

PS2

PS1

ISOL1

GDS Output board position

Gate Drive Power

HV

UD3c V1.0 ©Jul 2020

TMAX

-Electronics.de

Original Circuit Design
By Steve Ward and Jens Kernries

GD out

UBus In Sense

Fan 12V

IBus Sense

Thermistors

D14

TX

Q2

RX

J8

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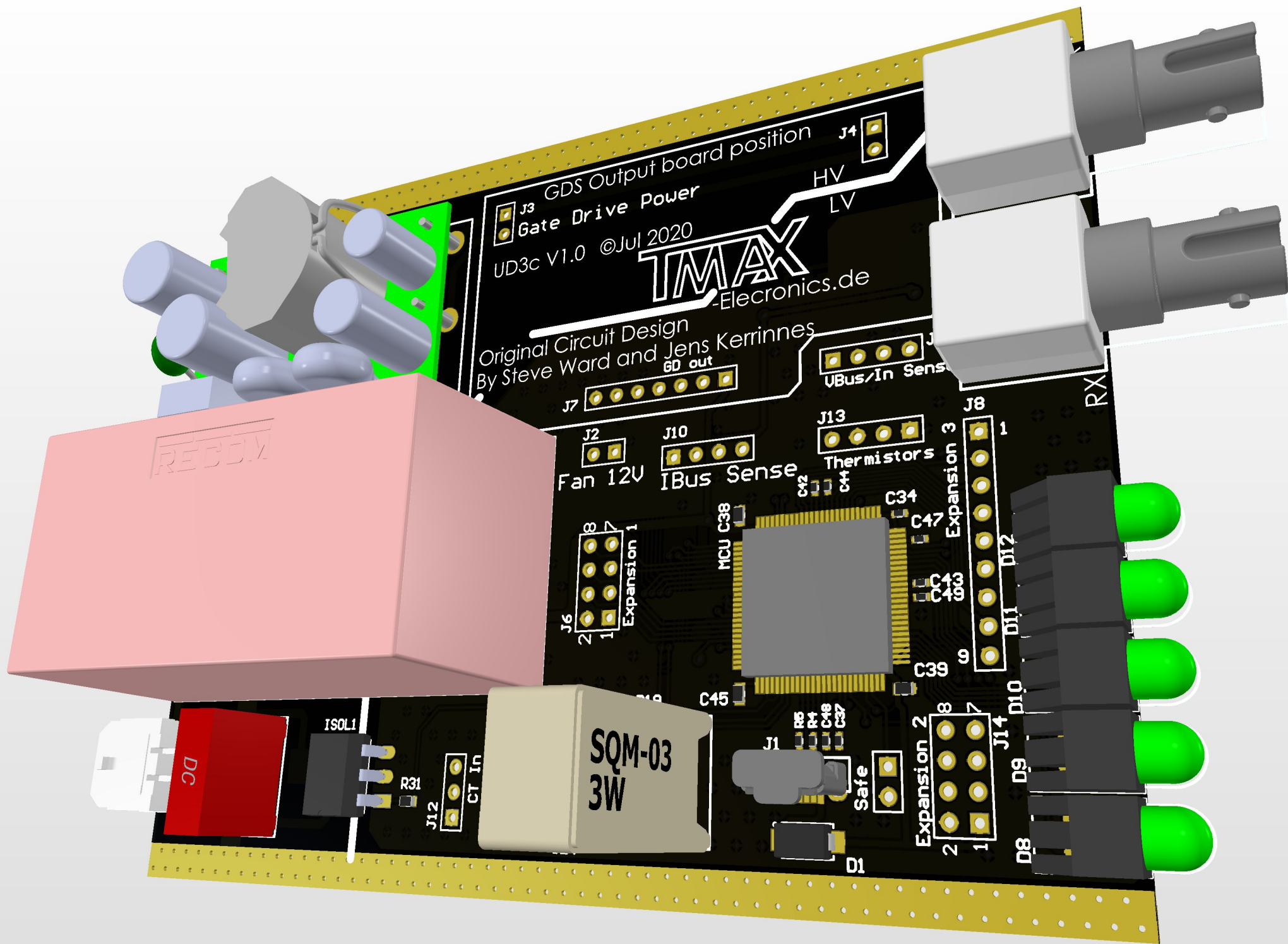
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Designator	Comment	Footprint	LibRef	Quantity	Description
C1	10uF 12V	0805	Cap	1	
C2	100p	0603	Cap	1	
C3, C4, C5, C6, C41	100n	0603	Cap	5	
C7	22uF 25V	2917 Tantalum	Cap Polar	1	
C14, C15, C16, C17, C18, C20	C0805C103K1RACT U	0603	C0805C103K1RACT U		Capacitor, 10nF, MLCC, 50V, X7R, 6 10%, SMD
C19, C21, C27	C0805C102K5RACT U	0603	C0805C102K5RACT U		Capacitor, 1nF, MLCC, 50V, X7R, 3 10%, SMD
C22	1n	0603	Cap	1	
C23, C24, C25, C26	C0805C151J5GACT U	0603	C0805C151J5GACT U		Capacitor, 150pF, MLCC, 50V, COG, 4 5%, SMD
C28, C29, C30, C31	C0805C105K4RACT U	0603	C0805C105K4RACT U		Capacitor, 1uF, MLCC, 16V, X7R, 4 10%, SMD
C34, C37, C42, C43, C44, C48, C49	1uF	0402	Cap	7	
C35, C36	18pF	0603	Cap	2	
C38, C45, C51	1uF	0603	Cap	3	
C39, C46, C52	100nF	0603	Cap	3	
C40	10uF	0603	Cap	1	
C47	100nF	0402	Cap	1	
C50	10nF 275V AC	Würth Film Cap 13x5	Cap	1	
C53	C0805C104K5RACT U	0603	C0805C104K5RACT U		Capacitor, 0.1uF, MLCC, 50V, X7R, 1 10%, SMD
D1, D2	Diode	DO-214	Diode	2	Default Diode
D3	SMBJ5.0A-TR	do-214	SMBJ170A	1	
D4	Bridge1	MBS-2	Bridge1	1	Full Wave Diode Bridge
D8	Interrupt	LED 5mm Right angle	LED	1	
D9	Fault	LED 5mm Right angle	LED	1	
D10	Current Limit	LED 5mm Right angle	LED	1	
D11	Serial Data	LED 5mm Right angle	LED	1	
D12	Power	LED 5mm Right angle	LED	1	
D14	HFBR-141X	HFBR-1414MZ	HFBR-141X		Fiber optic transmitter. ST connector
IC1	TL082BCD	SOIC8	TL082	1	
J1	USB 2.0 Type B Micro	WM9734CT	USB 2.0 Type B Micro	1	
