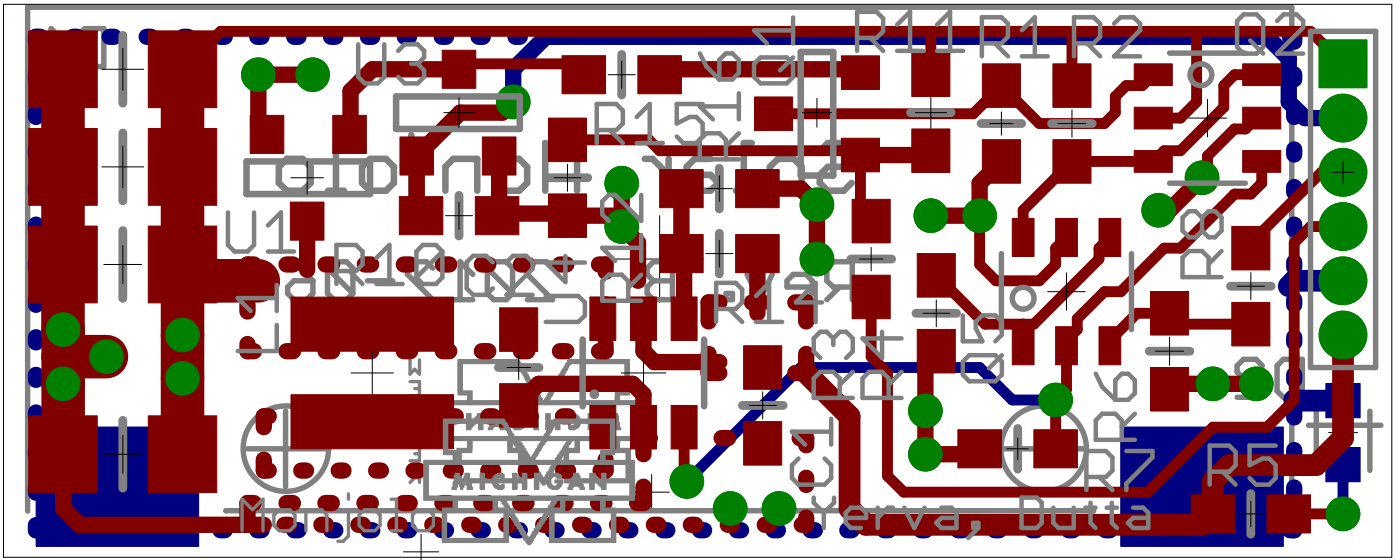
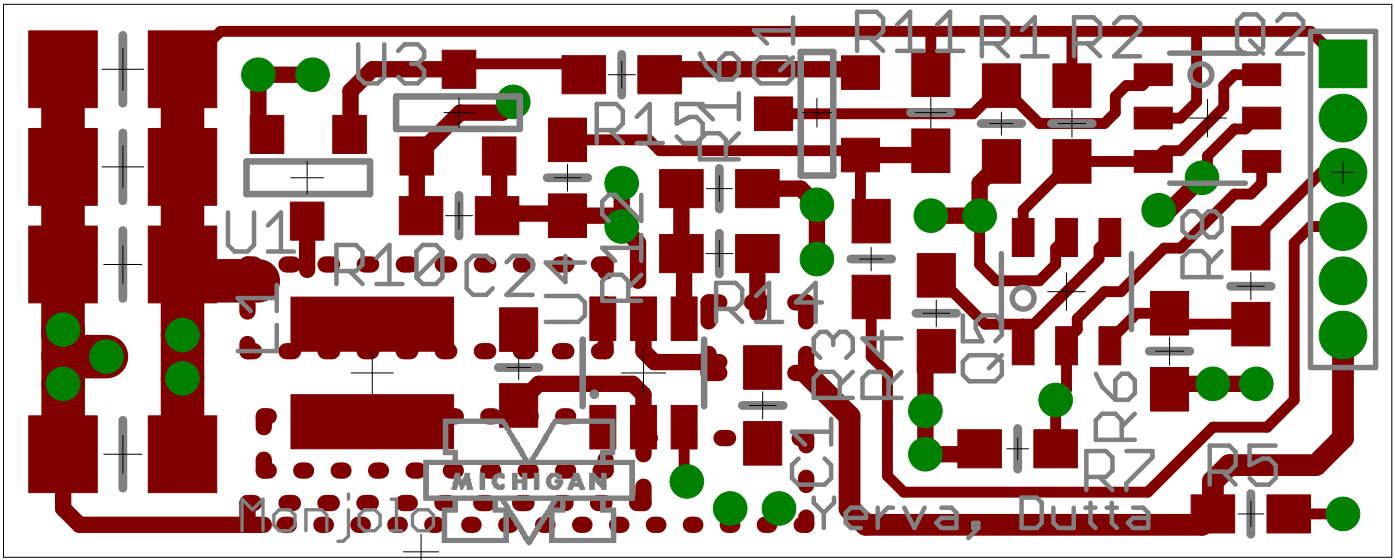
