70	0.220			
	10	0.60	0.310			
	22	0.40	0.710			
CDRH3D16	2.2	1.20	0.072	4.0	4.0	1.8
	4.7	0.90	0.105			
	6.8	0.73	0.170			
	10	0.55	0.210			
	22	0.40	0.430			
CDRH2D18/LD	2.2	0.85	0.041	3.2	3.2	2.0
	4.7	0.63	0.078			
	6.8	0.52	0.106			
	10	0.43	0.180			
	22	0.30	0.320			
CDPH4D19F	10	0.80	0.065	5.1	5.1	2.0
	22	0.54	0.135			
CDRH103R	10	2.40	0.059	10.3	10.5	3.1
	22	1.20	0.143			
	68	0.68	0.429			
	100	0.56	0.683			
CDRH104R	10	3.80	0.035	10.3	10.4	4.0
	22	2.50	0.073			
	68	1.42	0.213			
	100	1.25	0.304			
	220	0.70	0.756			
CR54	10	1.44	0.10	5.6	6.1	4.85
	22	1.11	0.18			
	68	0.61	0.46			
	100	0.52	0.70			
CR105	10	2.60	0.06	9.5	10.4	5.8
	22	1.95	0.10			
	68	1.11	0.22			
	100	0.97	0.35			
	220	0.66	0.73			

Non-shield type: CR Series, CLS Series

Shield type: CDRH Series, CDPH Series

SALES OFFICES

- SUMIDA ELECTRIC CO., LTD.

3-3-6, Ningyocho, Chuo-ku, Tokyo 103-8580, Japan

TEL: +81-3-3667-3301 FAX: +81-3-3667-3456

URL: <http://www.sumida.com/>

ELECTRICAL CHARACTERISTICS (MURATA)

Series Name	Inductance (μ H)	Max. Current (I _{DC}) A	DC resistance (R _{DC}) Ω	Size [mm]		
				W	D	H
LQM31P	1.5	1.000	0.140	3.2	1.6	0.85
	2.2	0.900	0.190			
LQH2MC_02	4.7	0.300	0.800	2.0	1.6	0.9
	10	0.225	1.000			
	22	0.185	2.100			
LQH2MC_52	4.7	0.335	0.910	2.0	1.6	0.65
	10	0.200	2.270			
LQH32C_53	2.2	0.790	0.097	3.2	2.5	1.55
	4.7	0.650	0.150			
	6.8	0.540	0.250			
	10	0.450	0.300			
LQH55D	10	1.700	0.093	5.7	5.0	4.7
	15	1.400	0.15			
	22	1.200	0.19			
	68	0.640	0.67			
	100	0.560	0.86			
LQH66S	10	1.600	0.036	6.3	6.3	4.7
	15	1.300	0.069			
	22	1.100	0.087			
	68	0.600	0.29			
	100	0.520	0.36			
	220	0.350	0.79			

Non-Shield type: LQH32C_53, LQH31C, LQH43C, LQH55D

Shield Type: LQH66S

SALES OFFICES

- International Sales Dept.
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URL: <http://www.murata.co.jp/>

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ELECTRICAL CHARACTERISTICS (TDK)

Series Name	Inductance (μH)	Max. Current (I_{dc}) A	DC resistance (R_{dc}) Ω	Size [mm]		
				W	D	H
VLP5610	2.7	1.05	0.17	5.6	5.8	1.0
	4.7	0.90	0.24			
	6.8	0.80	0.30			
	10	0.70	0.45			
VLF3010	2.2	1.00	0.12	2.6	2.8	1.0
	3.3	0.87	0.17			
	4.7	0.70	0.28			
	6.8	0.61	0.39			
VLF4012	2.2	1.50	0.087	3.7	3.5	1.2
	3.3	1.30	0.120			
	4.7	1.10	0.160			
	6.8	0.96	0.230			
	10	0.80	0.350			
SLF6025	10	1.00	0.0573	6.0	6.0	2.5
	15	0.88	0.0850			
	22	0.73	0.1220			
	68	0.42	0.3700			
	100	0.33	0.5000			
SLF7030	10	1.30	0.053	7.0	7.0	3.0
	15	1.00	0.084			
	22	0.86	0.110			
	68	0.49	0.310			
	100	0.35	0.450			
SLF10145	10	2.5	0.0364	10.1	10.1	4.5
	15	2.2	0.0472			
	22	1.9	0.0591			
	68	1.2	0.1400			
	100	1.0	0.2000			
SLF12575	10	5.5	0.0156	12.5	12.5	7.5
	15	4.7	0.0184			
	22	4.0	0.0263			
	68	2	0.0778			

Non-Shield type: VLP5610

Shield type: Except VLP5610

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- TDK CORPORATION

13-1, Nihonbashi 1-chome, Chuo-ku Tokyo 103-8272, Japan

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URL: <http://www.tdk.co.jp/>

ELECTRICAL CHARACTERISTICS (Taiyo-Yuden)

Series Name	Inductance (μH)	Max. Current (I_{DC}) A	DC resistance (R_{DC}) Ω	Size [mm]		
				W	D	H
NR3010	2.2	1.10	0.095	3.0	3.0	1.0
	3.3	0.87	0.140			
	4.7	0.75	0.190			
	6.8	0.61	0.300			
	10	0.50	0.450			
CBL2012	10	0.205	1	2.0	1.2	1.0
NR8040	10	3.1	0.034	8.0	8.0	4.0
	22	2.5	0.045			

SALES OFFICES

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