

RAA306012 Evaluation Board Rev1.02 BOM (RTK0EM00F0B00022BJ)

No	Parts Name	Parts Designator		Quantity		Description	Manufacturer	Note
	Item	Mount	Unmount	Mount	Unmount	Part Number (Product Spec)		
1	RAA306012	U1	-	1	-	RAA306012GNP	Renesas	
2	Comparator	CMP301	-	1	-	NJM2903CRB1	JRC	
						UPC277MP-KAA	Renesas	Alternate parts
						BA82903YFVM-C	ROHM	Alternate parts
3	Amplifier (phase current detection)	AMP301,AMP302	-	2	-	READ2302GSP	Renesas	
						READ2304GSP	Renesas	Alternate parts
4	3.3VLDO	U302	-	1	-	ISL9005AIRNZ-T	Renesas	
5	5.0VLDO	U301	-	1	-	NCP781BMN050TAG	ON Semiconductor	
6	MOSFET	Q1,Q2,Q3,Q4,Q5,Q6	-	6	-	TPH12008NH (80V,24A)	TOSHIBA	Default Part
						TPH7R506NH (60V,22A)	TOSHIBA	Compatible Parts (Change by application specifications.)
						TPH9R506PL (60V,34A)	TOSHIBA	
						TPH7R006PL (60V,60A)	TOSHIBA	
						TPH2R506PL (60V,100A)	TOSHIBA	
						TPH14006NH (60V,34A)	TOSHIBA	
						TPH1R306PL (60V,100A)	TOSHIBA	
7	FUSE	FU1	-	1	-	8020.0607.H(30A)	Schurter Inc.	Default Part
						8020.0602.H(10A)	Schurter Inc.	Compatible Parts (Change by application specifications.)
						8020.0603.H(12A)	Schurter Inc.	
						8020.0604.H(15A)	Schurter Inc.	
						8020.0605.H(20A)	Schurter Inc.	
						8020.0606.H(25A)	Schurter Inc.	
						8020.0608.H(40A)	Schurter Inc.	
						8020.0609.H(50A)	Schurter Inc.	
8	Fuse terminal	TB1,TB2	-	2	-	01020071Z	Littelfuse	
9	LED	LED0,LED1,LED2,LED3,LED4,LED5,LED6	-	7	-	SML-311UTT86	ROHM	
10	Coil (33uH/>2A)	L1	-	1	-	SPM6545VT-330M-D	TDK	
						XAL6060-333MEC	Coilcraft	Alternate parts
11	Power terminal (RED)	J1,J2	-	2	-	TM052_RED	MSK	
12	Power terminal (BLACK)	J3,J4	-	2	-	TM052_BLACK	MSK	
13	Motor terminal	U,V,W	-	3	-	63849-1	TEConnectivity	
						63824-1	TEConnectivity	Alternate parts
14	Connector (1*2) SMD	JP101,JP102,JP103,JP301,JP302,JP303,JP304	-	7	-	TSM-103-01-L-SV	SAMTEC	
15	Connector (1*3) SMD	-	TP_UART,TP_I2C	-	2	A2-4PA-2.54DSA	HIROSE	
16	Connector (1*4)	-	CNC	-	1	TSW-104-07-L-S	SAMTEC	
17	Connector (1*4) with guide	-	CN_UART,CN_I2C	-	2	B4B-XH-A(LF)(SN)	JST	
18	Connector (1*5)	-	TP_VOL	-	1	A2-5PA-2.54DSA	HIROSE	
19	Connector (1*5) with guide	-	CN_VOL	-	1	B5B-XH-A(LF)(SN)	JST	
20	Connector (1*6)	-	TP_SPI,TP_HALL	-	2	A2-6PA-2.54DSA	HRS	
21	Connector (1*6) with guide	CN_HALL	CN_SPI	1	1	B6B-XH-A(LF)(SN)	JST	
22	Connector (1*8)	-	CN_ANA,TP_ANA, CN_DIGI1,TP_DIGI1, CN_DIGI2,TP_DIGI2, CN_DIGI3,TP_DIGI3, CN_LED,TP_LED	-	10	A2-8PA-2.54DSA	HRS	
