

Bill of Materials

MCP39F521 Power Monitor Demo Board (ADM00686)

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Part Number: ADM00686
Revision: 1
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Drawn By: Bogdan Popescu



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Quantity	Designator	Description_	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1
1	C1	CAP FILM 0.01uF 330V 20% RAD P10L13W4H9	Epcos	B32911A3103M	Digi-Key	495-3236-ND	\$0.84
4	C2, C3, C4, C5	CAP CER 33nF 50V 10% X7R SMD 0603	TDK	C1608X7R1H333K	Digi-Key	445-5093-1-ND	\$0.10
1	C6	CAP ALU 100uF 16V 20% SMD D	Nichicon	UWX1C101MCL1GB	Digi-Key	493-2105-2-ND	\$0.08
12	C7, C9, C12, C13, C14, C17, C23, C26, C27, C28, C29, C31	CAP CER 0.1uF 25V 10% X7R SMD 0603	Murata	GRM188R71E104KA01D	Digi-Key	490-1524-1-ND	\$0.02
3	C8, C22, C25	CAP CER 10uF 10V 10% X7R SMD 0805	TDK Corporation	C2012X7R1A106K125AC	Digi-Key	445-6857-1-ND	\$0.41
2	C10, C11	CAP ALU 4.7uF 400V 20% RAD_P3.5D8H13	Nichicon	UVC2G4R7MPD1TD	Digi-Key	493-10417-1-ND	\$0.85
1	C18	CAP CER 4.7uF 25V 10% X7R SMD 0805	TDK Corporation	C2012X7R1E475K125AE	Digi-Key	445-5972-1-ND	\$0.57
1	C24	CAP CER 10uF 25V 10% X7R SMD 1206	Taiyo Yuden	TMK316B7106KL-TD	Digi-Key	587-2399-1-ND	\$0.34
1	C30	CAP CER 4.7uF 10V 10% X5R SMD 0805	Taiyo Yuden	LMK212BJ475KD-T	Digi-Key	587-1297-1-ND	\$0.17
1	C32	CAP CER 0.47uF 6.3V 10% X5R SMD 0603	Murata	GRM188R60J474KA01D	Digi-Key	490-1548-1-ND	\$0.17
1	D1	DIO RECT ES1G 1.25V 1A 400V SMD DO-214AC SMA	Diodes Incorporated	ES1G-13-F	Digi-Key	ES1G-FDICT-ND	\$0.50
3	D2, D3, D4	DIO RECT MRA4005 1.1V 1A 600V DO-214AC SMA	ON Semiconductor	MRA4005T3G	Digi-Key	MRA4005T1GOSCT-ND	\$0.31
2	FB1, FB2	FERRITE 800mA 0.15R SMD 0805	Laird	LI0805H151R-10	Digi-Key	240-2384-1-ND	\$0.10
2	FB3, FB4	FERRITE 7A 0.01R RAD P5L5.3D3.8	Panasonic - ECG	EXC-ELSR35S	Digi-Key	P9821BK-ND	\$0.00
1	J1	CON IEC 250V 15A Inlet C14 TH R/A	Schurter Inc	GSP1.9103.1	Digi-Key	486-1130-ND	\$2.33
1	J2	CON IEC 250V 15A Outlet C13 TH R/A	Schurter Inc	6182.0033	Digi-Key	486-1343-ND	\$5.58
1	J3	CON POWER 2.5mm 5.5mm SWITCH TH R/A	CUI Inc	PJ-002B	Digi-Key	CP-002B-ND	\$0.93
1	J5	CON HDR-2.54 Male 1x4 Tin 5.84MH TH VERT	FCI	68002-404HLF	Digi-Key	609-3305-ND	\$0.19

