

# Bill of Materials

# MCP1012 1W Demo Board

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 Engineer: Leonard Lazar  
 Drawn By: Stroe Octavian



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Quantity	Designator	Description_	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1
1	C1	CAP FILM 2.2uF 305VAC 20% RAD P27.5L31.5W14H24.5	<a href="#">EPCOS / TDK</a>	<a href="#">B32924C3225M</a>	Mouser	<a href="#">871-B32924C3225M</a>
2	C2, C7	CAP CER 1uF 50V 10% X7R SMD 0805	<a href="#">Murata Electronics North</a>	<a href="#">GRM21BR71H105KA12U</a>	Digi-Key	<a href="#">490-4736-1-ND</a>
1	C3	CAP CER 1000pF 2KV 10% X7R SMD 1206	<a href="#">Johanson Dielectrics Inc</a>	<a href="#">202R18W102KV4E</a>	Digi-Key	<a href="#">709-1036-1-ND</a>
1	C4	CAP CER 330pF 50V 5% C0G SMD 0603	<a href="#">KEMET</a>	<a href="#">C0603C331J5GACTU</a>	Digi-Key	<a href="#">399-1068-1-ND</a>
1	C5	CAP CER 330pF 200V 10% X7R SMD 0603	<a href="#">KEMET</a>	<a href="#">C0603C331K2RAC7867</a>	Digikey	<a href="#">399-15392-1-ND</a>
1	C6	CAP ALU 330uF 50V 20% SMD G	<a href="#">Panasonic Electronic Co</a>	<a href="#">EEE-FT1H331AP</a>	Digi-Key	<a href="#">PCE5026CT-ND</a>
1	C8	CAP CER 2.2uF 16V 10% X7R SMD 0805	<a href="#">Murata</a>	<a href="#">GRM21BR71C225KA12U</a>	Digi-Key	<a href="#">490-3906-1-ND</a>
1	C9	CAP CER 0.47uF 50V 10% X7R SMD 0805	<a href="#">Murata</a>	<a href="#">GRM21BR71H474KA88U</a>	Digi-Key	<a href="#">490-3328-1-ND</a>
1	C10	CAP CER 10000pF 25V 10% X7R SMD 0603	<a href="#">Panasonic</a>	<a href="#">ECJ-1VB1E103K</a>	Digi-Key	<a href="#">PCC1763TR-ND</a>
1	C11	CAP CER 0.1uF 50V 10% X7R SMD 0805	<a href="#">Cal-Chip</a>	<a href="#">GMC21X7R104K50NTLF</a>	Cal-Chip	<a href="#">GMC21X7R104K50NTLF</a>
1	C12	CAP CER 10uF 10V 10% X5R SMD 0805	<a href="#">Taiyo Yuden</a>	<a href="#">LMK212BJ106KG-T</a>	Digi-Key	<a href="#">587-1300-1-ND</a>
1	C13	CAP CER 1000pF 50V 10% X7R SMD 0805	<a href="#">Murata Electronics North</a>	<a href="#">GRM216R71H102KA01U</a>	Digi-Key	<a href="#">490-9741-1-ND</a>
1	C14	CAP CER 1000pF 50V 20% X7R SMD 0603	<a href="#">TDK Corporation</a>	<a href="#">C1608X7R2A102K080AA</a>	Digi-Key	<a href="#">445-1298-1-ND</a>
3	D1, D2, D7	DIO RECT US1M 1.7V 1A 1000V DO-214AC SMA	<a href="#">Vishay</a>	<a href="#">US1M-E3/61T</a>	Digi-Key	<a href="#">US1M-E3/61TGICT-ND</a>
1	D3	DIO TVS SMAJ22A 22V 400W SMD DO-214AC SMA	<a href="#">Bourns Inc.</a>	<a href="#">SMAJ22A</a>	Digi-Key	<a href="#">SMAJ22ABCT-ND</a>
1	D4	DIO TVS P6KE510 434V 600W DO-214AA SMB	<a href="#">Micro Commercial Co</a>	<a href="#">SMBJP6KE510A-TP</a>	Digi-Key	<a href="#">SMBJP6KE510A-TPMSC</a>
1	D5	DIO SCTKY BAT46W-TP 450mV 10mA 100V SMD SOD-123	<a href="#">Micro Commercial Comp</a>	<a href="#">BAT46W-TP</a>	Mouser	<a href="#">833-BAT46W-TP</a>
1	D6	DIO SCTKY DFLS1200-7 850mV 1A 200V POWERDI-123	<a href="#">Diodes Incorporated</a>	<a href="#">DFLS1200-7</a>	Digi-Key	<a href="#">DFLS1200DICT-ND</a>
1	D8	DIO ZNR SMAZ18-13-F 18V 1W DO-214AC SMA	<a href="#">Diodes Incorporated</a>	<a href="#">SMAZ18-13-F</a>	Digi-Key	<a href="#">SMAZ18-FDICT-ND</a>

