

Renesas Electronics Corporation

RAJ306102 Evaluation Board Rev1.01 BOM (RTK0EML2J0D01020BJ)

No	Parts Name	Parts Designator		Quantity		Description	Manufacturer	Note
	Item	Mount	Unmount	Mount	Unmount	Part Number (Product Spec)		
1	RAJ306102	U1	-	1	-	RAJ306102	Renesas	
2	Comparator	CMP301	-	1	-	UPC277MP-KAA	Renesas	
						NJM2903CRB1	JRC	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,U502	-	2	-	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
						TPH9R506PL(60V,34A)	TOSHIBA	(Change by application specifications.)
						TPH7R006PL(60V,60A)	TOSHIBA	
						TPH2R506PL(60V,100A)	TOSHIBA	
						TPH14006NH(60V,34A)	TOSHIBA	
						TPH1R306PL(60V,100A)	TOSHIBA	
7	Fuse (6.3x32m)	FU1	-	1	-	8020.0607.H(30A)	Schurter Inc.	Default Part
						8020.0602.H(10A)	Schurter Inc.	Compatible Parts
						8020.0603.H(12A)	Schurter Inc.	(Change by application specifications.)
						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	JP104,JP501	-	2	-	TSM-102-01-L-SV	SAMTEC	
15	Connector (1*3) SMD	JP101,JP102,JP103,JP301,JP302,JP303,JP304,JP502,JP503	-	9	-	TSM-103-01-L-SV	SAMTEC	
16	Connector (1*4)	-	TP_UART,TP_I2C	-	2	A2-4PA-2.54DSA	HRS	
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	HRS	
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)	-	TP_DIGI1,CN_DIGI1,TP_LED,TP_ANA,CN_LED,CN_ANA	-	6	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	Chip capacitor (33pF/>10V/0603m-1005m)	C302,C308,C314	-	3	-	GRM0335C1E330JA01D(0603m)	Murata	
26	Chip capacitor (100pF/>10V/0603m-1005m)	C304,C310,C316	-	3	-	GRM0335C1E101JA01(0603m)	Murata	
27	Chip capacitor (330pF/>10V/0603m-1005m)	C15,C16,C17	-	3	-	GRM0335C1E331JA01D(0603m)	Murata	
28	Chip capacitor (1000pF/>10V/0603m-1005m)	C319,C320,C330,C331,C332	-	5	-	GRM0335C1E102JA01D(0603m)	Murata	
29	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	

Renesas Electronics Corporation

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	Item	Mount	Unmount	Mount	Unmount	Part Number (Product Spec)		
30	Chip capacitor (0.01uF/>10V/0603m-1005m)	-	C12,C13,C14,C511,C328	-	5	GRM033R61A103KA01D(0603m)	Murata	
31	Chip capacitor (0.022uF/>10V/0603m-1005m)	C351,C352,C353	-	3	-	GRM033R61A223KE84D(0603m)	Murata	
32	Chip capacitor (0.1uF/>10V/0603m-1005m)	C101,C102,C103,C104,C105, C106,C321,C322,C323,C401	C327,C510	10	2	GRM033R61E104KE14(0603m)	Murata	
33	Chip capacitor (1uF/>10V/1005m-1608m)	C325,C326,C329,C403,C406, C509,C512	-	7	-	MCASL105SB5105KFNA01(1005m) MCASL105SB5105KFNA1J(1005m) MMASL105SB5105KFNA01(1005m)	YUDEN	
34	Chip capacitor (10uF/>10V/1608m-2012m)	-	C29	-	1	GRM188D71A106MA73(1608m)	Murata	
35	Chip capacitor (22uF/>10V/1608m-2012m)	C18,C19	-	2	-	GRM21BD71A226ME44(2012m)	Murata	
36	Chip capacitor (4.7uF/25V/1005m-1608m)	C9	-	1	-	GRM188C81E475KE11(1608m)	Murata	
37	Chip capacitor (10uF/25V/2012m-3225m)	C3	-	1	-	CGA4J1X7S1E106K125AC(2012)	TDK	
38	Chip capacitor (1000pF/100V/1005m-1608m)	-	C28	-	1	GRM1885C2A102JA01(1608m)	Murata	
39	Chip capacitor (4700pF/100V/1005m-1608m)	-	C21,C22,C23	-	3	GRM155R72A472KA01(1005m)	Murata	
40	Chip capacitor (0.1uF/100V/1005m-1608m)	C5,C24	-	2	-	GRM155R62A104KE14(1005m)	Murata	
41	Chip capacitor (0.22uF/100V/1608m-2012m)	C4	-	1	-	GRM21AR72A224KAC5K(2012m)	Murata	
42	Chip capacitor (1uF/>100V/2012m-3216m)	C324	-	1	-	GRM21BC72A105KE01L(2012m)	Murata	
43	Chip capacitor (10uF/100V/3216m-3225m)	C6,C7,C25	C26,C27	3	3	GRM32EC72A106KE05(3225m)	YUDEN	
44	Chip capacitor (10uF/100V/3225m-5750m)	-	C8	-	1	GRM32EC72A106KE05(3225m)	YUDEN	
45	Electrolytic capacitor (220uF/100V) SMD	C10	-	1	-	EEEFK2A221AM EEVFK2A221M UCD2A221MNQ1MS	Panasonic Panasonic Nichicon	 Alternate parts Alternate parts
46	Electrolytic capacitor (220uF/100V)DIP	-	C11	-	1	EEUFS2A221	Panasonic	
47	Chip resistor (0Ω/1005m-1608m)	R15,R16,R23,R24,R25, R26,R27,R42,R54,R79,	R17,R18,R19,R20,R21, R22,R34,R35,R36,R37,	83	36	RK73Z1JTDD(1608m) RC0603JR-130RL	KOA YAGEO	Alternate parts
48	Chip resistor (50m/6432m-10052m/3W)	SR1,SR2,SR3,SR4	-	4	-	CRA2512-FZ-R050ELF(50m/6432m/3W)	Bourns Inc.	
49	Chip resistor (5.1Ω/1005m-1608m)	R6,R7,R8	-	1	-	RK73B1JTDD5R1J(1608m)	KOA	
50	Chip resistor (100Ω/1005m-1608m)	R322,R323	-	2	-	RK73B1ETTP101J(1005m)	KOA	
51	Chip resistor (200Ω/1005m-1608m)	R307,R314,R321,R332,R333, R334	-	6	-	RK73B1ETTP201J(1005m)	KOA	
52	Chip resistor (300Ω/1005m-1608m)	R497	-	1	-	RK73B1ETTP301J(1005m)	KOA	
53	Chip resistor (510Ω/1005m-1608m)	R176	-	1	-	RK73B1ETTP511J(1005m)	KOA	
54	Chip resistor (1kΩ/1005m-1608m)	R28,R29,R30,R177,R192, R193,R493,R494	R55,R56,R57,R173,R174	8	5	RK73B1ETTP102J(1005m) RC0402JR-071KL (1005m)	KOA YAGEO	Alternate parts
55	Chip resistor (1.8kΩ/1005m-1608m)	R306,R313,R320	-	3	-	RK73B1ETTP182J(1005m)	KOA	
56	Chip resistor (2kΩ/1005m-1608m)	R194,R197,R303,R304,R310, R311,R317,R318,R352,R355, R358	-	11	-	RK73B1ETTP202J(1005m)	KOA	
57	Chip resistor (3.48kΩ/1005m-1608m/1%)	R3	-	1	-	RK73H1ETTP3481F(1005m)	KOA	
58	Chip resistor (6.8kΩ/1005m-1608m)	R53,R180,R181,R182,R183, R184,R185	-	7	-	RK73B1ETTP682J(1005m)	KOA	

