

**DRSSTC UNIVERSAL DRIVER V2.7 Rev C** Bill of Materials

Updated 15 Jan 2015

Mouser Order: <http://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=ea98910c97>

Part Number	Description	Package	Reference Designator	Vendor	Qty	Price (ea)	Ext. Price	Notes
<b>SEMICONDUCTORS (SMD)</b>								
74HC14DR2G	Hex schmitt trigger INVERTER, SOIC	SO14	IC4	Mouser	1	0.46	0.46	SN74HC14DG4
74HC08DR2G	Quad 2-input AND gate, SOIC	SO14	IC5	Mouser	1	0.39	0.39	
SN74HC74DR	Dual D type positive edge triggered FLIP FLOP, SOIC	SO14	IC6	Mouser	1	0.56	0.56	
LM311DR	Comparator, SOIC	S08	IC7	Mouser	1	0.47	0.47	
TL3116CD	High Speed Comparator, SOIC	S08	IC8	Mouser	1	2.94	2.94	TI Samples (please buy to support TI)
UCC27423D	Dual 4A gate driver with enable, SOIC	S08	IC9, IC10	Mouser	2	2.39	4.78	TI Samples (please buy to support TI)
LM8365BALMF27	2.7V Open Collector Under Voltage Lock-Out	SOT23-5	IC11	Mouser	1	0.79	0.79	TI Samples (please buy to support TI)
FDD8424H	Dual Complimentary Mosfet 40V 20A	TO252-4	U1, U2, U3, U4	Mouser	4	0.95	3.8	
<b>RESISTORS (SMD)</b>								
CRCW08051R00FKEA	1 ohm Resistor, SMD	0805	R31	Mouser	1	0.08	0.08	
CRCW121015R0JNEAHP	15 ohm 1W Resistor, SMD	1210	R19, R24	Mouser	2	0.66	1.32	
CRCW0805470RFKEA	470 ohm 0805 Resistor, SMD	0805	R4, R6, R9, R14, R25, R26	Mouser	6	0.048	0.288	
CRCW08051K00FKEA	1k 0805 Resistor, SMD	0805	R2, R3, R5, R8, R10, R11, R12, R15, R18, R21, R22, R23	Mouser	12	0.048	0.576	
CRCW08051K80FKEA	1.8k 0805 Resistor, SMD	0805	R16	Mouser	1	0.08	0.08	
CRCW08054K70FKEA	4.7k 0805 Resistor, SMD, 1%	0805	R30	Mouser	1	0.08	0.08	
CRCW080510K0FKEA	10k 0805 Resistor, SMD	0805	R13	Mouser	1	0.08	0.08	
652-TC33X-2-503E	50k 3mm Trimmer Resistor SMD	3mm	R29	Mouser	1	0.25	0.25	UD27B for UVLO trip set - Was 33k 0805 Resistor in UD27A
CRCW0805100KFKEA	100k 0805 Resistor, SMD	0805	R7, R27	Mouser	2	0.08	0.16	
<b>CAPACITORS (SMD)</b>								
C0805C151J5GACT	150pF COG(NPO) Ceramic Capacitor 0805	0805	C32	Mouser	1	0.1	0.1	
C0805C102K5RACTU	50volts 1000pF X7R Ceramic 10% 0805	0805	C14, C17, C33*, C34	Mouser	4	0.02	0.08	C33*: 220pF for original UD2, 2.2nF for CM600 & Large Bricks
C0805C103K1RACTU	10nF 50V X7R Ceramic Capacitor 0805	0805	C10	Mouser	1	0.1	0.1	
C0805C104K5RACTU	0.1uF 50V X7R Ceramic Capacitor 0805	0805	C4, C5, C7, C8, C11, C12, C13, C15, C16, C18, C20, C26, C27, C36	Mouser	14	0.027	0.378	
C0805C105K4RACTU	1uF 16V X7R Ceramic Capacitor 0805	0805	C6, C9, C19, C25	Mouser	4	0.12	0.48	
C1206C105K5RACTU	1uF 50V X7R Ceramic Capacitor 1206	1206	C24, C31	Mouser	2	0.28	0.56	
C3225X7R1H225K	2.2uF, 50V X7R Ceramic Capacitor 1210	1210	C21, C30	Mouser	2	0.62	1.24	
GRM31CF51H475ZA01L	4.7uF, 50V Y5V Ceramic Capacitor 1206	1206	C22, C23, C28, C29, C35	Mouser	5	0.54	2.7	
<b>CAPACITORS &amp; RESISTORS (Through Hole)</b>								
EKZH350ELL221MHB5D	220uF 35V Electrolytic 8mm 3.5mm Spacing, Through Hole	E3,5-8	C1, C4A, C4B	Mouser	3	0.46	1.38	Originally 647-UPJ1V101MPD1TD 100uF 35V
661-ELXZ25OELL331MH1	330uF 25V Electrolytic 8mm 3.5mm Spacing, Through Hole	E3,5-8	C2, C3	Mouser	2	0.45	0.9	
72-T93YA-10K	10k 23-turn Variable Resistor, Through Hole	T93	R20	Mouser	1	1.54	1.54	
