## OPEN POWER - Prototype 1a

	PEN POWER - P	rototyp	e ia	Price Per	Price Per
				Components 1000 Units	Board Board
1uF 0603 Capacitor		4	C2, C4, C5, C12	\$0.0100	\$0
2.2uF 0603 Capacitor		1	C13	\$0.0100	\$0
22uF 0603 Capacitor		2	C10, C11	\$0.0201	\$0
4.7uF 0603 Capacitor		2	C1, C3	\$0.0201	\$0
22uF 0805 Capacitor		2	C7, C8	\$0.0153	\$0
5.6uF 0805 Capacitor			C6, C9	\$0.0590	\$0
1.7uF (DNP) Capacitor - Tantalu	ım - Case A		C16	φ0.0330	\$(
			C15		
Capacitor - Tantalu					\$0
1.7uF (DNP) Capacitor - Tantalu	m - Case B	1	C14		\$0
<b>.2k</b> 0603 Resistor		3	R45, R47, R52	\$0.0010	\$0
.5k 0603 Resistor			R54, R56	\$0.0010	\$0
.8k 0603 Resistor			R46, R48, R53	\$0.0010	\$0
00 0603 Resistor		1	R43	\$0.0010	\$0
000k 0603 Resistor		2	R10, R27	\$0.0010	\$0
<b>0k</b> 0603 Resistor		14	R12, R29, R32, R33, R34, R35, R36, R37, R38, R39,	\$0.0010	\$0
			R40, R41, R42, R49		
2k 0603 Resistor		4	R18, R28, R62, R63	\$0.0010	\$0
k 0603 Resistor			R1, R2, R3, R4, R5, R6, R7,	\$0.0010	\$0
			R8, R9, R13, R15, R16, R17, R20, R21, R22, R23, R24,		
			R25, R26, R30, R50, R51,		
			R55, R57, R58, R59, R60, R61		
.2k* 0603 Resistor			R19	\$0.0010	\$0
.3k* 0603 Resistor			R31	\$0.0010	\$(
.9k 0603 Resistor			R44		\$(
				\$0.0010	
70 0603 Resistor			R11, R14	\$0.0010	\$(
2k* 0603 Resistor		1	R64	\$0.0010	\$0
00k Potentiometer (338	6P-103TL)	1	POT1	\$0.2576	\$0
00k (FBHigh) Potentiometer (3x3	mm SMD)	1	POT3	\$0.0300	\$(
k (FBLow) Potentiometer (3x3	· · · · · · · · · · · · · · · · · · ·		POT4	\$0.0300	\$(
· · · · · · · · · · · · · · · · · · ·					
k (VCC Low) Potentiometer (3x3	min Sivid)	1	POT2	\$0.0300	\$(
MF-PSMF050X-2 0805 Fuse - Gold		1	Fuse1	\$0.024	\$(
					•
<b>2uH</b> 7x7x3mm			L1, L2	\$0.067	\$0
<b>2uH</b> CD32		2	L3, L4	\$0.021	\$0
DO-214AC (SMA)		2	D2, D3	\$0.064	\$0
<b>SOD123</b>		1	D1	\$0.024	\$0
LED - 0603 - Red		1	LED22	\$0.0118	\$(
CHRG LED - 0603 - Blue		1	LED21	\$0.0048	\$(
<b>LED - 0603 - Blue</b>			LED20	\$0.0048	\$(
<b>D.8V</b> LED - 0603 - Blue		1	LED19	\$0.0048	\$0
.25V LED - 0603 - Blue		1	LED17	\$0.0048	\$0
LED - 0603 - Blue		1	LED16	\$0.0048	\$0
<b>.8V</b> LED - 0603 - Blue		1	LED15	\$0.0048	\$0
<b>V</b> LED - 0603 - Blue		1	LED18	\$0.0048	\$(
<b>V</b> LED - 0603 - Blue		1	LED14	\$0.0048	\$(
<b>V</b> LED - 0603 - Greer			LED13	\$0.0072	\$(
LED - 0603 - Green	ì	1		\$0.0072	\$(
.6V LED - 0603 - Green	1	1	LED11	\$0.0072	\$(
<b>V</b> LED - 0603 - Greer	n e	1	LED10	00 00-0	\$(
.5V LED - 0603 - Green	1			\$0.0072	
<b>V</b> LED - 0603 - Yello		1	LED9	\$0.0072 \$0.0072	\$(
V LED - 0603 - Yello	W		LED9	\$0.0072	\$(
- LED - 0003 - Yello		1	LED8	\$0.0072 \$0.0128	\$(
	w	1	LED8 LED7	\$0.0072 \$0.0128 \$0.0128	\$
	w ge	1 1 1	LED8 LED7 LED6	\$0.0072 \$0.0128 \$0.0128 \$0.0124	\$ \$ \$
V LED - 0603 - Orang	w ge	1 1 1	LED8 LED7	\$0.0072 \$0.0128 \$0.0128	\$ \$ \$
V LED - 0603 - Orang	w ge	1 1 1	LED8 LED7 LED6	\$0.0072 \$0.0128 \$0.0128 \$0.0124	
V LED - 0603 - Orang  OV LED - 0603 - Red	w ge	1 1 1 1	LED8 LED7 LED6 LED5	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124	\$\ \$\ \$\ \$\
V LED - 0603 - Orang  OV LED - 0603 - Red  V LED - 0603 - Red	ge ge	1 1 1 1 1	LED8 LED7 LED6 LED5 LED3	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118	\$ \$ \$ \$ \$
LED - 0603 - Orang  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - White	ge ge	1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118	\$ \$ \$ \$ \$
LED - 0603 - Orang  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - White	ge ge	1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118	\$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - White	ge ge	1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185	\$ \$ \$ \$ \$ \$
LED - 0603 - Orang  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - White  LED - 0603 - White  KB5858-Z  Toggle Switch - TH	ge ge	1 1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185	\$1 \$1 \$1 \$1 \$1 \$1 \$1
V LED - 0603 - Orang  OV LED - 0603 - Red  V LED - 0603 - Red  1V LED - 0603 - White  LED - 0603 - White	ge ge	1 1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185	\$1 \$1 \$1 \$1 \$1 \$1
LED - 0603 - Orang  V LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - White  LED - 0603 - White  LED - 0603 - White  KB5858-Z  Toggle Switch - TH  HDR1X4	ge ge	1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185	\$1 \$1 \$1 \$1 \$1 \$1 \$1
LED - 0603 - Orang  V LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - White  HED - 0603 - White  LED - 0603	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 2 2	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185	\$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1
