



Title **RaToPUS AC/DC**

Size: **A4**

Number: **1**

Revision: **0.4**

Date: **22/08/2019**

Time: **11:58:26**

Sheet **1** of **1**

File: **C:\DIOT_RTPS\Design\RaToPUS\ratopus_v0.4\ratopus_v0.4.schdoc**

BE-CO-HT, CERN
Esplanade des Particules 1
1217 Meyrin, Switzerland



• B3
• FTG1

RaToPUS v0.4
230Vac/48Vdc PFC Buck Converter
August 2019, CERN, Geneva

FTG2 • B4 •

P9
P8
P7
P6
D6
D5
D4
D3
D2
D1

P5

P3

P2

P1

• B6 C1 C2 C3

C5

FH1 FTG3 • B5 •

P4

Comment	Description	Designator	Footprint	LibRef	Quantity
Family	Single Terminal Socket	B1, B2	ADVANCED-INTER_2527-3G	ADVANCED-INTER_2527-3G	2
Non Plated Hole	Single Terminal Socket	B3, B4, B5, B6	MTG270	NON-PLATED_HOLE2.7	4
680uF	Polarised capacitor	C1, C2, C3	CAPPR750-1650X1600	CAER_1000UF_25V_20%_PANASONIC_EEUFC1E102S	3
220nF	Non-polarised capacitor	C4	CAPR1500-700X1750X1350	CPPR_220NF_310VAC_20%_VISHAY_BFC233920224	1
1uF	Non-polarised capacitor	C5	CAPR3750-1700X4150X2900	CPPR_1UF_1000V_20%_WIMA_MKP4	1
220pF	Non-polarised capacitor	C7	CAPR500-450X720X600	CPPR_220PF_630V_1%_500-450X720X600	1
4.7uF	Non-polarised capacitor	C8	CAPC2012X135N	CC0805_4.7UF_16V_10%_X7R	1
22nF	Non-polarised capacitor	C9	CAPC2012X135N	CC0805_22NF_50V_10%_X7R	1
100nF	Non-polarised capacitor	C10	CAPC2012X135N	CC0805_100NF_50V_10%_X7R	1
10nF	Non-polarised capacitor	C11	CAPC2012X135N	CC0805_10NF_50V_10%_X7R	1
1nF	Non-polarised capacitor	C12	CAPC2012X135N	CC0805_1NF_50V_10%_X7R	1
2.2uF	Non-polarised capacitor	C13	CAPC2012X140N	CC0805_2.2UF_50V_10%_X7R	1
1uF	Non-polarised capacitor	C14	CAPC2012X110N	CC0805_1UF_50V_10%_X7R	1
1.5nF	Non-polarised capacitor	C15	CAPC2012X135N	CC0805_1.5NF_50V_10%_X7R	1
GBU6J	Bridge Rectifier 1+ 2AC 3AC 4-	D1	FAIRCHILD_GBU_V	GBU6B_v	1
FFPF10H60S	Diode	D2	TO-220-2-V	FFPF10H60S_v	1
Fuse Holder	Fuse Holder	FH1	FUSH_SCHURTER_OGN	FUSH_SCHURTER_OGN_0031.8211	1
Use only in PCB	Fiducial Target	FTG1, FTG2, FTG3	FIDUCIAL_TOP_C100-200	FIDUCIAL_TARGET_C100-200	3
Heat Sink 2 Pads	Heat Sink With 2 pads	HS1	HSINK_AAVID-THERMALLOY_530002B02500G_v	HSINK_AAVID-THERMALLOY_530002B02500G_v	1
MIC38HC45YM	BiCMOS 1A Current-Mode PWM Controllers	IC1	SOIC127P600X175-8N	MIC38HC45YM	1
Family	Connector 2 Male	J1, J3	PHOENIX_1755736	PHOENIX_1755736	2
PwrBlade	Thru-Hole, Lead 3.43mm, PowerBlade Right Angled Power Connector 3ACP 2P 24S 4P Contacts	J2	AMPHENOL_51939-667	AMPHENOL_51939-667	1
100uH	Inductor With Core	L1, L2	IND_BOURNS_2112-V-RC	IND_100UH_BOURNS_2112-V-RC	2
47uH	Inductor With Core	L3	INDAD2032-1200X520	IND_1MH_5%_TDK_B82144A	1
8R2	Resistor - 5%	R1	RES_WELWYN_WP2S	RWW_8R2_5%_2W_200PPM_WELWYN_WP2S	1
10	Resistor - 0.1%	R2	RESC2012X60N	R0805_10R_0.1%_0.1W_10PPM	1
47k	Resistor - 1%	R3	RESC2012X60N	R0805_47K_1%_0.125W_100PPM	1
0R1	Resistor - 1%	R4	RESM11670X254N	R4527_OR1_1%_2W_75PPM	1
1k	Resistor - 1%	R5	RESC3216X65N	R1206_1K_1%_0.25W_100PPM	1
0	Resistor	R6	RESC3216X65N	R1206_OR_JUMPER	1
100	Resistor - 1%	R7	RESC2012X60N	R0805_100R_1%_0.125W_100PPM	1
100k	Resistor - 0.1%	R8, R10, R11	RESC2012X60N	R0805_100K_0.1%_0.1W_10PPM	3
5k	Resistor - 0.01%	R9	RESC2013X64N	R0805_5K_0.01%_0.2W_0.2PPM_VISHAY_VSMIP	1
150k	Resistor - 0.1%	R12	RESC2012X60N	R0805_150K_0.1%_0.1W_10PPM	1
33k	Resistor - 0.1%	R13	RESC2012X60N	R0805_33K_0.1%_0.125W_25PPM	1
7k15	Resistor - 0.1%	R14	RESC2012X60N	R0805_7K15_0.1%_0.1W_10PPM	1
5k6	Resistor - 0.1%	R15	RESC2012X60N	R0805_5K6_0.1%_0.1W_25PPM	1
2k2	Resistor - 1%	R16	RESC2012X60N	R0805_2K2_1%_0.125W_100PPM	1
300	Resistor - 1%	R17	RESC2012X60N	R0805_300R_1%_0.125W_100PPM	1
10R	Thermistor NTC (Negative Temperature Coefficient)	RT1	THERM_TDK_B57236S0	THERM_NTC_10R_TDK_B57236S0100M000	1
IPA80R280P	N-CHANNEL MOSFET WITH DIODE	T1	TO-220-V	IRF630PBF_v	1
FMMT597	PNP Transistor	T2, T3	SO795P240X120-3N	FMMT597	2
BC817	NPN Transistor	T4	SO795P230X110-3N	BC817	1