23	Connector (2*4)	ICS_SEL	-	1	-	TSM-104-01-L-DV	SAMTEC	
24	Connector (2*10)	-	CN_EXT_MOS	-	1	A1-20PA-2.54DSA	HRS	
25	Connector (2*20)	CNA,CNB	-	2	-	30340-6002HB	3M	
26	Chip capacitor (33pF/>10V/0603m-1005m)	C302,C308,C314	-	3	-	GRM0335C1E330JA01D(0603m)	Murata	
27	Chip capacitor (100pF/>10V/0603m-1005m)	C304,C310,C316	-	3	-	GRM0335C1E101JA01(0603m)	Murata	
28	Chip capacitor (330pF/>10V/0603m-1005m)	C15,C16,C17	-	3	-	GRM0335C1E331JA01D(0603m)	Murata	

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	Item	Mount	Unmount	Mount	Unmount	Part Number (Product Spec)		
29	Chip capacitor (1000pF/>10V/0603m-1005m)	C319,C320,C330,C331,C332	-	5	-	GRM0335C1E102JA01D(0603m)	Murata	
30	Chip capacitor (2200pF/>10V/0603m-1005m)	C1	C2,C301,C303,C305,C306, C307,C309,C311,C312,C313, C315,C317,C318	1	13	GRM033R61A222KA01D(0603m)	Murata	
31	Chip capacitor (0.01uF/>10V/0603m-1005m)		C12,C13,C14,C328	-	4	GRM033R61A103KA01D(0603m)	Murata	
32	Chip capacitor (0.022uF/>10V/0603m-1005m)	C351,C352,C353	-	3	-	GRM033R61A223KE84D(0603m)	Murata	
33	Chip capacitor (0.1uF/>10V/0603m-1005m)	C101,C102,C103,C104,C105, C106,C321,C322,C323	C327	9	1	GRM033R61E104KE14(0603m)	Murata	
34	Chip capacitor (1uF/>10V/1005m-1608m)	C325,C326,C329	-	3	-	MCASL105SB5105KFNA01(1005m)	YUDEN	
						MCASL105SB5105KFNA1J(1005m)	YUDEN	
						MMASL105SB5105KFNA01(1005m)	YUDEN	
35	Chip capacitor (10uF/>10V/1608m-2012m)	-	C29	-	1	GRM188D71A106MA73(1608m)	Murata	
36	Chip capacitor (22uF/>10V/1608m-2012m)	C18,C19	-	2	-	GRM21BD71A226ME44(2012m)	Murata	
37	Chip capacitor (4.7uF/25V/1005m-1608m)	C9	-	1	-	GRM188C81E475KE11(1608m)	Murata	
38	Chip capacitor (10uF/25V/2012m-3225m)	C3	-	1	-	CGA4J1X7S1E106K125AC(2012m)	Murata	
39	Chip capacitor (1000pF/100V/1005m-1608m)	-	C28	-	1	GRM1885C2A102JA01(1608m)	Murata	
40	Chip capacitor (4700pF/100V/1005m-1608m)	-	C21,C22,C23	-	3	GRM155R72A472KA01(1005M)	Murata	
41	Chip capacitor (0.1uF/100V/1005m-1608m)	C5,C24	-	2	-	GRM155R62A104KE14(1005m)	Murata	
42	Chip capacitor (0.22uF/100V/1608m-2012m)	C4	-	1	-	GRM21AR72A224KAC5K(2012m)	Murata	
43	Chip capacitor (1uF/>100V/2012m-3216m)	C324	-	1	-	GRM21BC72A105KE01L(2012)	Murata	
44	Chip capacitor (10uF/100V/3216m-3225m)	C6,C7,C25	C26,C27	3	2	GRM32EC72A106KE05(3225m)	Murata	
45	Chip capacitor (10uF/100V/3225m-5750m)	-	C8	-	1	GRM32EC72A106KE05(3225m)	Murata	