293-5.1-RC	5.1 ohm 500mW Resistor, Through Hole	0309/12	R17, R28	Mouser	1	0.15	0.15	Install under board; R28 Optional with resistor of your choice
MOS2CTS2R510J	51 ohm 2W Resistor, Through Hole	411/15	R1	Mouser	1	0.13	0.13	
EKYB350ELL102MJ30S	1000uF 35VDC Low Impedance (5mm spacing, 3.5 better)	10x30mm	C4C	Mouser	1	0.79	0.79	UD27B - Optional for added capacitance (8mm dia x 3.5mm)
<b>DIODES &amp; REGULATORS</b>								
DF04SA-E3/77	Bridge Rectifier 1A 400V, SMD	B405	B1	Mouser	1	0.79	0.79	
MBR0530	Schottky Diode 0530 30V 500mA, SMD	SOD123	D1, D2, D4, D5, D6, D7	Mouser	6	0.34	2.04	
GSD2004W-E3-08	Diode, General Purpose, SMD	SOD123	D14, D15	Mouser	2	0.13	0.26	Added one for UD27C
MCL4148-TR/MCL4148-TR3	Signal Diode, 100V 350mA, SMD	SOD323	D3, D8, D9, D10, D11, D12, D13	Mouser	7	0.05	0.35	or LS4148 - much easier to solder!
MC7805ECDTX	5V Voltage Regulator Linear 0.5A SMD	TO-252-3	IC1	Mouser	1	0.66	0.66	TI Samples (please buy to support TI)
R-789-0-0.5	9V RECOM Regulator Switching 36V max 1A Through Hole	R78XX	IC2	Mouser	1	7.38	7.38	Can replace with 12V Regulator, or Linear 7812/09 (heat sink)
MC7824BD2TG	24V Voltage Regulator Linear 1.5A SMD	D2PAK-2	IC3	Mouser	1	0.92	0.92	TI Samples (please buy to support TI)
LTST-C171TBKT	LED - SMD Blue Clear 466nm	0805	LED-PWR	Mouser	1	0.26	0.26	Choose any color of your fancy! (LS R976-NR-1 for 633nm, LO R976 PS-1 for 606nm, or any other 0805 SMD LED)
<b>FIBER, INDUCTOR, CONNECTORS</b>								
OPF2412T	Optical ST Receiver	-	RX1	Mouser	1	11.99	11.99	
IF-D95T	Industrial Fiber Receiver	-	RX2	Digikey	1	6.55	6.55	
SLOT-7 series	Phase Lead Inductor Slot-7	Slot-7	L1	Coilcraft	1	0	0	Coilcraft Sample (please buy to support Coil Craft!)
0555-0-15-01-30-27-10-0	Phase lead Inductor Pin socket	-	-	Mouser	5	0.334	1.67	4 is good enough to save cost
69190-403	3 Pin Header, RL & R Select	0.1"	SV1	Mouser	1	0.11	0.11	
69190-402	2 Pin Header, UVLO Jumper	0.1"	JMP1	Mouser	1	0.13	0.13	For UD27B - Can replace with just a wire
M20-9980345	2x3 Header, Phase selection	0.1"	PHASE	Mouser	1	0.26	0.26	
M7581-05	Jumper for phase selection/inductor	0.1"	-	Mouser	4	0.18	0.72	Added one for UD27B
22-01-2067	Molex 0.100 (2.54mm) Center Connector - 6 Pin	22-01-2067	LED	Mouser	1	0.26	0.26	To wire
22-01-2027	Molex 0.100 (2.54mm) Center Connector - 2 Pin	22-23-2021	20VAC, 24VDC, GDT1, GDT2, FB-CT, OCD-CT	Mouser	6	0.2	1.2	To wire
22-28-0360	Molex 0.100 Header strip (polarized) 1x36	22-28-0360	-	Mouser	1	1.59	1.59	On Board
08-52-0123	Molex Pins for 22-01-20X7	22-01-20X7	-	Mouser	18	0.092	1.656	Pins
<b>OTHERS (EXTERNAL, OPTIONAL)</b>								
546-186D20	20VCT 115/230V 30VA Transformer	-	-	Mouser	1	13.18	-	18-20VAC transformer...
PMT-24V50W1AA	24VDC 2.09A 50W SMPS 85 VAC to 264 VAC	Delta	-	Mouser	1	18.54	-	... or 24VDC Power Supply (only one required)
270-238	Aluminium Project Box	-	-	RadioShack	1	3.49	-	Cheap project box, works great for me
446164951	Ferrite Clamp-on Bead for GDT (250 Ohms at 100Mhz)	-	-	Mouser	1	0.75	-	For common mode noise reduction on GDT output

[www.loneoceans.com/labs/](http://www.loneoceans.com/labs/)

Prepared by Gao Guangyan; See website for more UD2x details.

**\$66.43** Total Without Optionals (check your components)  
 Note some components required from Digikey / Coilcraft