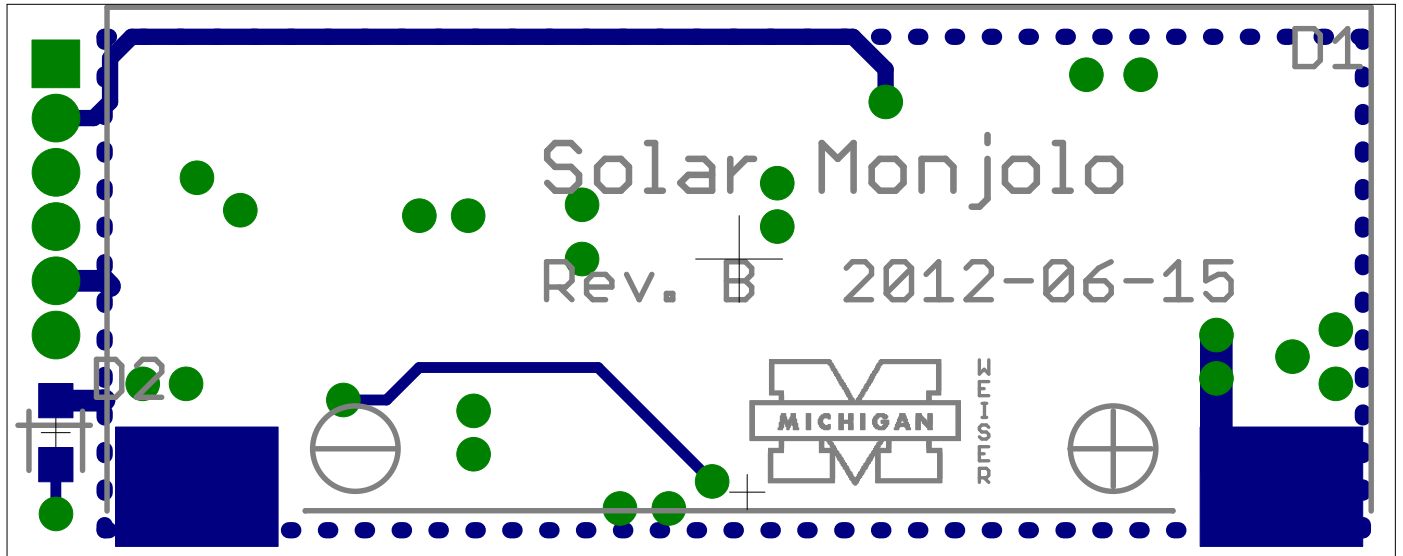


