

BoM for Linear PSU Rail

Component	Rail	Description	Value	12V Count	5V Count	3V3 Count	Total Count	Mouser Part No.	Package / Dimensions (Lead Spacing)	Other comments
J1-J6	All	250 Faston tab terminals		6	6	6	18	571-624091		Purchased 20 already
Pin connectors	All	TE Connectivity 40P breakaway header, gold		4	4	4	12	571-41029720		Purchased 40
C1	All	EPCOS film capacitor	10nF	1	1	1	3	871-B32529C103J	2.5x7.3mm (5mm)	
C2	All	EPCOS film capacitor	150nF	1	1	1	3	871-B32529C154J	2.5x7.3mm (5mm)	
C3-C5	12V	Mundorf M-Lytic AG polarised capacitors	10,000uF, 40 volt, ESR 19m	3			3	HiFi Collective	30x40mm (10mm)	
	5V	Mundorf M-Lytic AG polarised capacitors	22,000uF, 25 volt, ESR 14m		3		3	HiFi Collective	30x40mm (10mm)	
	3V3	Mundorf M-Lytic AG polarised capacitors	22,000uF, 25 volt, ESR 14m			3	3	HiFi Collective	30x40mm (10mm)	
C6	12V	Panasonic electrolytic capacitor, 35VDC	2200uF	1			1	667-EEU-FR1V222L	12.5x35mm (5mm)	
C7	12V	Panasonic electrolytic capacitor, 35VDC	270uF	1			1	667-EEU-FR1V271L	8x15mm (3.5mm)	
C8	All	Panasonic aluminium organic polymer capacitor, 16V, ESR 10m	470uF		1	1	3	667-16SEPC470M	10x13mm (5mm)	Purchased (check stock)
C9	12V	Panasonic aluminium electrolytic capacitor, 50VDC	180uF	1			1	667-EEU-FR1V181B	8x11.5mm (5mm)	
C10	All	Panasonic PPS film capacitor, 50V, 2%	0.1uF	1	1	1	3	667-ECH-U1H104GX9	3.3x4.8mm	Purchased (check stock)
C11	All	AVX tantulum capacitor, SMD 1210/3528, 35V, ESR 700m	4.7uF	1	1	1	3	581-TP5B475K035R0700	3.5x2.8mm	
C12		Panasonic aluminium organic polymer capacitor, 16V, ESR 22m	150uF	1	1	1	3	667-16SEPC150MD	8x7mm (3.5mm)	
C13		Panasonic aluminium organic polymer capacitor, 16V, ESR 10m	470uF	1	1	1	3	667-16SEPC470M	10x13mm (5mm)	Purchased (check stock)
C14		Panasonic aluminium organic polymer capacitor, 16V, ESR 10m	470uF			1	1	667-16SEPC470M	10x13mm (5mm)	Purchased (check stock)
C15		Nichicon aluminium electrolytic capacitor, 35V, SMD	2200uF	1	1		2	647-UCX1V222MNQ1M5		
Cy	12V	AVX ultra low ESR multilayer ceramic capacitor SMD 0805/2012	47p	1			1	581-08051U470FAT2A	2x1.25mm	
	5V	AVX ultra low ESR multilayer ceramic capacitor SMD 0805/2013	47p		1		1	581-08051U470FAT2A	2x1.25mm	
	3V3	Panasonic PPS film capacitor, SMD 0805/2012, 50V, 2%	100p			1	1	667-ECH-U1H101GX5	2x1.25mm	
Cy if Zobel	12V	INSERT ALT VALUES								
	5V	IF ZOBEL								
	3V3									
Cz	All	Panasonic PPS film capacitor, SMD 0805/2012, 50V, 2%	100p	1	1	1	3	667-ECH-U1H101GX5	2x1.25mm	Zobel alternative to R12
D1-D4	All	Fairchild Semi fast recovery rectifier diode 30A, 200V, surge 300A		4	4	4	12	512-FPPF30UP20STU		Purchased (check stock)
D5-D6	All	Diodes Incorporated genral purpose switching diode	1N4148	2	2	2	6	621-1N4148WS-F	SOD-323	
JFET	12V	Fairchild Semi JFET P-channel transistor	MMBF5460	1			1	512-MMBF5460	SOT-23	
R1-R2		Likely not needed					0			
R3-R5	All	Panasonic metal film resistors 3W 5%	0.47 Ohms	3	3	3	9	667-ERX-3FJR47	5.5x15.0mm	
R6	12V	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	100 Ohms	1			1	667-ERJ-8ENF1000V	3.2x1.6mm	
R7-R9	12V	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	34.8 Ohms	3			3	667-ERJ-8ENF34R8V	3.2x1.6mm	
R10	12V	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	499 Ohms	1			1	667-ERJ-8ENF4990V	3.2x1.6mm	
	5V	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	953 Ohms		1		1	667-ERJ-8ENF9530V	3.2x1.6mm	
	3V3	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	953 Ohms			1	1	667-ERJ-8ENF9530V	3.2x1.6mm	
R11	All	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	3.3k Ohms	1	1	1	3	667-ERJ-8ENF3301V	3.2x1.6mm	
R12	All	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	100 Ohms	1	1	1	3	667-ERJ-8ENF1000V	3.2x1.6mm	Gatestopper resistor. Potentially replaced by Cz and Rz.
