SEMICONDUCTOR CIRCUITS
High Efficiency, Ripple Regulator, Single Output DC/DC Converters

SW,CW

- OUTPUT POWER TO 42 WATTS
- IDEAL FOR BATTERY APPLICATIONS
- WIDE INPUT RANGE — TO 200%

The SW, CW Series are highly efficient, single output DC/DC converters. Proportional energy transfer techniques enable these encapsulated modular converters to maintain well regulated outputs despite large variations of input voltage. The 2:1 input range makes the SW and CW Series ideal for applications where the input dc power is derived from a battery, a motor generator or other types of poorly regulated power sources.

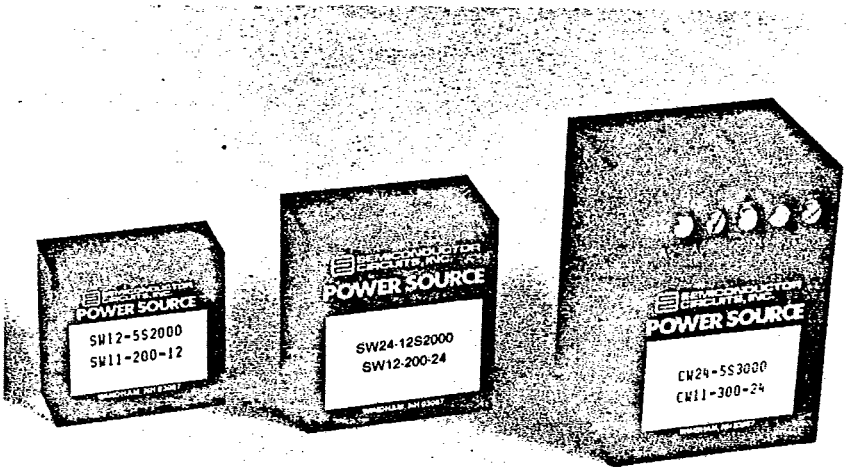
Due to a high efficiency ripple regulator design these units are available with unusually high output power (to 42 W) for their size yet most operate with no derating over the entire operating range to +71°C. This high output range makes the SW, CW Series ideal for powering multiple memory boards.

The output of the SW, CW Series can be trim adjusted by user added circuitry (see notes) to fine tune for optimum supply voltage.

Crowbar type over voltage protection is available as an option.
Option "C" is set at 6.2±5% Vdc for 5 Vout 3Adc (and greater) models.
Add suffix "C".

Applications

Portable battery driven systems demand the light weight, small size and broad input range of the SW, CW Series. The 2:1 input range makes these modules ideal for systems where they are utilized as the regulator stage for an internal power supply for laboratory use, but may also be powered by an external battery for field use. Such applications are automotive test equipment and well logging systems.



Process Control systems are usually subjected to hostile noise and temperature environments. The high efficiency and compact size of the SW, CW make the series ideal for rugged environments with high power densities. The large output LC filter offers up to 60 db in-line noise attenuation and the 2:1 input range allows great flexibility in the application of external transient suppression techniques.

General Specifications

Output Voltage Tolerance
±2% (Trim Adjustable)

Regulation (Line/Load)
0.3/0.3% — Rated Output to 3 Amps
0.5/0.5% — Rated Output above 3 Amps

Ripple and Noise
7 mV RMS — Rated Output to 3 Amps
13 mV RMS — Rated Output above 3 Amps

Operating Temperature Range
−25°C to +71°C — Rated Output to 3 Amps
−25°C to +60°C — Rated Output above 3 Amps

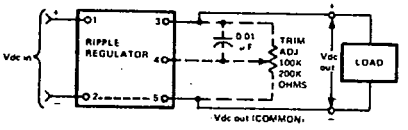
Storage Temperature Range
−25°C to +85°C

Efficiency
60-70% — Rated Output to 12V
60-80% — Rated Output above 12V

I/O Isolation
Not Galvanically Isolated

Overcurrent Protection
Power Foldback

Trim Adjust Circuit



See notes 4, 5 and 6 on facing page.