46	Electrolytic capacitor (220uF/100V) SMD	C10	-	1	-	EEEFK2A221AM	Panasonic	
						EEVFK2A221M	Panasonic	Alternate parts
						UCD2A221MNQ1MS	Nichicon	Alternate parts
47	Electrolytic capacitor (220uF/100V) DIP	-	C11	-	1	EEUFS2A221	Panasonic	
48	Chip resistor(0Ω/1005m-1608m)	R15,R16,R17,R18,R19, R20,R21,R22,R34,R35, R36,R37,R42,R54,R60, R61,R62,R63,R64,R65, R66,R67,R68,R69,R70, R71,R72,R73,R74,R75, R76,R77,R78,R79,R80, R81,R82,R83,R84,R85, R86,R87,R99,R100,R101, R102,R103,R104,R105,R107, R108,R109,R110,R111,R112, R113,R114,R115,R116,R117, R118,R119,R120,R121,R122, R123,R124,R125,R126,R127, R128,R129,R130,R131,R132, R133,R134,R135,R136,R137, R138,R139,R140,R141,R142, R143,R144,R145,R146,R147, R148,R149,R150,R151,R153, R161,R162,R163,R164,R165, R166,R175,R335,R336,R337, R338,R339,R340,R341,R364, R366,R368,R370,R371,R374	R23,R24,R25,R26,R27, R52,R58,R59,R88,R89, R90,R91,R92,R93,R94, R95,R96,R97,R98,R106, R152,R155,R156,R157,R158, R351,R354,R357,R360,R361, R362,R363,R365,R367,R369, R372	115	36	RK73Z1JTTD(1608m)	KOA	
						RC0603JR-130RL	YAGEO	
49	Chip resistor(50m/6432m-10052m/3W)	SR1,SR2,SR3,SR4	-	4	-	CRA2512-FZ-R050ELF(50m/6432m/3W)	Bourns Inc.	
	Chip resistor(50m/6432m-10052m/3W)	-	SR1,SR2,SR3,SR4	-	4	WSL3921L5000FEA(0.5mΩ/10052m/3W)	Vishay	Alternate parts
50	Chip resistor(5.1Ω/1005m-1608m)	R6,R7,R8	-	3	-	RK73B1JTTD5R1J(1608)	KOA	
51	Chip resistor(100Ω/1005m-1608m)	R322,R323	-	2	-	RK73B1ETTP101J(1005m)	KOA	
52	Chip resistor(200Ω/1005m-1608m)	R307,R314,R321,R332,R333, R334	-	6	-	RK73B1ETTP201J(1005m)	KOA	

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	Item	Mount	Unmount	Mount	Unmount	Part Number (Product Spec)		
53	Chip resistor(510Ω/1005m-1608m)	R176	-	1	-	RK73B1ETTP511J(1005m)	KOA	
54	Chip resistor(1kΩ/1005m-1608m)	R28,R29,R30,R177,R192, R193	R55,R56,R57,R172,R173, R174	6	6	RK73B1ETTP102J(1005m) RC0402JR-071KL(1005m)	KOA YAGEO	
55	Chip resistor(1.8kΩ/1005m-1608m)	R306,R313,R320	-	3	-	RK73B1ETTP182J(1005m)	KOA	
56	Chip resistor(2kΩ/1005m-1608m)	R197,R303,R304,R310,R311, R317,R318,R352,R355,R358 R194,	-	11	-	RK73B1ETTP202J(1005m)	KOA	
57	Chip resistor(3.48kΩ/1005m-1608m/1%)	R3	-	1	-	RK73H1ETTP3481F(1005m) ERJ-2RKF3481X(1005m)	KOA Panasonic	Alternate parts
58	Chip resistor(6.8kΩ/1005m-1608m)	R53,R180,R181,R182,R183, R184,R185	-	7	-	RK73B1ETTP682J(100m)	KOA	