1	D10	DIO LED RED 2.2V 20mA 40mcd Clear SMD 0805	<a href="#">Dialight</a>	<a href="#">598-8110-107F</a>	Digi-Key	<a href="#">350-2038-1-ND</a>
1	D11	DIO LED GREEN 3.1V 20mA 400mcd Clear SMD 0805	<a href="#">QT Brightek (QTB)</a>	<a href="#">QBLP631-IG</a>	Digi-Key	<a href="#">1516-1084-1-ND</a>
1	D12	DIO ZNR SMAZ5V1-13-F 5.1V 1W DO-214AC SMA	<a href="#">Diodes Incorporated</a>	<a href="#">SMAZ5V1-13-F</a>	Digi-Key	<a href="#">SMAZ5V1-FDICT-ND</a>
1	D13	DIO RECT 1N4148 1.25V 150mA 100V SOD-123	<a href="#">Micro Commercial Comp</a>	<a href="#">1N4148W-TP</a>	Digi-Key	<a href="#">1N4148WTPMSCT-ND</a>
1	F1	RES FUSE 2A 300VAC Slow Radial TH P5.08D8.5H8	<a href="#">Littelfuse Inc</a>	<a href="#">3831200000</a>	Digi-Key	<a href="#">WK6298CT-ND</a>
24	J1, J2, J3, J4, J5, J6, J7, TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17	CON HDR-2.54 Male 1x2 Gold 5.84MH TH VERT	<a href="#">FCI</a>	<a href="#">77311-118-02LF</a>	Digi-Key	<a href="#">609-4434-ND</a>
1	L1	INDUCTOR 100uH 0.79A 20% SMD L7.3W7.3H4.5	<a href="#">WURTH ELEKTRONIK</a>	<a href="#">744777920</a>	Farnell	<a href="#">1635995</a>
1	L2	INDUCTOR 1500uH 810mA 10% SMD L12.3W12.3H10	<a href="#">Coilcraft</a>	<a href="#">MSS1210-155KEB</a>	Mouser	<a href="#">994-MSS1210-155KEB</a>
4	PAD1, PAD2, PAD3, PAD4	MECH HW RUBBER PAD SQ Taper 0.50x0.50x0.23 Black	<a href="#">3M</a>	<a href="#">SJ-5518</a>	Digi-Key	<a href="#">SJ5518-0-ND</a>
2	PIN1, PIN2	CON RCPT 1pin AU H3185-05 THT	<a href="#">Harwin Inc.</a>	<a href="#">H3185-05</a>	Digi-Key	<a href="#">952-3248-ND</a>
1	Q1	TRANS FET N-CH IPD90R1K2C3ATMA1 900V 5.1A 1.2R 83W TO-252-3	<a href="#">Infineon Technologies</a>	<a href="#">IPD90R1K2C3ATMA1</a>	Digikey	<a href="#">IPD90R1K2C3ATMA1CT</a>
1	R1	RES TKF 1.5R 1% 1/3W SMD 1210	<a href="#">Stackpole Electronics Inc</a>	<a href="#">RMCF1210FT1R50</a>	Digi-Key	<a href="#">RMCF1210FT1R50CT-NI</a>
1	R2	RES TF 10k 1% 1/16W SMD 0603	<a href="#">TE Connectivity Passive</a>	<a href="#">CPF0603F10KC1</a>	Digi-Key	<a href="#">A102203CT-ND</a>
2	R2A, R2B	RES TKF 2R 5% 3/4W SMD 2010	<a href="#">Panasonic</a>	<a href="#">ERJ-12ZYJ2R0U</a>	Digi-Key	<a href="#">P2.0WCT-ND</a>
1	R3	RES TKF 47k 1% 1/8W SMD 0805	<a href="#">Stackpole Electronics Inc</a>	<a href="#">RMCF0805FT47K0</a>	Digi-Key	<a href="#">RMCF0805FT47K0TR-NI</a>
8	R4A, R5A, R6A, R7A, R8, R9, R10, R11	RES TKF 2.29k 1% 1/4W SMD 1206	<a href="#">Yageo</a>	<a href="#">RC1206FR-072K49L</a>	Digi-Key	<a href="#">311-2.49KFRCT-ND</a>
1	R12	RES TKF 1R 5% 1/8W SMD 0805	<a href="#">Panasonic</a>	<a href="#">ERJ-6RQJ1R0V</a>	Digi-Key	<a href="#">P1.0BTR-ND</a>
2	R13, R30	RES TKF 10R 1% 1/8W SMD 0805	<a href="#">ROHM</a>	<a href="#">MCR10EZHF10R0</a>	Digi-Key	<a href="#">RHM10.0CCT-ND</a>
1	R14A	RES TKF 1.5R 1% 1/8W SMD 0805	<a href="#">Welwyn</a>	<a href="#">ASC0805-1R5FT5</a>	Farnell	<a href="#">2078936RL</a>
1	R14B	RES TKF 1.6R 1% 1/8W SMD 0805 AEC-Q200	<a href="#">Panasonic Electronic Co</a>	<a href="#">ERJ-6RQF1R6V</a>	Mouser	<a href="#">667-ERJ-6RQF1R6V</a>
1	R15	RES TKF 10R 5% 1/4W SMD 1206	<a href="#">Yageo</a>	<a href="#">AC1206JR-0710RL</a>	Digi-Key	<a href="#">YAG3916CT-ND</a>
1	R16	RES TF 0.05R 1% 1W SMD 0612	<a href="#">SUSUMU</a>	<a href="#">PRL1632-R050-F-T1</a>	Digi-Key	<a href="#">PRL1632.050FCT-ND</a>
2	R17A, R17B	RES TKF 1R 1% 3/4W SMD 2010	<a href="#">Vishay</a>	<a href="#">CRCW20101R00FKEF</a>	Vishay	<a href="#">CRCW20101R00FKEF</a>
1	R18	RES TKF 330k 1% 1/8W SMD 0805 AEC-Q200	<a href="#">Panasonic Electronic Co</a>	<a href="#">ERJ-6ENF3303V</a>	Digi-Key	<a href="#">P330KCCT-ND</a>
2	R19, R27	RES TKF 100k 5% 1/8W SMD 0805	<a href="#">Panasonic</a>	<a href="#">ERJ-6GEYJ104V</a>	Digi-Key	<a href="#">P100KATR-ND</a>
1	R20	RES TKF 51R 5% 3/4W SMD 2010	<a href="#">Panasonic Electronic Co</a>	<a href="#">ERJ-12ZYJ510U</a>	Digikey	<a href="#">P51WCT-ND</a>
1	R21	RES TKF 68R 5% 3/4W SMD 2010	<a href="#">Panasonic</a>	<a href="#">ERJ-12ZYJ680U</a>	Digi-Key	<a href="#">P68WCT-ND</a>
1	R22	RES TKF 220R 5% 3/4W SMD 2010	<a href="#">Panasonic</a>	<a href="#">ERJ-12ZYJ221U</a>	Digi-Key	<a href="#">P220WTR-ND</a>
5	R24, R35A, R35B, R35C, R35D	RES TKF 330R 5% 1/4W SMD 1206	<a href="#">Panasonic</a>	<a href="#">ERJ-8GEYJ331V</a>	Digi-Key	<a href="#">P330ETR-ND</a>
1	R26	RES TKF 1.5k 1% 1/8W SMD 0805	<a href="#">Panasonic</a>	<a href="#">ERJ-6ENF1501V</a>	Digi-Key	<a href="#">P1.50KCTR-ND</a>
1	R28	RES TKF 680R 1% 1/8W SMD 0805	<a href="#">Stackpole Electronics Inc</a>	<a href="#">RMCF-1/10-680-1%</a>	Stackpole Electronics Inc	<a href="#">RMCF-1/10-680-1%</a>
1	R29	RES TKF 560R 1% 1/8W SMD 0805	<a href="#">Stackpole Electronics Inc</a>	<a href="#">RMCF0805FT560R</a>	Digi-Key	<a href="#">RMCF0805FT560RCT-NI</a>
1	R31	RES TKF 18k 1% 1/8W SMD 0805	<a href="#">Stackpole Electronics Inc</a>	<a href="#">RMCF-1/10-18K-1%</a>	Stackpole Electronics Inc	<a href="#">RMCF-1/10-18K-1%</a>
1	R32	RES TKF 1.3k 1% 1/8W SMD 0805	<a href="#">Yageo</a>	<a href="#">RC0805FR-071K3L</a>	Digi-Key	<a href="#">311-1.30KCRCT-ND</a>
1	R33	RES TKF 4.7k 5% 1/8W SMD 0805	<a href="#">Panasonic</a>	<a href="#">ERJ-6GEYJ472V</a>	Digi-Key	<a href="#">P4.7KATR-ND</a>
1	R34	RES TKF 5.6k 1% 1/8W SMD 0805	<a href="#">Vishay Dale</a>	<a href="#">CRCW08055K60FKEA</a>	Digi-Key	<a href="#">541-5.60KCCT-ND</a>
1	SW1	SWITCH DIP 4 SPST 24V 100mA 1-1825059-3 SMD	<a href="#">TE Connectivity Alcoswit</a>	<a href="#">1-1825059-3</a>	Digikey	<a href="#">1-1825059-3-ND</a>

