

Bill of Materials MCP39F511 Power Monitor Demo Board

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Part Number: ADM00667
Revision: 1
Engineer: Adrian Mot
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	Price / 1 Board
1	C1	CAP FILM 0.01uF 330V 20% RAD P10L13W4H9	Epcos	B32911A3103M	Digi-Key	495-3236-ND	\$0.84	\$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	\$0.40
1	C6	CAP ALU 100uF 16V 20% SMD D	Nichicon	UWX1C101MCL1GB	Digi-Key	493-2105-2-ND	\$0.08	\$0.08
14	C7, C9, C12, C13, C14, C15, C16, 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	\$0.27
3	C8, C22, C25	CAP CER 10uF 10V 10% X7R SMD 0805	TDK Corporation	C2012X7R1A106K125AC	Digi-Key	445-6857-1-ND	\$0.41	\$1.23
2	C10, C11	CAP ALU 4.7uF 400V 20% RAD_P3.5D8H13	Nichicon	UVC2G4R7MPD1TD	Digi-Key	493-10417-1-ND	\$0.85	\$1.70
1	C18	CAP CER 4.7uF 25V 10% X7R SMD 0805	TDK Corporation	C2012X7R1E475K125AE	Digi-Key	445-5972-1-ND	\$0.57	\$0.57
2	C19, C21	CAP CER 0.01uF 16V 5% SMD 0603	Taiyo Yuden	EMK107SD103JA-T	Digi-Key	587-1093-1-ND	\$0.33	\$0.66
1	C20	CAP CER 3300pF 50V 10% X7R SMD 0603	ROHM	C0603C332K5RACTU	Digi-Key	399-1086-1-ND	\$0.10	\$0.10
1	C24	CAP CER 10uF 25V 10% X7R SMD 1206	Taiyo Yuden	TMK316B7106KL-TD	Digi-Key	587-2399-1-ND	\$0.34	\$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	\$0.17
1	C32	CAP CER 0.47uF 6.3V 10% X5R SMD 0603	Murata	GRM188R60J474KA01D	Digi-Key	490-1548-1-ND	\$0.17	\$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	\$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	\$0.93
2	FB1, FB2	FERRITE 800mA 0.15R SMD 0805	Laird	LI0805H151R-10	Digi-Key	240-2384-1-ND	\$0.10	\$0.20
2	FB3, FB4	FERRITE 7A 0.01R RAD P5L5.3D3.8	Panasonic - ECG	EXC-ELSR35S	Digi-Key	P9821BK-ND	\$0.00	\$0.00
1	J1	CON IEC 250V 15A Inlet C14 TH R/A	Schurter Inc	GSP1.9103.1	Digi-Key	486-1130-ND	\$1.83	\$1.83
1	J2	CON IEC 250V 15A Outlet C13 TH R/A	Schurter Inc	6182.0033	Digi-Key	486-1343-ND	\$4.55	\$4.55
1	J3	CON POWER 2.5mm 5.5mm SWITCH TH R/A	CUI Inc	PJ-002B	Digi-Key	CP-002B-ND	\$0.93	\$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	\$0.19
4	J6, J7, J8, J9	CON HDR-2.54 Male 1x2 Tin 6.10MH TH VERT	Molex Inc	0022284020	Digi-Key	WM6402-ND		\$0.00
1	J10	CON USB MINI-B Female TH VERT	Molex Connector Corporation	500075-1517	Digi-Key	WM2072-ND	\$4.77	\$4.77
3	JP1, JP2, JP3	CON HDR-2.54 Male 1x3 Gold 5.84MH TH VERT	FCI	68000-103HLF	Digi-Key	609-3461-ND	\$0.26	\$0.78
2	L1, L2	INDUCTOR 1mH 240mA 20% SMD L6W6H2.4	Coilcraft	LPS6225-105MLB	element14 Singapore	2287865		\$0.00
4	LD1, LD2, LD3, LD4	DIO LED RED 1.95V 30mA 700mod Clear SMD 0603	Kingbright	APTD1608SURCK	Digi-Key	754-1541-1-ND	\$0.31	\$1.24
1	LD5	DIO LED BI RED, GREEN 1.95V, 2.1V 30mA 0805	Kingbright Corp	APHBM2012SURKCGKC	Digi-Key	754-1093-1-ND	\$0.47	\$0.47
1	MOV1	RES VARISTOR 275V 130J TH DISC 14mm	EPCOS Inc	S14K275E2K1	Digi-Key	495-4291-ND	\$0.63	\$0.63
1	R1	RES SHUNT MF 0.002R 1% 2W 2512	Stackpole Electronics Inc	CSNL2512FT2L00CT	Digi-Key	CSNL2512FT2L00CT-ND	\$1.05	\$1.05
2	R2, R3	RES TKF 499k 1% 3/4W SMD 2010	Vishay Dale	CRCW2010499KFKEF	Digi-Key	541-499KACCT-ND	\$0.33	\$0.66
2	R4, R10	RES TKF 4.7R 5% 1W SMD 2512	Stackpole Electronics Inc	RPC2512JT4R70	Digi-Key	RPC2512JT4R70CT-ND	\$0.68	\$1.36
1	R5	RES TKF 2.49R 1% 1/10W SMD 0603	Vishay	CRCW06032R49FKEA	Digi-Key	541-2.49HHCT-ND	\$0.08	\$0.08
15	R6, R7, R8, R9, R15, R23, R24, R25, R26, R27, R28, R29, R30, R33, R34	RES TKF 1k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1001V	Digi-Key	P1.00KHCT-ND	\$0.02	\$0.23
5	R11, R21, R22, R31, R32	RES TKF 100R 5% 1/10W SMD 0603	Vishay	CRCW0603100RJNEA	Digi-Key	541-100GCT-ND	\$0.07	\$0.37
2	R12, R16	RES TKF 2.05k 1% 1/10W SMD 0603	Yageo	RC0603FR-072K05L	Digi-Key	311-2.05KHRTR-ND	\$0.00	\$0.00
2	R13, R14	RES TKF 4.7k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF4701V	Digi-Key	P4.70KHCT-ND	\$0.10	\$0.20
1	R17	RES TKF 8.2k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF8201V	Digi-Key	P8.20KHCT-ND	\$0.10	\$0.10
2	R18, R19	RES TF 100k 1% 1/8W SMD 0603	Vishay	MCT06030C1003FP500	Digi-Key	MCT0603-100K-CFTR-ND	\$0.02	\$0.04
1	R20	RES TKF 33R 5% 1/10W SMD 0603	Yageo	9C06031A33R0JLHFT	Digi-Key	311-33GTR-ND	\$0.00	\$0.00
1	R35	RES TKF 10k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1002V	Digi-Key	P10.0KHCT-ND	\$0.10	\$0.10
1	U3	IC SWITCHER LNK304 SO-8C	Power Integrations	LNK304DG-TL	Digi-Key	596-1237-1-ND	\$1.21	\$1.21
1	U6	IC PHOTO FOD8012 Bi-Dir 3.3V and 5V SOIC-8	Fairchild Semiconductor	FOD8012	Digi-Key	FOD8012-ND	\$4.50	\$4.50
4	U7, U8, U9, U10	IC PHOTO HCPL-181 4-SMD	Avago Technologies	HCPL-181-00CE	Digi-Key	516-1788-1-ND	\$0.67	\$2.68