2	J6, J8	CON HDR-2.54 Male 1x2 Tin 6.10MH TH VERT	Molex Inc	0022284020	Digi-Key	WM6402-ND	
1	J10	CON USB MINI-B Female TH VERT	Molex Connector Corpora	500075-1517	Digi-Key	WM2072-ND	\$4.77
1	JP2	CON HDR-2.54 Male 1x3 Gold 5.84MH TH VERT	FCI	68000-103HLF	Digi-Key	609-3461-ND	\$0.26
2	L1, L2	INDUCTOR 1mH 240mA 20% SMD L6W6H2.4	Coilcraft	LPS6225-105MLB	element14 Sing	2287865	
2	LD1, LD3	DIO LED RED 1.8V 20mA 7.1mcd Diffuse SMD 0603	OSRAM	LS L29K-G1J2-1-Z	Digi-Key	475-2506-1-ND	\$0.17
1	LD5	DIO LED GREEN 2.2V 25mA 15mcd Clear SMD 0603	Kingbright	APT1608SGC	Digi-Key	754-1121-1-ND	\$0.38
1	MOV1	RES VARISTOR 275V 130J TH DISC 14mm	EPCOS Inc	S14K275E2K1	Digi-Key	495-4291-ND	\$0.63
4	NUT1	HEX NUT 5/16" 6-32	B&F Fastener Supply	HNZ 632	Digi-Key	H220-ND	\$0.03
1	R1	RES SHUNT MF 0.002R 1% 2W 2512	Stackpole Electronics Inc	CSNL2512FT2L00	Digi-Key	CSNL2512FT2L00CT-ND	\$1.05
2	R2, R3	RES TKF 499k 1% 3/4W SMD 2010	Vishay Dale	CRCW2010499KFKEF	Digi-Key	541-499KACCT-ND	\$0.33
2	R4, R10	RES TKF 470R 5% 1W SMD 2512	Panasonic	ERJ-1TYJ471U	Digi-Key	PT470XCT-ND	\$0.57
1	R5	RES TKF 2.49R 1% 1/10W SMD 0603	Vishay	CRCW06032R49FKEA	Digi-Key	541-2.49HHCT-ND	\$0.08
9	R6, R7, R8, R9, R23, R25, R27, R29, R33	RES TKF 1k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1001V	Digi-Key	P1.00KHCT-ND	\$0.01
1	R11	RES TKF 100R 5% 1/10W SMD 0603	Vishay	CRCW0603100RJNEA	Digi-Key	541-100GCT-ND	\$0.07
2	R12, R16	RES TKF 2.05k 1% 1/10W SMD 0603	Yageo	RC0603FR-072K05L	Digi-Key	311-2.05KHRTR-ND	\$0.00
2	R13, R14	RES TKF 4.7k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF4701V	Digi-Key	P4.70KHCT-ND	\$0.10
1	R17	RES TKF 8.2k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF8201V	Digi-Key	P8.20KHCT-ND	\$0.10
2	R19, R21	RES TKF 0R 1/10W SMD 0603	NIC Components	NRC06Z0TRF	NIC Componen	NRC06Z0TRF	
1	R20	RES TKF 33R 5% 1/10W SMD 0603	Yageo	9C06031A33R0JLHFT	Digi-Key	311-33GTR-ND	\$0.00
1	R35	RES TKF 10k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1002V	Digi-Key	P10.0KHCT-ND	\$0.10
4	R36, R37, R38, R39	RES TKF 2.1k 1% 1/10W SMD 0603	Panasonic Electronic Cor	ERJ-3EKF2101V	Digi-Key	P2.10KHCT-ND	\$0.10
4	SCR1	MACHINE SCREW PAN PHILLIPS 6-32	B&F Fastener Supply	PMS 632 0038 PH	Digi-Key	H356-ND	\$0.03
3	TP2, TP4, TP5	CON TP PIN Tin TH	Harwin	H2121-01	Mouser	855-H2121-01	\$0.55
1	U3	IC SWITCHER LNK304 SO-8C	Power Integrations	LNK304DG-TL	Digi-Key	596-1237-1-ND	\$1.21
1	U6	IC ISOLATOR ISO1541DR Bidirectional I2C SOIC-8	Texas Instruments	ISO1541DR	Digi-Key	296-34872-1-ND	\$4.53
2	U7, U9	IC PHOTO HCPL-181 4-SMD	Avago Technologies	HCPL-181-00CE	Digi-Key	516-1788-1-ND	\$0.67

Microchip Parts listed below

1	U1	MCHP ANALOG ENERGY MEASUREMENT 4000:1 MCP39F521-E/MQ QFN-28	Microchip Technology	MCP39F521-E/MQ	Microchip Tech	MCP39F521-E/MQ	
1	U2	MCHP ANALOG TEMPERATURE SENSOR -40C to +150C MCP9700T-E/TT SOT-23-3	Microchip	MCP9700T-E/TT	Microchip	MCP9700T-E/TT	
1	U5	MCHP ANALOG LDO 3.3V MCP1754ST-3302E/DB SOT-223-3	Microchip	MCP1754ST-3302E/DB	Microchip	MCP1754ST-3302E/DB	
1	U11	MCHP INTERFACE USB I2C UART MCP2221-I/ST TSSOP-14	Microchip Technology	MCP2221-I/ST	Microchip Tech	MCP2221-I/ST	

Mechanical Parts to be added in the package

1	LABEL1	LABEL, NEED HELP WITH ASSY/SERIAL					
1	CBL1	MECH HW CABLE USB-A Male to Mini USB-B Male 3ft Black	Katerno	10UM-02103BK	Katerno	10UM-02103BK	
1	CBL2	MECH HW 1ft 18 AWG Monitor Power Adapter Cord (NEMA 5-15R to IEC320C14)	Katerno	152360	Katerno	152360	
1	CBL3	MECH HW 6ft 16 AWG Universal Power Cord (IEC320C13 to NEMA 5-15P)	Katerno	153879	Katerno	153879	
1	ENCLOSURE1	MECH ENCLOSURE Slim Ref Meter	Tech-Demos.com	TD03-0101R1	Tech-Demos.com	TD03-0101R1	
1	JP4	MECH HW JUMPER 2.54mm 1x2 Handle Gold	TE Connectivity	881545-2	Digi-Key	A26242-ND	\$0.27
1	LABEL2	MECH HW LABEL HIGH VOLTAGE	Panduit Corp	PLD-56	Digi-Key	PLD-56-ND	\$33.88
1		DOC, INFO SHEET, GENERAL SAFETY NOTICE	Microchip	DS50002371A			

PCB

1	PCB1	Printed Circuit Board		04-10450-R1			
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Do Not Populate Parts listed below

2	R15, R18	RES TKF 0R 1/10W SMD 0603	NIC Components	NRC06Z0TRF	NIC Component	NRC06Z0TRF	

Approved	Notes
	SCR1, NUT1 LABEL2 JP4 MOV1 Are used to fix J1 and J2 in place Will be stuck on the left side of the enclosure, near the Power Jack entry. Mounted on JP2 header on the "AC/DC supply" position Will be soldered bent at a 90 degree angle towards the lower edge of the board to accommodate the lid of the enclosure.