Renesas Electronics Corporation

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59	Chip resistor (10kΩ/1005m-1608m)	R31,R32,R33,R186,R187, R189,R190,R302,R309,R316, R324,R325,R326,R327,R328, R329,R330,R331,R471,R495, R496	R171,R188,R191	21	3	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)	R1	-	1	-	RK73B1ETTP393J(1005m)	KOA	
						RK73H1ETTP3902F(1005m)	KOA	Alternate parts
						ERJ-2RKF3902X(1005m)	Panasonic	Alternate parts
62	Chip resistor (48.7kΩ/1005m-1608m/1%)	R2	-	1	-	RK73H1ETTP4872F(1005m)	KOA	
						ERJ-2RKF4872X(1005m)	Panasonic	Alternate parts
63	Chip resistor (91kΩ/1005m-1608m/1%)	R5	-	1	-	RK73H1ETTP9102F(1005m)	KOA	
						ERJ-2RKF9102X(1005m)	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)	KOA	
						ERJ-2RKF1603X(1005m)	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	Murata	
						NXFT15XH103FEAB025	Murata	Alternate parts
70	Push switch	S401	-	1	-	SKRPABE010	ALPS	
71	Toggle switch	SW101,SW102	-	2	-	ATE1D-2M3-10-Z	Nidec Copal	
72	Varistor diode	-	VS1	-	1	V120MLA1210N	Littelfuse	
73	Zener diode	ZD1,ZD2,ZD3,ZD4,ZD5,ZD6	-	6	-	MM5Z18V	Onsemi	
74	Zener diode (13V, 1W)	-	ZD7	-	1	1SMB5928BT3G	ON Semiconductor	
						SML4743-E3/61	Vishay	Alternate parts
75	Diode (single, 80V or100V/2A)	D2,D3,D4	-	3	-	B280-13-F(80V)	Diodes Incorporated	
						B2100-13-F(100V)	Diodes Incorporated	Alternate parts
76	Diode (single)	D401,D501	-	2	-	PMEG2005EH,115	NXP	
77	Diode (series,SOT-323,>150mA,>20V)	D101,D102,D301,D302,D303, D304,D305,D306,D307,D308, D309,D351,D352,D353	-	14	-	BAV99WT1G	ON Semiconductor	
						BAV99W-7-F	DiodesZetex	Alternate parts
						BAV99W,115	Nexperia	Alternate parts
78	Diode (0.6V 100V/2A)	D1	-	1	-	STPS5H100AF	STMicroelectronics	
						NRV TSA4100E	ON Semiconductor	Alternate parts
79	Ferrite bead	FB1	-	1	-	MPZ1608S102ATA00	TDK	
80	Test terminal	TP_GND1,TP_GND2,TP_GND3, TP_GND4	-	4	-	JP-1	MAC8	
81	Test terminal	-	TP1,TP2,TP_65_S	-	3	LC-22-G	MAC8	
82	Potentiometer knob	VR101	-	1	-	1101	Davies Molding	
83	Jumper cap	JP101,JP102,JP103,JP104,JP301, JP302,JP303,JP304,JP501,JP502, JP503,ICS_SEL(x4)	-	15	-	SNT-100-BK-T	Samtec	
						251-8503	RS-PRO	Alternate parts
						HIF3GA-2.54SP	HIROSE	Alternate parts

Revision History

Revision	Date	Description
1.00	Oct.11.2023	·Initial release