mEZS84801A

48V, 12W, PoE Power Supply, IEEE 802.3af Compliant

Do-It-Yourself Option Available

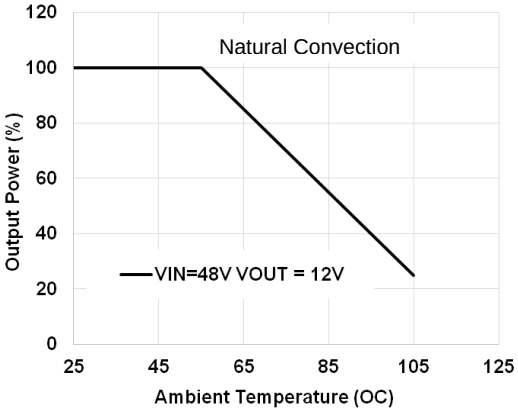
FEATURES

- 37V to 57V PSE Input
- 12V Output Voltage
- 1A Load Current
- No Optocoupler Feedback
- Over-Current Protection
- Over-Temperature Protection
- Over-Voltage Protection
- Minimal External Components

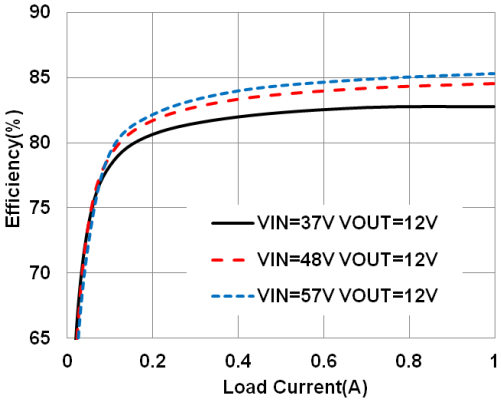
ORDERING INFORMATION

Part Number	Input Voltage (V)	Output Voltage (V)	Output Current (A)	Efficiency
MEZS84801A	37 - 57	12	1	Up to 85%

Power Derating
V_{IN} = 48V, V_{OUT} = 12V



Efficiency vs. Load Current
V_{IN} = 37V, 48V, and 57V, V_{OUT} = 12V



ELECTRICAL CHARACTERISTICS

Input Voltage Range	V_{IN} Continuous	37V to 57V
Output Voltage Set Accuracy		±4% (Typ.)
Output Voltage Ripple	I_{OUT} = 1A	180mV (Typ.)
Line Regulation		±0.5% (Typ.)
Load Regulation		±0.2% (Typ.)
Efficiency	I_{OUT} = 1A, Include Input Bridge	84.5%
Switching Frequency	I_{OUT} = 1A	140kHz (Typ.)
Minimum Output Current		10mA
Operating Temperature Range		0 to 85°C
Start-Up Time	V_{IN} on to V_{OUT} Regulated	110ms (Typ.)
Calculated MTBF	MIL-HDBK-217F	4185x10^3 hrs

NOTE: All electrical characteristics are tested under 25°C ambient temperature, V_{IN} = 3.3V unless otherwise noted.

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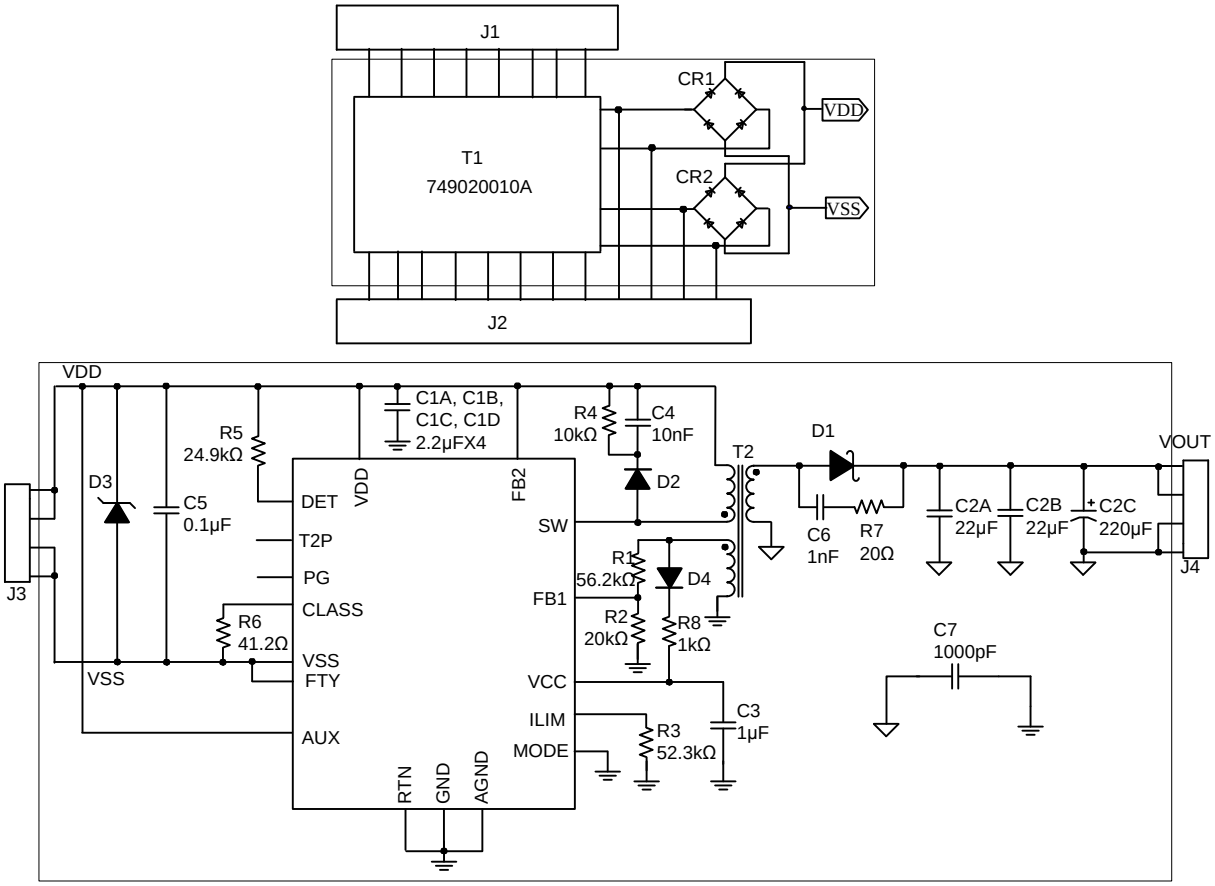
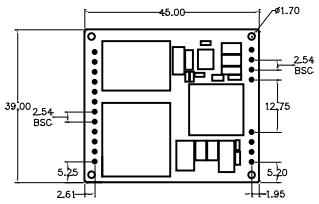
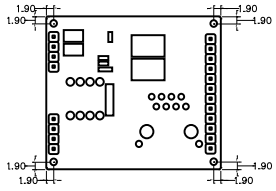
DO-IT-YOURSELF SCHEMATIC



