

1

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A

A

B

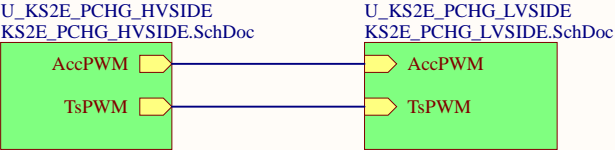
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Title			
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Date:	2/20/2022	Sheet	of
File:	C:\Users\...\KS2E_PRECHARGE.SchDoc		Drawn By:

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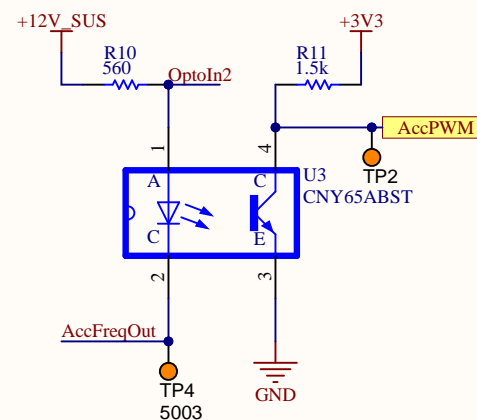
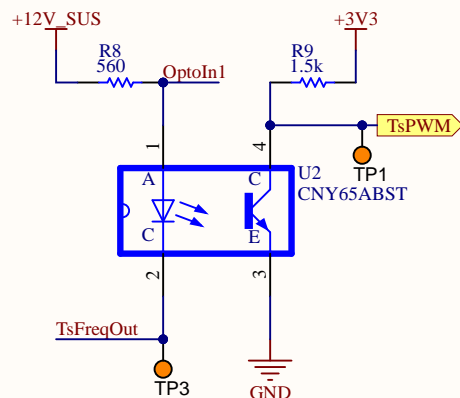
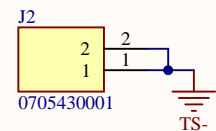
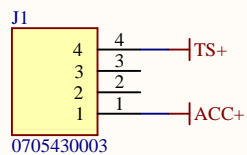
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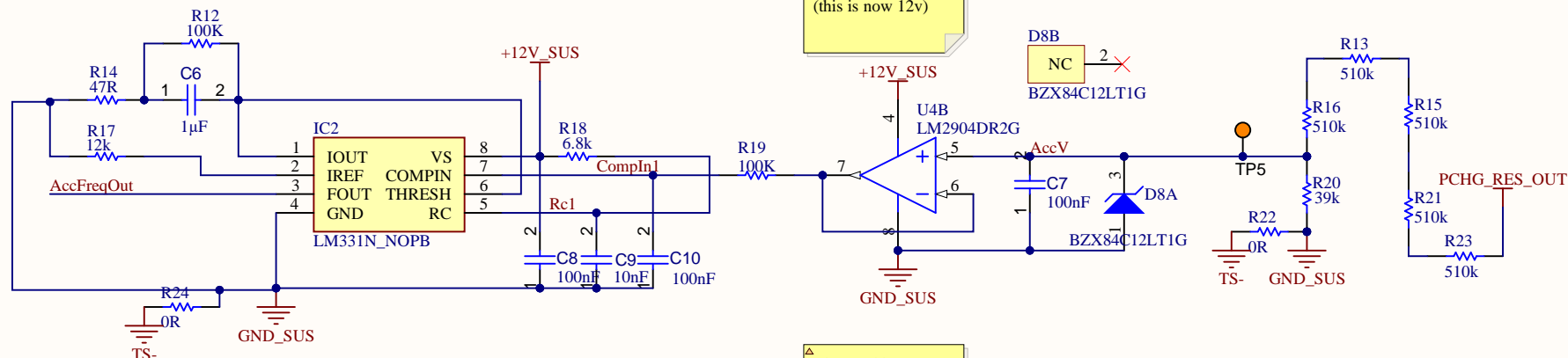
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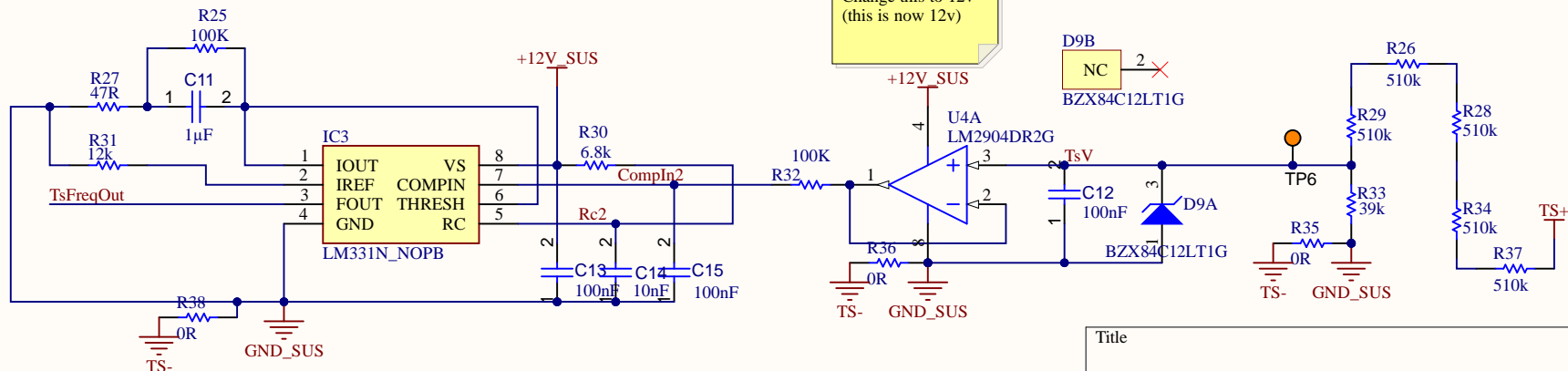
Change this to 12v  
(this is now 12v)