Lohit Yerva, Prabal Dutta University of Michigan	
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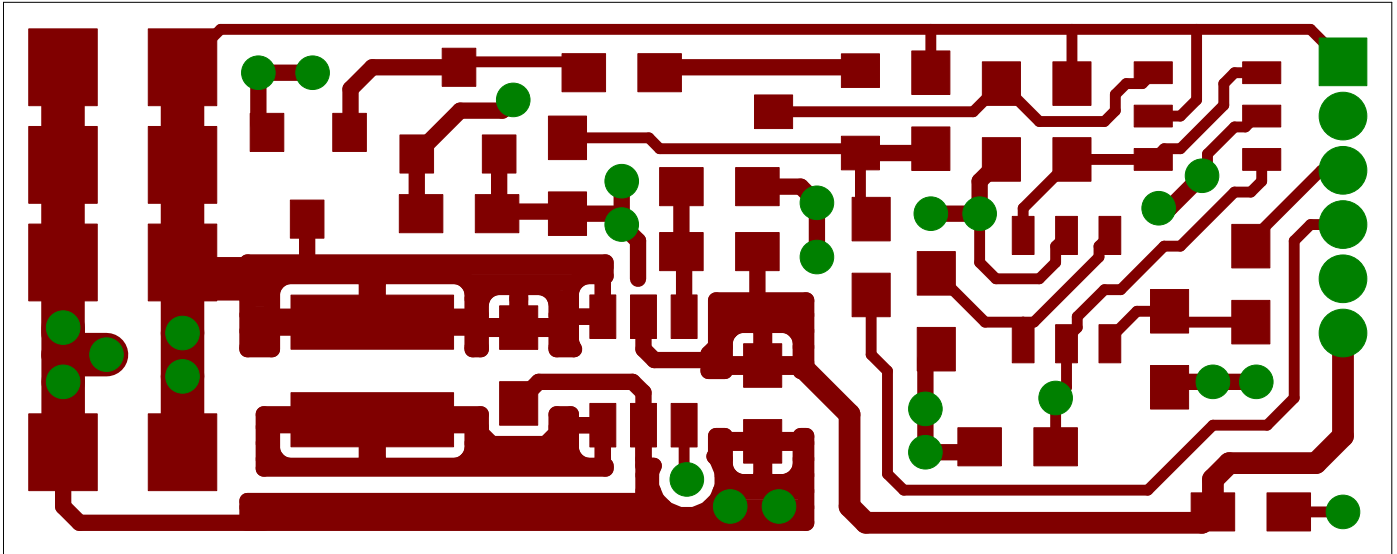
Top and Bottom Layers