LED - 0603 - Orang  V LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - Red  LED - 0603 - White  LED - 0603 - Red  LED - 0603 - White  LED - 06	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 2 2	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1 SW1 P1, P2	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200	\$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED - 0603 - White L	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 2 2	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1 SW1 P1, P2	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250	\$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED - 0603 - White LED -	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1 SW1 P1, P2	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED - 0603 - White LED -	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1 SW1 P1, P2 BATT1 USB1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red L	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1 SW1 P1, P2 BATT1 USB1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Micro LED - 0603 - Red	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 1 5	LED8 LED7 LED6 LED5 LED3 LED4 LED2 LED1  SW1 P1, P2  BATT1 USB1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0200 \$0.0250 \$0.0283	\$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Mide LED - 0603 - Red LED - 0603 - Re	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 5 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED -	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 5 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED -	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 5 1 1 1 1 1 1 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0185 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - Red LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED -	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 2 2 1 1 1 5 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED - 0	ge ge HRU (6mm x 6mm	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 1 1 1 1 2 2	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5  U3, U4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0185 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0250 \$0.0283	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang DV LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED - 0	ge ge ge HRU (6mm x 6mm Peneric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0283 \$0.0462	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang  NV LED - 0603 - Red LED - 0603 - White LED - 0603 - Red	ge ge ge HRU (6mm x 6mm Peneric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 1 1 1 1 2 2	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5  U3, U4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0283 \$0.0462  Total Cost per	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang  NOV  LED - 0603 - Red  LED - 0603 - White  LED - 0603 - Red  LED - 0	ge ge ge HRU (6mm x 6mm Peneric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5  U3, U4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0283 \$0.0462	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang  DV LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED -	ge ge ge HRU (6mm x 6mm Peneric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5  U3, U4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0283  \$0.0491 \$0.3864 \$0.3332 \$0.0462	\$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$1 \$
LED - 0603 - Orang DV LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED - 0	ge ge ge HRU (6mm x 6mm Peneric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5  U3, U4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0491 \$0.3864 \$0.3332 \$0.0462  Total Cost per board Components Assembly	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
LED - 0603 - Orang  DV LED - 0603 - Red LED - 0603 - White LED - 0603 - Red LED -	ge ge ge HRU (6mm x 6mm Peneric	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LED8  LED7  LED6  LED5  LED3  LED4  LED2  LED1  SW1  P1, P2  BATT1  USB1  Q1  Q2, Q3, Q4, Q5, Q6  U2  U1  U5  U3, U4	\$0.0072 \$0.0128 \$0.0128 \$0.0124 \$0.0124 \$0.0118 \$0.0118 \$0.0185 \$0.0185 \$0.0200 \$0.0200 \$0.0250 \$0.0250 \$0.0250 \$0.0462  Total Cost per board Components	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$