J2	Header 2	HDR1X2	Header 2	1	Header, 2-Pin
J3, J4	Gate Drive Power	HDR1X2	Header 2	2	Header, 2-Pin
J5	PRG	HDR1X5	Header 5	1	Header, 5-Pin
J6	Expansion 1	HDR2X4	Header 4X2	1	Header, 4-Pin, Dual row
J7	GD out	HDR1X7	Header 7	1	Header, 7-Pin
J8	Expansion 3	HDR1X9	Header 9	1	Header, 9-Pin
J9	Mains in	Micro Fit 4 Pin	Molex MicroFit 4 Pin	1	
J10	iBus Sense	HDR1X4	Header 4	1	Header, 4-Pin
J11	VBus/In Sense	HDR1X4	Header 4	1	Header, 4-Pin
J12	CT In	HDR1X3	Header 3	1	Header, 3-Pin
J13	Thermistors	HDR1X4	Header 4	1	Header, 4-Pin
J14	Expansion 2	HDR2X4	Header 4X2	1	Header, 4-Pin, Dual row
L1	10uH SW	1008	Inductor	1	
L3	DLW58TN501SQ2L	SON127P600 4 PCS (8.50mm x 5.60mm)	common mode choke	1	
MCU	CYC5868AXI-LP032	TQFP100	CYC5868AXI-LP032	1	
PS1	RAC20	RAC20 Power supply	RAC20 Power supply	1	
PS2	CFM12 PS	CFM12 power supply	CFM12 power supply	1	
Q1	Mosfet N	LFPAK56	Mosfet N	1	
Q2	HFBR-141X	HFBR-1414MZ - receiver	HFBR-141X_receiver		Fiber optic transmitter. ST connector
Q3	Mosfet N	sot 23	Mosfet N	1	
R1	30k	0603	Resistor	1	
R2	158k	0603	Resistor	1	
R4, R5	22	0402	Resistor	2	
R6	470hm 350V	2512	Resistor	1	
R7	49 9	0603	Resistor	1	
R8	470	0603	Resistor	1	
R9, R10	RN732ATD2501B2 5	0603	Resistor	2	
R11, R12, R13, R14	RN732BTD5001B2 5	0603	Resistor	4	
R15, R16, R20	CRCW08051K00FK EA	0603	CRCW08051K00FK EA		Resistor, Thick Film, 1K, 1/8W, 3 150V, 1%, SMD
R17, R18, R21, R22	CRCW0805100R0FK EA	0603	CRCW08051K00FK EA		Resistor, Thick Film, 1K, 1/8W, 4 150V, 1%, SMD
R19	261-3.3-RC	SQM-03 3W	CMF60100R00JKEA		Resistor, 100 Ohm, 1 1/2W, 500V, 5%
R23, R24, R25, R26, R27, R29	1k	0603	Resistor	6	
R28	470hm	0603	Resistor	1	
R30	680	0603	Resistor	1	
R31	220	0603	Resistor	1	
Reg1	Buck regulator	TSOT26	AP6320	1	
Safe	Default	HDR1X2	Header 2	1	Header, 2-Pin
T7	OptoTriac	Dip6	OptoTriac	1	
X1	16MHz	ECS-3225MV Oscillator	Quarz crystal	1	