

Carrier Board for Advanced Phase-Shift PWM Controller UCC3895

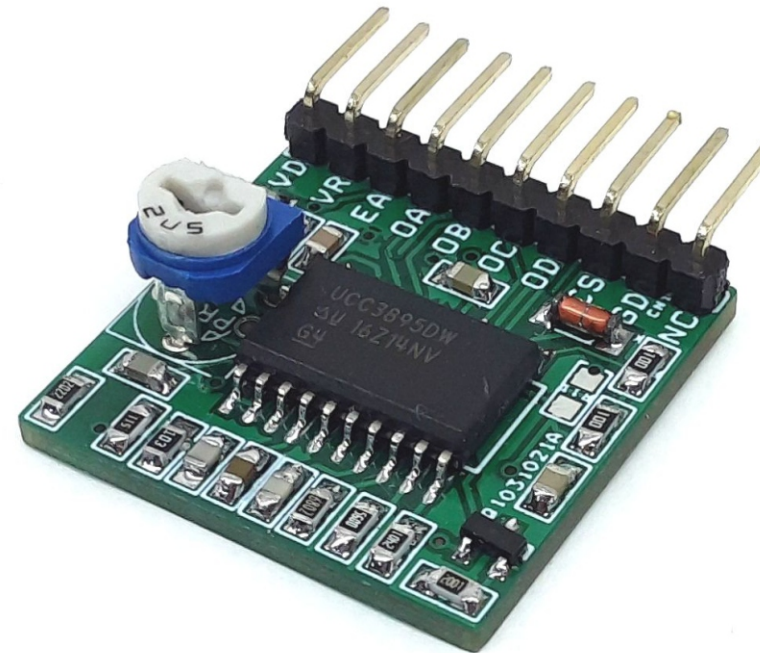
This is a Phase-Shifted Full-Bridge PWM UCC3895 carrier board that contains all of the features necessary to implement a phase-shifted full-bridge topology power converter. All inputs and outputs pins are accessible using a header connector. A highly-efficient DC-DC converter can be created using this carrier board + External H-Bridge and Transformer. Refer to the datasheet of UC3895 and schematic to configure the working frequency, current feedback, delays, etc.

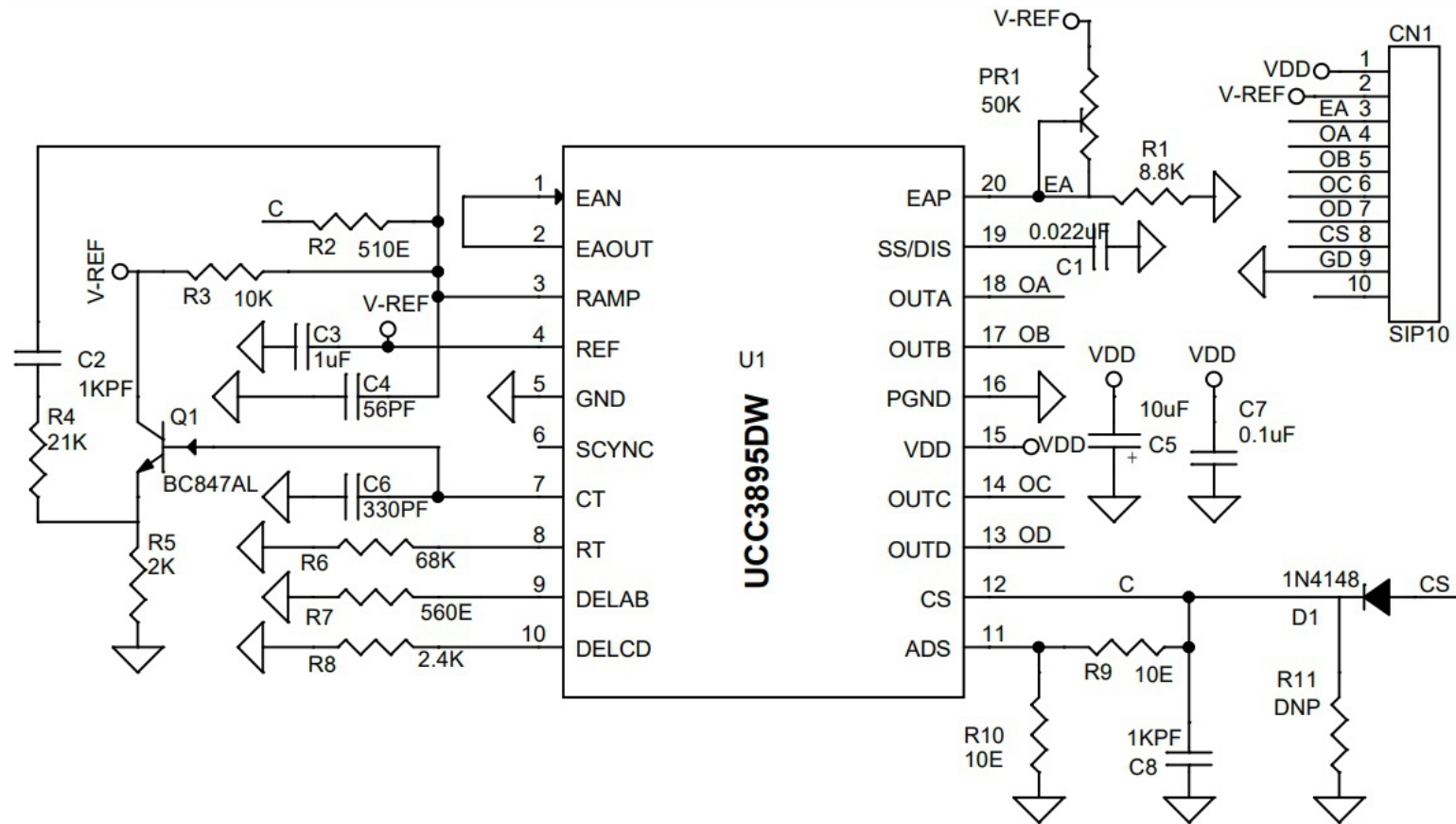
The **UCC3895** is a phase-shift PWM controller that implements control of a full-bridge power stage by phase shifting the switching of one half-bridge with respect to the other. The device allows constant frequency pulse-width modulation in conjunction with resonant zero-voltage switching to provide high efficiency at high frequencies. The part is used either as a voltage-mode or current-mode controller. While the UCC3895 maintains the functionality of the UC3875/6/7/8 family and UC3879, it improves on that controller family with additional features such as enhanced control logic, adaptive delay set, and shutdown capability. Because the device is built using the BCDMOS process, it operates with dramatically less supply current than its bipolar counterparts. The UCC3895 operates with a maximum clock frequency of 1 Mhz.