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Ordering Information

Input Voltage Range (Vdc)	* Output Voltage (Vdc)	* Output Current (mA)	Pkg. (Fig.)	New Model Number	Old Model Number
+(9.5-18)	+5V	2000	1 4-B	**SW11-200-12** **CW11-200-12**	SW12-5S2000 CW12-5S2000
+(18-32)			2 4-B	**SW11-200-24** **CW11-200-24**	SW24-5S2000 CW24-5S2000
+(9.5-18)		3000	3-B 4-C	**SW11-300-12** **CW11-300-12**	SW12-5S3000 CW12-5S3000
+(18-32)			3-B 4-C	**SW11-300-24** **CW11-300-24**	SW24-5S3000 CW24-5S3000
+(9.5-18)		4000	3-B 4-C	**SW11-400-12** **CW11-400-12**	SW12-5S4000 CW12-5S4000
+(18-32)			3-B 4-C	**SW11-400-24** **CW11-400-24**	SW24-5S4000 CW24-5S4000
+(9.5-18) +(18-32)		6500	4-D 4-D	**CW11-650-12** **CW11-650-24**	CW12-5S6500 CW24-5S6500
+(9.5-18) +(18-32)		8000	4-D 4-D	**CW11-800-12** **CW11-800-24**	CW12-5S8000 CW24-5S8000
+(18-32)	+12V	2000	2 4-C	**SW12-200-24** **CW12-200-24**	SW24-12S2000 CW24-12S2000
		3500	3-D 4-D	**SW12-350-24** **CW12-350-24**	SW24-12S3500 CW24-12S3500
+(18-32)	+15V	2000	2 4-C	**SW13-200-24** **CW13-200-24**	SW24-15S2000 CW24-15S2000

*Other versions available, please consult factory.

Socket Information: Fig. 1 SW, use socket P/N #100038
Fig. 2 SW, use socket P/N #100042
Fig. 3 SW, use socket P/N #100013

For socket dimensional information refer to page 23

Dimensions and Connections

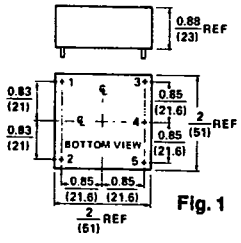

Fig. 1

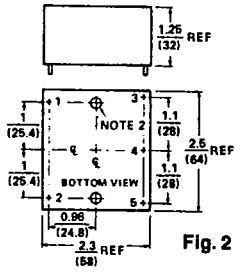

Fig. 2

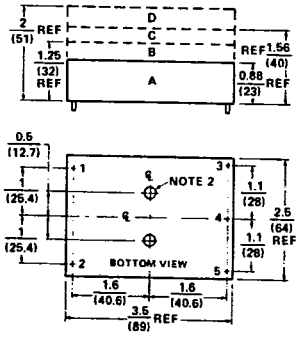

Fig. 3

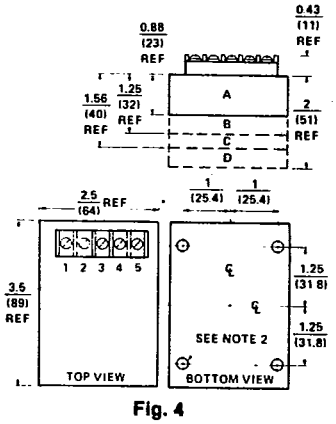

Fig. 4

Connections
PIN/TERMINAL
1 +Vdc in
2 −Vdc in (com)
3 +Vdc out
4 Trim Adjust
5 −Vdc out (com)

Notes:
1. Five Pins, 0.040 (1) Dia × 0.20 (5.1) Lg Min
2. Mounting Inserts 4-40 × 0.1 (2.5) Dp Min
3. Dimensions are given in both Inches and (mm)
4. For ±5% Output Trim. Connect a 100 K-200 K Ohm Potentiometer as shown on page 42. This adjustment is non-linear after a ±5% change.
5. If Lengths of the Trim Potentiometers Leads exceed 4", connect a 0.01 μF Capacitor in close Proximity to Pins/Terminals 3 and 4.
6. An internal connection exists between Pins 2 and 5 for currents up to twice the rated output. For protection against externally generated fault currents greater than twice the rated output use an external strap between Pins 2 and 5. For minimum noise use no strap between Pins 2 and 5.