1	SW2	SWITCH TACT SPST 12V 50mA TL3302AF180QJ SMD	<a href="#">E-Switch</a>	<a href="#">TL3302AF180QJ</a>	Digi-Key	<a href="#">EG4576CT-ND</a>
1	T2	TRANS BJT PNP BC807-16L -45V - 500mA 225mW SOT-23-3	<a href="#">ON Semiconductor</a>	<a href="#">BC807-16LT1G</a>	Digi-Key	<a href="#">BC807-16LT1GOSCT-ND</a>
1	TB1	CON TERMINAL 5.08mm 1x3 Female 16- 22AWG 10A TH R/A	<a href="#">WUERTH ELEKTRONIK</a>	<a href="#">691415520003</a>	WUERTH ELEKTRONIK	<a href="#">691415520003</a>
1	TB2	CON TERMINAL 3.5mm 1x2 Female 24- 16AWG 10A TH R/A	<a href="#">WUERTH ELEKTRONIK</a>	<a href="#">691214110002</a>	Digi-Key	<a href="#">732-2747-ND</a>
2	TB3, TB4	CON TERMINAL 5mm 1x2 Female 12- 26AWG 18A TH R/A	<a href="#">Phoenix Contact</a>	<a href="#">1935161</a>	Digi-Key	<a href="#">277-1667-ND</a>
1	TR1	TRANS POWER 12:1 7.5V 200mA 7.6mH TH	<a href="#">WUERTH ELEKTRONIK</a>	<a href="#">750318391</a>	WUERTH ELEKTRONIK	<a href="#">750318391</a>
1	U4	IC OPTOISOLATOR 3.75kV 5Mb HCPL- 2202-300E DIP-8 GW	<a href="#">Broadcom Limited</a>	<a href="#">HCPL-2202-300E</a>	Digi-Key	<a href="#">HCPL-2202-300E-ND</a>
1	U5	IC POWER TLV431BSN1T1G Shunt Voltage Reference SOT23-3	<a href="#">ON Semiconductor</a>	<a href="#">TLV431BSN1T1G</a>	Digi-Key	<a href="#">TLV431BSN1T1GOSCT-</a>