	All	Vishay thick film resistors SMD 250mW	0 Ohms	1	1	1	3	71-CRCW1206-0-E3	3.2x1.6mm	If replaced by Zobel then need 0 Ohms jumper
R13		Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	1k Ohms	1	1	1	3	667-ERJ-8ENF1001V	3.2x1.6mm	
R14		Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	Calculate	1			1		3.2x1.6mm	
R15-R16	5V/3V3	Vishay thick film resistors SMD 250mW	0 Ohms		1		1	71-CRCW1206-0-E3	3.2x1.6mm	
		Vishay thick film resistors SMD 250mW	0 Ohms			1	1	71-CRCW1206-0-E3	3.2x1.6mm	
		Vishay thick film resistors SMD 250mW	0 Ohms		2	2	4	71-CRCW1206-0-E3	3.2x1.6mm	
Rx		Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	732 Ohms	1			1	667-ERJ-8ENF7320V	3.2x1.6mm	
		Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	1k Ohms		1		1	667-ERJ-8ENF1001V	3.2x1.6mm	
		Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	316 Ohms			1	1	667-ERJ-8ENF3160V	3.2x1.6mm	
Ry	12V	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	7.5k Ohms	1			1	667-ERJ-8ENF7501V	3.2x1.6mm	
	5V	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	7.5k Ohms		1		1	667-ERJ-8ENF7501V	3.2x1.6mm	
	3V3	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	4.7k Ohms			1	1	667-ERJ-8ENF4701V	3.2x1.6mm	
Ry if Zobel	12V	INSERT ALT VALUES								
	5V	IF ZOBEL								
	3V3									
Rz	All	Panasonic thick film resistors 1%, SMD 1206/3216, 250mW, 200V	47 Ohms	1	1	1	3	667-ERJ-8ENF47R0V	3.2x1.6mm	Zobel alternative to R12
OA1	All	Analog Devices ultralow distortion, ultralow noise, op amp	AD7978RZ	1	1	1	3	584-AD7978RZ	SOIC-8	
Q1-Q3	12V	NXP BJT PNP transistor	BC807-40	3			3	771-BC807-40-T/R	SOT-23	
Q4	All	Infineon MOSFET Optimus 3 power transistor	IPPO37N06L3G	1	1	1	3	726-IPPO37N06L3G	TO-220-3	Purchased
VREF	12V	Ti precision voltage reference 6.9V, max shunt current 15mA	LM329DZ	1			1	926-LM329DZ/NOPB	TO-92 through hole	
	5V	Ti precision voltage reference 2.5V 0.1%, rec shunt current 15mA	LM4040A-2.5		1		1	926-LM4040AIM325NOPB	SOT23	Purchased
	3V3	Ti precision voltage reference 2.5V 0.1%, rec shunt current 15mA	LM4040A-2.6			1	1	926-LM4040AIM325NOPB	SOT23	
Z1	12V	NXP Semi zener diode 10V	BZX84-B10	1			1	771-BZX84-B10215	SOT-23	
Z2	12V	Ti precision voltage reference 5V, rec shunt current 15mA	LM4040A-5	1			1	926-LM4040AIM3X50NPB	SOT-23	Purchased
LED1		Kingbright through hole red LED, 5V resistor	WP710A10ID5V	1	1	1	3	604-WP710A10ID5V	3mm	