Microchip Parts listed below								
1	U1	MCHP ANALOG ENERGY MEASUREMENT 4000:1 MCP39F511-E/MQ QFN-28	Microchip Technology	MCP39F511-E/MQ	Microchip Technology	MCP39F511-E/MQ		\$0.00
1	U2	MCHP ANALOG TEMPERATURE SENSOR -40C to +150C MCP9700T-E/TT SOT-23-3	Microchip	MCP9700T-E/TT	Microchip	MCP9700T-E/TT		\$0.00
1	U4	MCHP ANALOG OPAMP 1-Ch 10MHz MCP6021T-E/OT SOT-23-5	Microchip	MCP6021T-E/OT	Microchip	MCP6021T-E/OT		\$0.00
1	U5	MCHP ANALOG LDO 3.3V MCP1754ST-3302E/DB SOT-223-3	Microchip	MCP1754ST-3302E/DB	Microchip	MCP1754ST-3302E/DB		\$0.00
1	U11	MCHP INTERFACE USB I2C UART MCP2221-I/ST TSSOP-14	Microchip Technology	MCP2221-I/ST	Microchip Technology	MCP2221-I/ST		\$0.00
								\$0.00
								\$0.00
								\$0.00

Mechanical Parts to be added in the package								
3	JP1 JP2, & JP3	MECH HW JUMPER 2.54mm 1x2 Handle Gold	TE Connectivity	881545-2	Digi-Key	A26242-ND	\$0.27	\$0.81
4	NUT1	MECH HW NUT M3 Nylon	Keystone Electronics	4688	Digi-Key	KEY1146-ND	\$0.13	\$0.52
4	SCR1	MECH HW SCREW M3x6mm Pan Slotted Nylon	Keystone Electronics	29341	Digi-Key	29341K-ND	\$0.19	\$0.76
1	Included in Box at time of packing	USB A Male to Mini USB B 5 pin Cable - 3ft (Distributor...Katerno.com)	Katerno.com	10UM-02103BK	Katerno.com	10UM-02103BK	\$0.72	\$0.72
1	Included in Box at time of packing	6ft 16 AWG Universal Power Cord (IEC320C13 to NEMA 5-15P)	Katerno.com	25545_c2g	Katerno.com	153879	\$5.69	\$5.69
1	Included in Box at time of packing	1ft 18 AWG Monitor Power Adapter Cord (NEMA 5-15R to IEC320C14)	Katerno.com	03147_c2g	Katerno.com	152360	\$3.14	\$3.14
1	Meter Enclosure	MECH ENCLOSURE Acrylic Energy Metering Single Phase 072612-R6 LABEL, DISP/LABEL BK/YW HIGH VOLTAGE 1.000" x 1.500" (25.40mm x 38.10mm) High Voltage Symbol (ISO 38	Tech-Demos.com	072612-R6	Tech-Demos.com	072612-R6	\$42.97	\$42.97
0.005	LABEL1		Panduit Corp	PLD-56	Digi-Key	PLD-56-ND	\$0.17	\$0.00
								\$90.74

Do Not Populate Parts listed below								
								\$0.00
								\$0.00
								\$0.00

Approved	Notes	
	NUT1, SCR1 JP4 LABEL1	Used for fastening J1 and J2 @ four locations See test procedure for default positions. @JP1, @JP2, @JP3 High Voltage label Placed on Bottom side of Enclosure. One dispenser has 200 labels