

	ZM's Iron-Pre Single Ended Bill of Materials - 2023 Boards - V10						
Gain							
QTY Per Board	Part	Description	Value	Rating	Pitch	Notes	Mouser P/N
2	R26, R27		220k				603-MFR-25FRF52-220K
2	R28, R29		330R				603-MFR-25FRF52-330R
2	J1, J3	2SK370				Schematic Notes 2SK170 2SK370 Is Fine	N/A
2	J2, J4	2SJ74					N/A
2	P3, P4	Multiturn Pot	20R		Bourns Y or W Or Equivalent	Schematic Notes 22R. 20R or 25R is Fine	652-3296W-1-200LF
8	C12, C13, C14, C15, C16, C17, C18, C19		220u	25V	5mm, 10mm Diam		647-UFG1E221MPM
2	T11, T13	BC546				B, C more common A is OK	512-BC546ABU
2	T12, T14	BC556				B, C more common A is OK	512-BC556ABU
4	R30, R31, R32, R33		8k2				603-MFR-25FRF52-8K2
2	TX1, TX2	Jensen JT-123-FLPCH					N/A
2	TX1a, TX2a	Eddor PC 600-600					N/A
2	TX1b, TX2b	Cinemag CMOQ-4LPC (HPC)					N/A
Power Supply - Shunt Regulator							
QTY Per Board	Part	Description	Value	Rating	Pitch	Notes	Mouser P/N
4	D1, D2, D3, D4	1N400X Diode		400V / 1A			863-1N4004RLG
2	CS, CS*	Transformer Snubber Cap			8mm	Use Quasimodo	
2	CS1, CS1*	Transformer Snubber Cap			8mm	Use Quasimodo	
2	RS, RS*	Transformer Snubber Resistor				Use Quasimodo	
1	NTC1	NTC Thermistor 'Ground Lift'	10R		5mm		871-B5723S0100M000
4	C1, C2, C3, C4		470u	35V	5mm, 14mm diam		647-UHE1V471MHDB
2	R1, R2		3k3				603-MFR-25FBF52-3K3
1	Q1	BD139	BD139			A, B, or C	512-BD13910S
1	Q2	BD140	BD140			A, B, or C	512-BD14010STU
2	R4, R5		18R			R3/R4 R5/R6 - Any combination in parallel from 6R5 to 9R	603-MFR-25FRF52-18R2
2	R3, R6		15R				603-MFR-25FRF52-15R
2	C5, C6		1u		5 or 15mm	MKC, MKP etc. Max Width - 6mm	80-R82ECA100AA70
5	C7, C8, C9, C10, C11		10u	50V	2.5mm, 5mm diam		867-ECA-1HM100I
2	R7, R10		33k				603-MFR-25FBF52-33K
2	R8, R9		4k7				603-MFR-25FRF52-4K7
2	P1, P2	Multiturn Pot	4k7 Pot		Bourns Y or W Or Equivalent		652-3296W-1-472LF
5	T1, T3, T5, T7, T9	BC546				B, C more common A is OK	512-BC546ABU
5	T2, T4, T6, T8, T10	BC556				B, C more common A is OK	512-BC556ABU
2	R11, R12		2k7				603-MFR-25FRF52-2K7
4	R13, R14, R15, R16		10k				603-MFR-25FRF5210K
2	R17, R18		820R				603-MFR-25FBF52-820R
2	R19, R20		100R				603-MFR-25FBF52-100R
2	R21, R22		8k2				603-MFR-25FRF52-8K2
2	R23, R24		330R				603-MFR-25FRF52-330R
2	U1, U2	LM336-25 2V5 Precision	LM336-25				595-LM336LPR-2-5
1	M1	IRF9510	IRF9510				844-IRF9510PBF
2	M2, M3	IRF510	IRF510				844-IRF510PBF
1	R25		6k8				603-MFR-25FRF52-6K8
1	ZD2		8V2	0.5W			771-BZX79-C8V2-T/R
1	ZD1		27V	0.5W			771-BZX79-C27113
1	ZD1*		16V	0.5W			771-BZX79-C16113
Switching							
QTY Per Board	Part	Description	Value	Rating	Pitch	Notes	Mouser P/N
5	K1-K5	24 VDC Non Latching Relay				Use ZD1	817-RY-24W-K
5	K1*-K5*	12 VDC Non Latching Relay				Use ZD1*	817-RY-12W-K
5	D5, D6, D7, D8, D9		1N4148				512-1N4148
Additional / Mechanical							
QTY Per Board	Part	Description	Value	Rating	Pitch	Notes	Random Part Number
	Power Switch / IEC / Fuse Holder						
	Rotary Switch	Input switch matching Twister PCB				Use Lorlin 10SM160 for perfect Twister board fit.	
	HS1, HS2, HS3*	Heatsinks for Q1, Q2, and M3*				Must be Make Before Break	10SM160
						HS3 only if 12V relay is used	
	Heatsink Hardware	Thermal Transfer Mounting				Floating Sinks	
	RCAs - Left					No Electrical Isolation Required	
	RCAs - Right						
	Knobs						
	Volume Pot					10k-25k based on Rout for source(s)	
	Chassis						
	Vertical Mount for Pot						