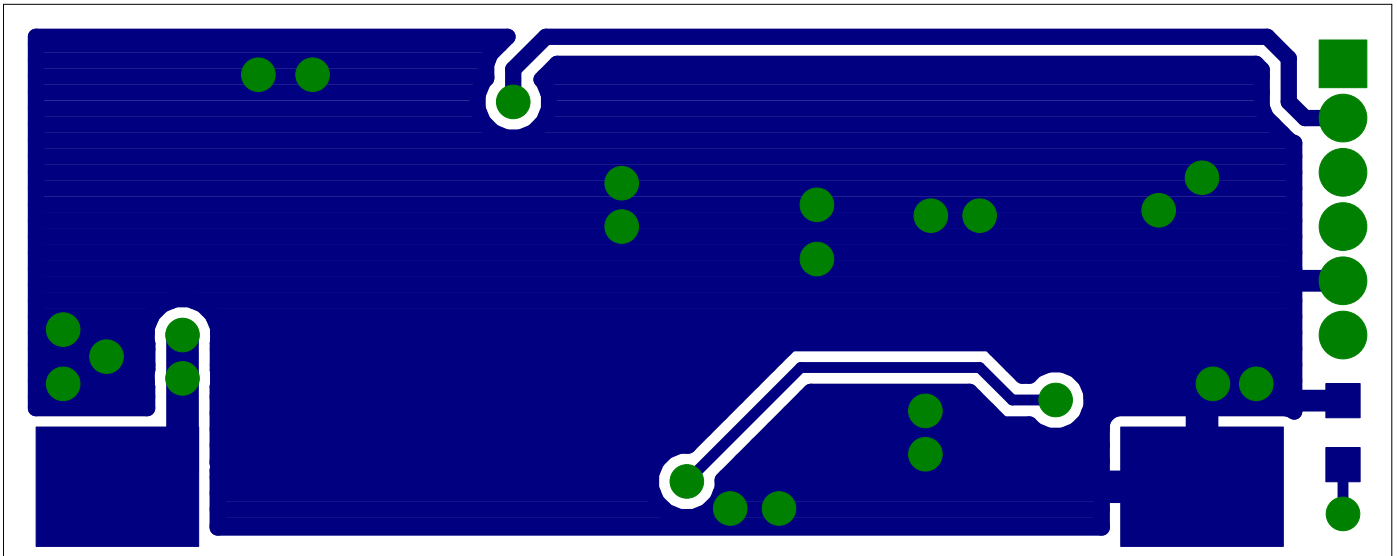


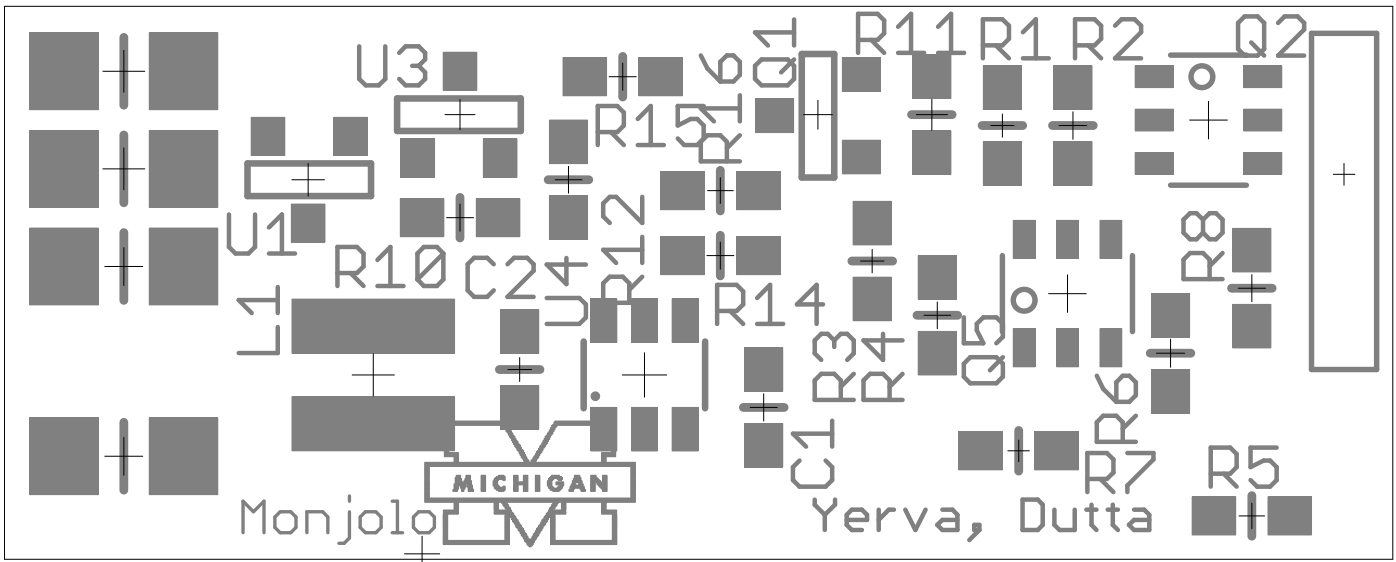


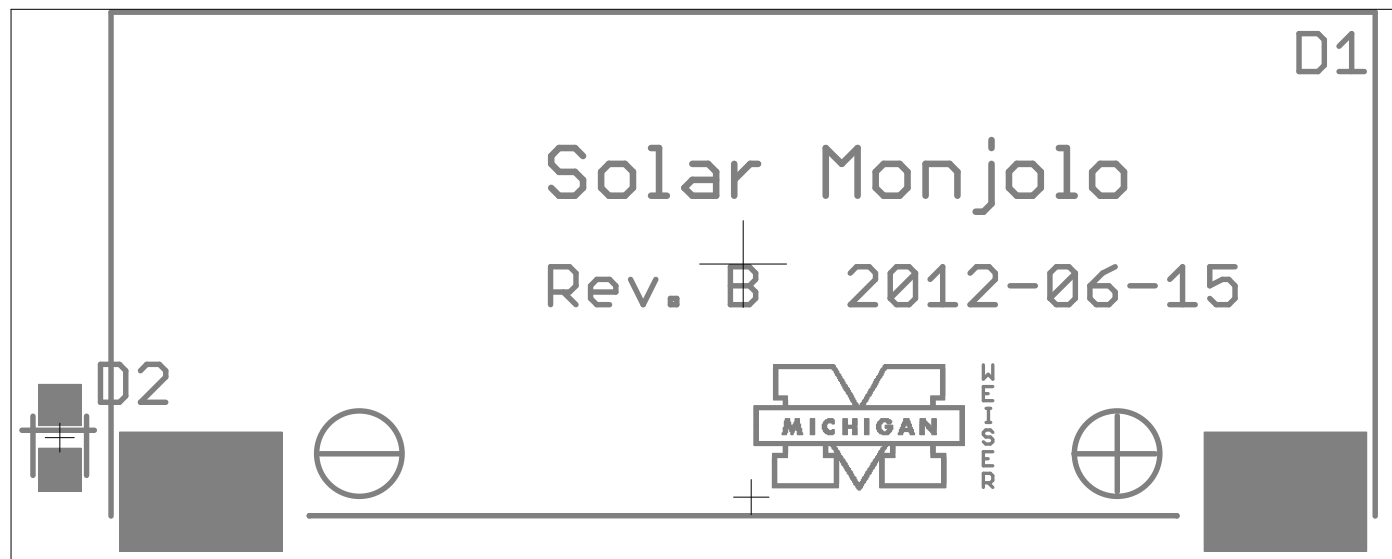
Top Copper Layer



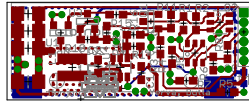
Bottom Copper Layer



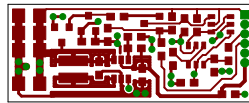




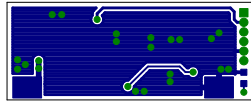
Top and Bottom Layers 1:1 Scale



Top Layer 1:1 Scale



Bottom Copper Layer 1:1 Scale



Partlist exported from Dropbat ### 4:25

Qty	Value	Layout	Parts
1	LED	LED0603	D2
1	LED RESISTOR	R0603	R5
1	PMOS	SOT23-3	Q1
3	1K	R0603	R3 R8 R10
3	1M	R0603	R2 R4 R7
1	4.7uF	C0603	C2
1	4.7uH	L-US	L1
1	10uF	C0603	C1
4	100K	R0603	R1 R6 R12 R15
1	649K	R0603	R16
1	976K	R0603	R14
1	AM-1437	Solar cell	D1
2	MOSFET NP-CH	6-TSOP	Q2 Q5
1	MCP1640T	SOT23-6	U4
1	MN1382S 2.0V	SOT23-3	U1
1	TC54VC 2.9V	SOT23-3	U3
3	100uF	C1206	C1A C1C C1D

Digikey Part #	Discription
SI2305ADS-T1-GE3CT-ND	MOSFET P-CH 8V 5.4A SOT23-3
P1.00KHCT-ND	RES 1.00K OHM 1/10W 1% 0603 SMD
P470KHCT-ND	RES 470K OHM 1/10W 1% 0603 SMD
