

Preliminary Power Budget						JDT - 18
Component	Voltage (V)	Current (A)	Capacitance (F)	Resistance (Ω)	Power (W)	Net Power (W)
<u>Controller</u>						
ArduinoMega	9	0.025	--	--	0.225	0.225
-- 5 Volt Output Pins	5	0.04	--	--	0.0495	0.0495
-- 3.3 Volt Output Pins	3.3	0.05	--	--	0.02099625	0.02099625
<u>Sensor/Communication</u>						
PDV-P9005 (4)	3.3	0.0020625	--	1600	0.00680625	0.027225
-- Resistor	--	0.0020625	--	1000	0.00425390625	0.017015625
-- CdS Photoresistor	--	0.0020625	--	600	0.00255234375	0.010209375
SFH 5711 (4)	3.3	0.0005	--	--	0.00165	0.0066
-- Photodiode	2.8	0.0005	--	--	0.0014	0.0056
-- Resistor	0.5	0.0005	--	1000	0.00025	0.001
HC-SR04 (2)	5	0.0061	--	--	0.0305	0.0305
IR7393C (1)	5	0.0038	--	--	0.019	0.019
-- Resistor	3.8	0.0038	--	1000	0.01444	0.01444
-- Transmitter	1.2	0.0038	--	--	0.00456	0.00456
TSOP38238 (1)	3.3	0.0038				0.00099
-- Resistor	0.03	0.0003	--	100	0.000009	0.000009
-- Capacitor	0	0	0.0001	--	--	0
-- Receiver	3.27	0.0003	--	--	0.000981	0.000981
Contact Sensor (3)	5	0	--	--	0	0
<u>Motor Actuation</u>						
H-Bridge (2)	3.3	0.5	--	--	1.65	3.3
Motor (2)						
-- Peak	9	0.8	--	--	7.2	14.4
-- Typical	9	0.15	--	--	1.35	2.7
<u>Total Draw</u>						
PDV-P9005 Config. Max.	--	1	--	--	--	18.002715
PDV-P9005 Config. Typical	--	2	--	--	--	6.302715
SFH 5711 Config. Max.	--	1	--	--	--	17.98209
SFH 5711 Config. Typical	--	2	--	--	--	6.28209
Legend:						
<b>Bolded Terms</b>	Absolute Observable Maximums (e.g. Peaks for Turn On)					
<b>Red Values</b>	Measured In-Lab					

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