C

C

Change this to 12v  
(this is now 12v)



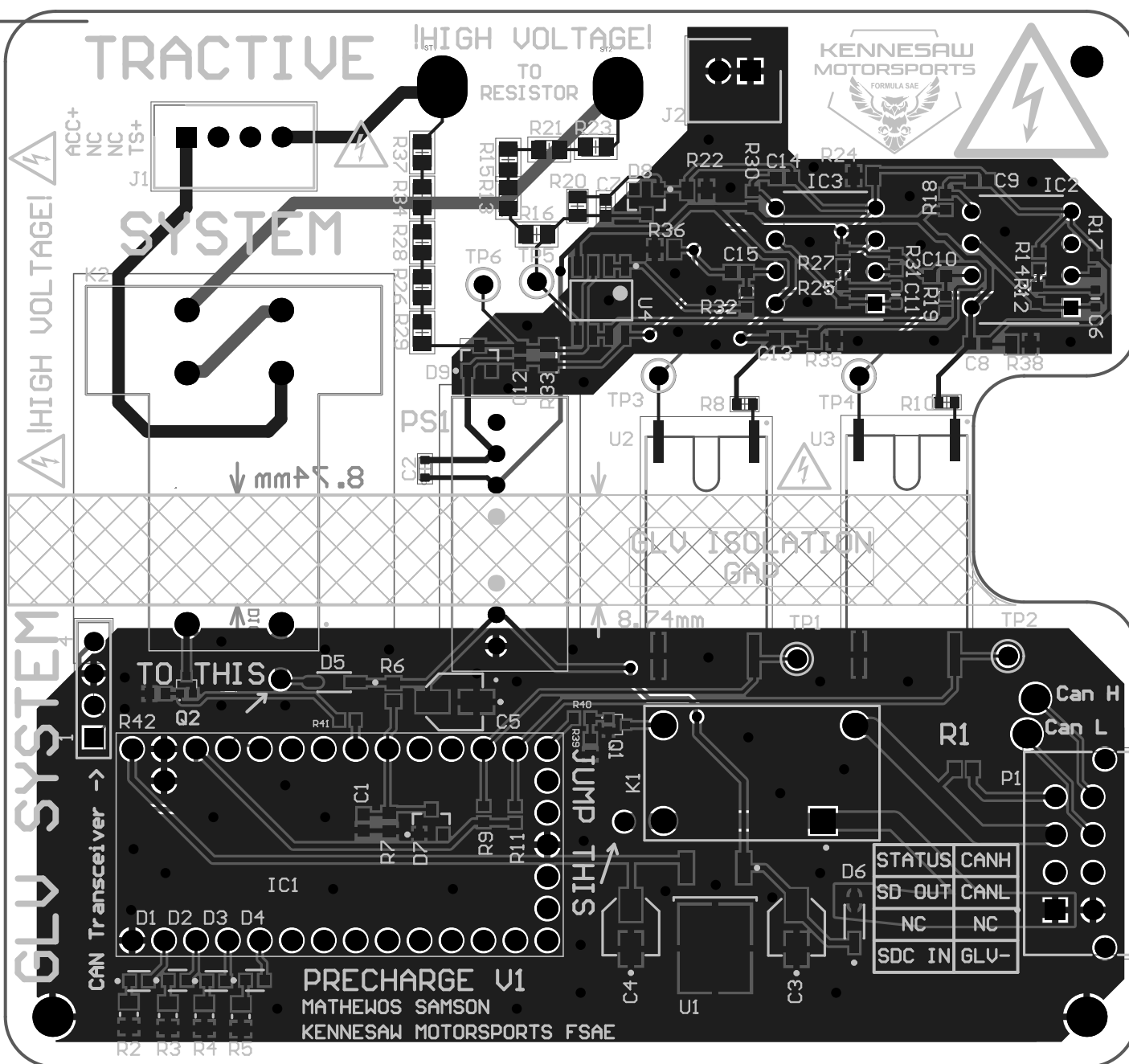
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D