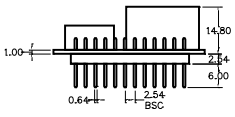
PRODUCT PACKAGE AND DIMENSIONS



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Pin	Designation	Function
J1	VIN	PSE Lan Input
1 ~ 2	VIN	Bridge One Input
3 ~ 4	VIN	Bridge Two Input
5 ~ 12	Signal Output	Lan Signal Output
13 ~ 14	VOUT	Output Voltage
15 ~ 16	GND	Output Ground
17 ~ 18	VDD	Input Voltage after Bridge
19 ~ 20	VSS	Input Ground after Bridge

NOTE:
Contact factory for different sizes of the boards (Quantity >2k).

For more information, Gerber files, and PCB layout, please contact mEZsupport@monolithicpower.com

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BILL OF MATERIALS

Item	Qty	RefDes	Value	Description	Package	Manufacturer	Manufacturer P/N
1	4	C1A, C1B, C1C, C1D	2.2μF	Ceramic Cap., 100V, X7R	1210	muRata	GRM32ER72A225KA35L
2	2	C2A,C2B	22μF	Ceramic Cap., 25V, X7R	1210	muRata	GRM32ER71E226KE15L
3	1	C2C	220μF	Tantalum Cap, 16V	Solid SMD	Mouser	T491D227K016ZT7280
4	1	C3	1μF	Ceramic Cap., 10V, X7R	603	muRata	GRM188R71A105KA61D
5	1	C4	10nF	Ceramic Cap., 100V, X7R	805	muRata	GRM21BR72A103KA01L
6	1	C5	0.1μF	Ceramic Cap., 100V, X7R	1206	Murata	GRM319R72A104KA01D
7	1	C6	1nF	Ceramic Cap., 100V, X7R	603	muRata	GRM188R72A102KA01D
8	1	C7	1nF	Ceramic Cap., 2000V, X7R	1808	muRata	GR442QR73D102KW01L
9	1	R1	56.2kΩ	Film Res, 1%	603	ROYAL	RC0603FR-0756K2L
10	1	R2	20kΩ	Film Res, 1%	603	ROYAL	RC0603FR-0720KL
11	1	R3	52.3kΩ	Film Res, 1%	603	ROYAL	RC0603FR-0752K3L
12	1	R4	10kΩ	Film Res, 1%	1206	ROYAL	RC1206FR-0710KL
13	1	R5	24.9kΩ	Film Res, 1%	603	ROYAL	RC0603FR-0724K9L
14	1	R6	41.2	Film Res, 1%	603	ROYAL	RC0603FR-0741R2L
15	1	R7	20	Film Res, 1%	805	ROYAL	RC0805FR-0720RL
16	1	R8	1kΩ	Film Res, 1%	603	ROYAL	RC0603FR-071KL
17	1	D1	SBR8U60P5	8A, 60V, Super Barrier Rectifier	POWERDI5	Diodes	SBR8U60P5-13
18	1	D2	BAV21	Switching Diode, 200V, 200mW	SOD-123	Diodes	BAV21W-7-F
19	1	D3	SMAJ58A	TVS	SMA	Littlefuse	SMAJ58A
20	1	D4	1N4148	Switching Diode, 75V, 250mW	SOD-323	Diodes	1N4148WS-7-F
21	1	T1	749020010A	LAN-Transformer WE-LAN	SMD	Wurth	749020010A
22	1	T2	47.4μH	Np:Ns:Na = 22:10:6, Lp = 47.4μH, Core = EE13	DIP	Wurth	750316206
23	1	J1	RJ45-8N4-B	RJ Jack / Signal Line EMI/RFI Filters 6 TRMN BRD/CBLE GRND 8-Pin Block Inductor	RJ45-TAB	Wurth	615 008 140 121
24	1	J2		12-Pin Jack, 100mil Clearance		Wurth	
25	2	J3,J4		4-Pin Jack, 100mil Clearance		Wurth	
26	2	CR1, CR2	HD01-T	0.8A Surface-Mounted Glass Passivated Bridge Rectifier	MiniDIP	Diodes Inc	HD01-T
27	1	U1	MP8007	IEEE 802.3af/at Compatible PoE Power Device Interface with 13W Primary-Side Regulated Flyback or Buck Converter	QFN-28	MPS	MP8007

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