#### Microchip Parts listed below

1	U1	MCHP MCU 8-BIT 16MHz 918B 64B PIC10F322-I/OT SOT-23-6	<a href="#">Microchip Technology</a>	<a href="#">PIC10F322-I/OT</a>	<a href="#">Microchip</a>	<a href="#">PIC10F322-I/OT</a>
1	U2	MCHP ANALOG LDO ADJ MIC5235YM5- TR SOT-23-5	<a href="#">Microchip Technology</a>	<a href="#">MIC5235YM5-TR</a>	Digikey	<a href="#">576-1284-1-ND</a>
1	IC1	IC MCP1012 SOIC-8	<a href="#">Microchip Technology</a>	<a href="#">MCP1012-V/EKA</a>	<a href="#">Microchip</a>	<a href="#">MCP1012-V/EKA</a>

#### Mechanical Parts to be added in the package

1	JP1	MECH HW JUMPER 6.35mm 1x2 D3087- 98	<a href="#">Harwin Inc.</a>	<a href="#">D3087-98</a>	Digi-Key	<a href="#">952-1863-ND</a>
1	LABEL1	LABEL, ASSY W/REV LEVEL (SMALL MODULES) PER MTS-0002				

#### PCB

1	PCB1	Printed Circuit Board		<a href="#">04-11027-R1</a>		
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#### Do Not Populate Parts listed below

0	J8	CON HDR-2.54 Male 1x6 Gold 5.84MH TH R/A	<a href="#">FCI</a>	<a href="#">68016-106HLF</a>	Digi-Key	<a href="#">609-3313-ND</a>
0	R4B, R5B, R6B, R7B	RES TKF 0R SMD 1206	<a href="#">Yageo</a>	<a href="#">RC1206JR-070RL</a>	Digi-Key	<a href="#">311-0.0ERCT-ND</a>
2	R14C, R14D	RES TKF 0.1R 1% 1/8W SMD 0805	<a href="#">Panasonic</a>	<a href="#">ERJ-L06KF10CV</a>	Digi-Key	<a href="#">P100LLCT-ND</a>
0	R23	RES TKF 220R 5% 3/4W SMD 2010	<a href="#">Panasonic</a>	<a href="#">ERJ-12ZYJ221U</a>	Digi-Key	<a href="#">P220WTR-ND</a>
0	R25	RES TKF 390R 5% 1/8W SMD 0805	<a href="#">Panasonic</a>	<a href="#">ERJ-6GEYJ391V</a>	Digi-Key	<a href="#">P390ATR-ND</a>

Approved	Notes	Description