490-3297-1-ND	CAP CER 4.7UF 6.3V 10% X5R 0603
Order from coilcraft direct	-EPL3012-472MLB
445-7486-1-ND	CAP CER 10UF 10V 10% X5R 0603
P100KHCT-ND	RES 100K OHM 1/10W 1% 0603 SMD
P649KHCT-ND	RES 649K OHM 1/10W 1% 0603 SMD
P976KHCT-ND	RES 976K OHM 1/10W 1% 0603 SMD
SI3585DV-T1-E3CT-ND	MOSFET N/P-CH 20V 2A/1.5A 6-TSOP
MCP1640T-I/CHYCT-ND	IC BOOST SYNC ADJ 0.1A SOT23-6
MN1382SCPCT-ND	IC VOLT DETECT 2.0V CMOS SMD
TC54VC2902ECB71CT-ND	IC VOLT DETECTOR 2.9V SOT23A
478-3130-1-ND	CAP TANT 100UF 6.3V 20% 1210

Notes

Any color LED

VREG = 3V (try to use <5mA) select R value appropriately

D

1M Ohm should work but using the 470K that was tested

To use External Trigger solder R11 instead of R12

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If supply low: TC54VC2102ECB713CT-ND is a tested alternative

Not needed if not using external Trigger (R12 soldered)

Much more expensive alternative at 1206 size for 100uF (478-3345-1-ND) Allowing C1B to be populated

d as well giving 400uF of capacitance.