

GXB172 Rev A2 BOM - Default 6V Output Operation

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www.loneoceans.com/labs/gxb172/

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Bill of Materials for GXB172 Rev A2 Single-Cell 50W Boost LED Flashlight Driver

<http://budgetlightforum.com/node/59137>

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DESCRIPTION	PART NUMBER	DESIGNATOR	FOOTPRINT	QNTY	ALTERNATE PART & NOTES	SUB FOR 12V+ OPERATION (e.g. XHP35)
47u 16V 1206 X5R	C3216X5R1C476M160AB	C3, C4	1206 Capacitor	2	C3216JB1E476M160AC	47u 25V 1206 - C3216JB1E476M160AC
68u 10V 1206 JB	C3216JB1A686M160AC	C1, C2	1206 Capacitor	2	C3216X5R1A686M160AC	
10-22u 6.3V 402	CL05A156MQ5Q6J8	C5	0402 Capacitor	1	CL05A226MQ5QUNC 22uF 6.3V, Can fit 603 if required	
4.7u 10V 402	ZRB15XR61A475KE01D	C6	0402 Capacitor	1	CL05A475MO5NUNC 16V 4.7uF	
6.8n 402	GRM155R71H682KA88D	C7	0402 Capacitor	1		
680p 402	CL05B681KB5NNNC	C8	0402 Capacitor	1		
10n 402	GRM155R71H103JA88D	C9	0402 Capacitor	1		
0.1u 402	CGA2B3X7R1H104K050BB	C10, C11, C12, C13	0402 Capacitor	4	C12 Optional if Eswitch not used	
1u 402	GRM155R6YA105KE11D	C14, C15, C16, C17, C18	0402 Capacitor	5	Solder 1MR in parallel with C18 if mode switching inconsistent	
Schottky Diode	SBRT05U20S3-7	D1	SOD323	1	PMEG2005AEA,115	
2.2uH 5.73mR 19.6A	XAL7070-222ME_	L1	XAL7070	1	Buy on Coilcraft.com, 2.2uH ok; Use 7030 for lower height	
10mR 805 0.5W	CRF0805-FZ-R010ELF	R1	0805 Resistor	1	WSLP0805R0100FEA - use 20mR or 25mR for 12V+ operation	20mR 0805 1% 0.5W - CRF0805-FZ-R020ELF
1k 402	<i>RC0402FR-071KL</i>	R3	0402 Resistor	1	R3 Optional if Eswitch not used	
4.7k 402	RC0402FR-074K7L	R5, R6, R7	0402 Resistor	3		
6.8k 402	RC0402FR-076K8L	R8	0402 Resistor	1		
10k 402	RC0402FR-0710KL	R3, R9, R10	0402 Resistor	3		
15k 402	RC0402FR-0715KL	R11	0402 Resistor	1		
47k 402	RC0402FR-0747KL	R2,R12	0402 Resistor	2		
75k 402	RC0402FR-0775KL	R13	0402 Resistor	1		165kR 0402 Resistor - RC0402FR-07165KL
360k 402	RC0402FR-07360KL	R14	0402 Resistor	1		
560R 402	<i>RC0402FR-07560RL</i>	R15	0402 Resistor	1	Bypass Resistor, Optional, depending if using with lighted tail	
21A Boost Converter	MP3431GL-P	U1	QFN13	1	MP3429GL-P is a pin-compatible substitute, choose cheaper one	
Atmel MCU	ATTINY841-MMH	U2	QFN20M2	1	ATTINY841-MMHR / QFN20 3mm	
Low Offset Op Amp	OPA333AIDCKR	U3	SC70-5	1	MAX9617AXT+T, but OPA333 is definitely better; OPA33 heat sensitive	
Digital Temperature IC	TMP103GYFFR	U4	DSBGA4 0.77mm	1	Requires GYFFR variant, do not sub otherwise addr is incorrect	
LDO 2.5V Regulator	TLV70025DCKR	U5	SC70-5	1	TPS71525DCKR	

* Parts are available on Digikey / Mouser, or choose similar component if item is out of stock - resistors should be 1% Thick / Thin Film, Capacitors X7R or X5R

* PCB available for order at: https://oshpark.com/shared_projects/AKnfvDHZ



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For more information, firmware and details, please visit loneoceans.com/labs/gxb172/. Enjoy!