

pmillett.com dual shunt-regulated bias supply

Qty	Value	Parts	Description	Notes
2	150uF 100V	C1, C8	Electrolytic cap, 150uF 100V, 5mm LS 13mm dia	Must be rated > max output voltage
3	0.1uF 250V	C2, C4, C6	Cap, film, 0.1uF 250VDC, 5mm LS	
2	NP	C3, C7	Not placed	If used must be rated for 200V
1	220uF 200V	C5	Electrolytic cap, 220uF 200V, 7.5mm LS 18mm dia	Must be rated > rectified input voltage
4	STPS1150	D1, D2, D4, D6	Diode, ultrafast, 150V 1A, STPS1150 or equiv	Must be rated > rectified input voltage
2	BZX55B15	D3, D5	Zener diode, 15V 400mW, BZX55B15 or equiv	
1	513102B02500G	HS1	Heatsink, Aavid 513102B02500G or equiv	1.375" x 0.5", pins spaced 1.00"
2	2N5551	Q1, Q4	NPN transistor, 2N5551	
2	FQPF9P25	Q2, Q3	MOSFET, P-channel TO220, FQPF9P25 or equiv	Suggest >250V in fully insulated TO-220FP package, or MUST be insulated from HS
2	3.3k 5W	R1, R10	Res, 3.3k 5W	Value depends on input & output voltage
2	1k	R2, R6	Res, 1k 1/4W	
2	240k	R3, R8	Res, 240k 1/4W	Value depends on output voltage range
2	68k	R4, R9	Res, 68k 1/4W	
2	7.5k	R5, R7	Res, 7.5k 1/4W	Value depends on output voltage range
2	5k	RV1, RV2	Pot, 1 turn 5k, 0.1" x 0.1" LS, BI PR5KLF or equiv	Value depends on output voltage range
1		TS1	3-position 0.200" Terminal Block	Can solder directly to PCB if desired
1		TS2	4-position 0.200" Terminal Block	Can solder directly to PCB if desired
2	TL431AZ	U1, U2	IC, voltage reference, TL431, TO92	