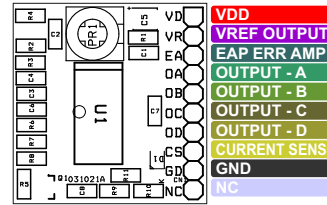
Note: This is a carrier board for UCC3895 phase-shift chip, refer to the datasheet of UCC3895 IC to learn more about setting up the delay, current sense, duty cycle, frequency.

Features

- Operating Power Supply 10V to 16.5V DC
- Default Frequency 195Khz
- Programmable-output turn on delay
- Adaptive delay set
- Bidirectional oscillator synchronization
- Voltage-mode, peak current-mode, or average current-mode control
- Programmable soft start, soft stop, and chip disable via a single pin
- 0% to 100% duty-cycle control
- 7-MHz error amplifier
- Operation to 1 Mhz
- Typical 5-mA operating current at 500 kHz
- Very low 150- μ A current during UVLO
- PCB dimensions: 24.40 x 26.04 mm





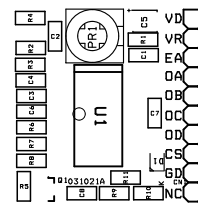


BOM						
NO.	QNTY.	REF.	DESC.	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	10 PIN MALE HEADER RIGHT ANGLE PITCH 2.54MM	WURTH	DIGIKEY	732-2670-ND
2	1	C1	0.022uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
3	2	C2,C8	1KPF/50V SIZE 0805	MURATA/YAGEO	DIGIKEY	
4	1	C3	1uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
5	1	C4	56PF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
6	1	C5	10uF/25V SMD SIZE 1206	MURATA/YAGEO	DIGIKEY	
7	1	C6	330PF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
8	1	C7	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
9	1	D1	1N4148	MICROCHIP TECH	MOUSER	494-1N4148UR-1
10	1	PR1	50K TRIMMER POT	BOURNS	MOUSER	3362H-503LF-ND
11	1	Q1	BC847AL	NEXPERIA	DIGIKEY	BC847B-TPCT-ND
12	1	R1	8.8K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
13	1	R2	510E 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
14	1	R3	10K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
15	1	R4	21K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
16	1	R5	2K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
17	1	R6	68K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
18	1	R7	560E 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
19	1	R8	2.4K 1% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
20	2	R9,R10	10E 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
21	1	R11	DNP			
22	1	U1	UCC3895	TI	DIGIKEY	296-2552-5-ND

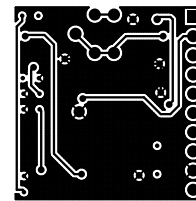


Connector CN1 Pin

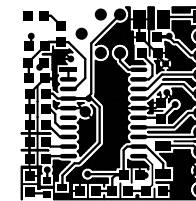
- Pin 1 VDD 10V to 16.5V DC
- Pin 2 VREF Output 5V DC
- Pin 3 Error Amplifier (EA)
- Pin 4 Output A
- Pin 5 Output B
- Pin 6 Output C
- Pin 7 Output D
- Pin 8 Current Sense In
- Pin 9 GND
- Pin 10 Not Connected (NC)



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 25.40MM 26.04MM