59	Chip resistor(10kΩ/1005m-1608m)	R31,R32,R33,R186,R187, R189,R190,R302,R309,R316, R324,R325,R326,R327,R328, R329,R330,R331	R170,R171,R188,R191	18	4	RK73B1ETTP103J(1005m)	KOA	
60	Chip resistor(20kΩ/1005m-1608m)	R179,R301,R305,R308,R312, R315,R319	-	7	-	RK73B1ETTP203J(1005m)	KOA	
61	Chip resistor(39kΩ/1005m-1608m/1%)	R1	-	1	-	RK73H1ETTP3902F(1005m) ERJ-2RKF3902X(1005m)	KOA Panasonic	Alternate parts
62	Chip resistor(48.7kΩ/1005m-1608m/1%)	R2	-	1	-	RK73H1ETTP4872F(1005m) ERJ-2RKF4872X(1005m)	KOA Panasonic	Alternate parts
63	Chip resistor(91kΩ/1005m-1608m/1%)	R5	-	1	-	RK73H1ETTP9102F(1005m) ERJ-2RKF9102X(1005m)	KOA Panasonic	Alternate parts
64	Chip resistor(100kΩ/1005m-1608m)	R9,R10,R11,R12,R13, R14	-	6	-	RK73B1ETTP104J(1005m)	KOA	
65	Chip resistor(160kΩ/1005m-1608m/1%)	R4	-	1	-	RK73H1ETTP1603F(1005m) ERJ-2RKF1603X(1005m)	KOA Panasonic	Alternate parts
66	Chip resistor(470KΩ/1005m-1608m)	R178,R195,R196,R353,R356, R359,R373	-	7	-	RK73B1ETTP474J(1005m)	KOA	
67	Potentiometer (10Kohm)	VR101	-	1	-	RK09L114001T	ALPS	
68	Variable resistor (10Kohm)	VR301	-	1	-	ST4ETB103	Nidec Copal	
69	Thermistor	Z101	-	1	-	NXFT15XH103FEAB050 NXFT15XH103FEAB025	MIRATA MIRATA	
70	Toggle switch	SW101,SW102	-	2	-	ATE1D-2M3-10-Z	Nidec Copal	
71	Varistor diode	-	VS1	-	1	V120MLA1210N	Littelfuse	
72	Zener diode	ZD1,ZD2,ZD3,ZD4,ZD5, ZD6	-	6	-	MM5Z18V	Onsemi	
73	Zener diode (13V, 1W)	-	ZD7	-	1	SML4743-E3/61 1SMB5928BT3G	Vishay ON Semiconductor	Alternate parts
74	Diode (single, 80V or100V/2A)	D2,D3,D4	-	3	-	B280-13-F(80V) B2100-13-F(100V)	Diodes Incorporated Diodes Incorporated	Alternate parts
75	Diode (series,SOT-323,>150mA,>20V)	D101,D102,D301,D302,D303, D304,D305,D306,D307,D308, D309,D351,D352,D353	-	14	-	BAV99WT1G BAV99W-7-F BAV99W,115	ON Semiconductor DiodesZetex Nexperia	Alternate parts Alternate parts
76	Diode (0.6V 100V/2A)	D1	-	1	-	STPS5H100AF NRVTSA4100E	STMicroelectronics ON-SEMI	Alternate parts
77	Ferrite bead	FB1	-	1	-	MPZ1608S102ATA00	TDK	
78	Test terminal	TP_GND1,TP_GND2,TP_GND3,TP_GND4	-	4	-	JP-1	MAC8	
79	Test terminal	-	TP1,TP2,TP_49_S	-	3	LC-22-G	MAC8	
80	Potentiometer knob	VR101	-	1	-	1101	Davies Molding	
81	Jumper cap	JP101,JP102,JP103,JP301,JP302, JP303,ICS_SEL(x4)	-	10	-	SNT-100-BK-T 251-8503 HIF3GA-2.54SP	SAMTEC RS-PRO HIROSE	Alternate parts Alternate parts

Revision History

Revision	Date	Description
1.00	Oct.11.2023	・Initial release