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# Precharge Voltage Sensing

3275.59



3188.98

Comment	Description	Designator	Footprint	LibRef	Quantity
Capacitor 100 nF +/- 10% 50 V 0603	Chip Capacitor, 100 nF, +/- 10%, 50 V, 0603 (1608 Metric)	C1, C7, C8, C9, C10, C12, C13, C14, C15	CAPC1608X90X40N110720	COMP-001-00017-6	9
Capacitor 1uF +/-0.1% 25V 0603	Chip Capacitor, 1uF +/-0.1%, 25V, 0603, Thickness 1 mm	C2, C6, C11	CAPC0603(1608)100_L	COMP-001-00055-4	3
EEEFK1E100R	CAP ALUM 10uF 20% 25V SMD	C3, C4, C5	FP-FKB-MFG	COMP-05427-000055-1	3
LTST-C193KCKT-5A	LED GREEN CLEAR CHIP SMD	D1, D3	FP-LTST-C193KCKT-5A-MFG	COMP-2000-06622-2	2
LTST-C193KRKT-5A	LED RED CLEAR CHIP SMD	D2, D4	FP-LTST-C193KRKT-5A-MFG	COMP-2000-06623-2	2
1N5819HW-7-F	DIODE SCHOTTKY 40V 1A SOD123	D5, D6	FP-SOD123-IPC_A	COMP-0303-00003-3	2
BZX84C3V3LT1G	Zener Voltage Regulator, 225 mW, 3 Pin SOT-23, Pb-Free, Tape and Reel	D7	ONSC-SOT-23-3-318-08_V	COMP-1060-01189-1	1
BZX84C12LT1G	Zener Voltage Regulator, 225 mW, 3 Pin SOT-23, Pb-Free, Tape and Reel	D8, D9	ONSC-SOT-23-3-318-08_V	COMP-1060-00857-1	2
1N4148WT	High Conductance Fast Switching Diode, 75 V, -55 to 150 degC, 2-Pin SOD523F, RoHS	D10	FAIR-SOD-523F-2_V	COMP-0881-00001-1	1
BZX84C36LT1G	Zener Voltage Regulator, 225 mW, 3 Pin SOT-23, Pb-Free, Tape and Reel	D11	ONSC-SOT-23-3-318-08_V	COMP-1060-01178-1	1
TEENSY_4.0	Integrated Circuit	IC1	TEENSY40	TEENSY_4.0	1
LM331N_NOPB	Integrated Circuit	IC2, IC3	DIP794W53P254L959H508Q8N	LM331N_NOPB	2
0705430003	Connector	J1	SHDR4W46P0X254_1X4_1271X660X1181P	0705430003	1
0705430001	Connector	J2	SHDR2W46P0X254_1X2_737X660X1181P	0705430001	1
17751D3-12	RELAY GEN PURPOSE SPST 3A 12V	K1	FP-17751D3-12-MFG	COMP-03396-000213-1	1
G2RG-2A-X-DC12	Relay or Connector 3 mm Pitch Micro-FIT 3.0 Connector, 17.27 mm Mated Height, Vertical, Through Hole, 8 Circuits, -40 to 105 degC, RoHS, Tray	K2	G2RG2AXDC12	G2RG-2A-X-DC12	1
43045-0812		P1	MOLX-43045-0812_V	COMP-1594-00003-1	1
61300411821	THT Vertical Socket Header WR-PHD, Pitch 2.54 mm, Single Row, 4 pins	P2	61300411821	COMP-1502-01316-1	1
SPAN02A-12	Power Supply	PS1	SPAN02A12	SPAN02A-12	1
SSM3K56FS.LF	MOSET (N-channel)	Q1, Q2	1SS423	SSM3K56FS.LF	2
10K		R1	RESC1608X55X30ML15T15	COMP-2000-00318-1	1
RN73C2A200RBDT	SMD Chip Resistor, Thin Film, 2000, 100 V, 0805 (2012 Metric), 100 mW, 0.1%, RN73 Series	R2, R3, R4, R5	FP-RN732A-MFG	COMP-03211-010956-1	4
20k		R6	RESC1608X55X30ML15T15	COMP-2000-00318-1	1
6.8k		R7	RESC1608X55X30ML15T15	COMP-2000-00318-1	1
ERJ3KF1002V	Chip Resistor, 10 Kohm, +/- 1%, 0.1 W, -55 to 155 degC, 0603 (1608 Metric), RoHS, Tape and Reel	R8, R9, R10, R11, R12, R14, R17, R18, R19, R25, R27, R30, R31, R32	RESC1609X55X30LL15T15	COMP-1012-00623-3	14
510k		R13, R15, R16, R21, R23, R26, R28, R29, R34, R37	RESC2013X60X40NL20T25	COMP-2001-00651-1	10
39k		R20	RESC2013X60X40LL20T25	COMP-2001-00636-1	1
0R	Chip Resistor, 0 Ohm, 0.125 W, -55 to 125 degC, 0805 (2012 Metric), RoHS, Tape and Reel	R22, R24, R35, R36, R38	RESC2013X65X40LL15T20	COMP-2000-07514-1	5
ERA6AE8393V		R33	RESC2013X60X40LL20T25	COMP-2001-00636-1	1
10k ohm	Chip Resistor, 220 Ohm, +/- 1%, 0.1 W, -55 to 155 degC, 0603 (1608 Metric), RoHS, Tape and Reel	R39, R42	RESC1608X55X30LL15T15	COMP-2000-00335-2	2
100 ohm	Chip Resistor, 220 Ohm, +/- 1%, 0.1 W, -55 to 155 degC, 0603 (1608 Metric), RoHS, Tape and Reel	R40, R41	RESC1608X55X30LL15T15	COMP-2000-00335-2	2
PTH-M2D5X5	M2 PTH (2.5mm), 5mm pad	ST1, ST2	PTH-M2D5X5	COMP-00028-00004-2	2
5003	Test Point, Orange, Height 4.6 mm, Tail Length 3 mm, 1-Pin THD, RoHS	TP1, TP2, TP3, TP4, TP5, TP6	KSTN-5003	COMP-002-00037-2	6
LF50ABDT-1R	500mA, Very Low Drop (0.45V) Voltage Regulator, 5V, 3-Pin DPAK, Tape and Reel	U1	TO-252_M	COMP-0244-00070-1	1
CN165ABST	Semiconductor, Optocoupler, 600 mil High Voltage Isolation Dist, CTR, 80 240%, SMD-4	UZ, U3	SOIC762P1940X755-4N	CN165ABST	2
LM2904DR2G	Single Supply Dual Operational Amplifier, 3 to 32 V, -40 to 105 degC, 8-Pin SOIC, Pb-Free, Tape and Reel	U4	ONSC-SOIC-8-751-07_V	COMP-1310-00321-1	1