

# SEWS SERIES

20W WIDE INPUT RANGE

# SCHMID-M



## FEATURES

- 20W DIL PACKAGE
- INDUSTRY STANDARD PACKAGE
- 9-18V,18-36V,36-75V WIDE INPUT RANGE
- REGULATED OUTPUT
- INPUT UVLO & OVLO
- HIGH EFFICIENCY
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- 3 YEARS WARRANTY



## OUTPUT SPECIFICATIONS

Voltage Set-point Accuracy	+/-2% max
Temperature Coefficient	+/-0.05%/°C
Ripple & Noise(20MHz BW) <sup>1</sup>	150mVp-p max
Line Regulation <sup>2</sup>	+/-0.3% max
Load Regulation <sup>3</sup>	+/-0.5% max
Minimum Load	10% of Full Load
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
Over Load Protection	130%~180%
Transient Response <sup>5</sup>	500uS max
External Trim Adj. Range	+10% ~ -20%

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C to +75°C
Case Temperature	+100°C max
Storage Temperature	-55°C to +125°C
Humidity	95% max
Cooling	Free-Air Convection

## INPUT SPECIFICATIONS

Input Voltage Range	2:1 Input Range
Input Filter	Pi Network
Protection	Fuse Recommended
OVLO(Over Voltage Lockout)	See Page 4
UVLO(Under Voltage Lockout)	See Page 4

## GENERAL SPECIFICATIONS

Efficiency	88% typ.
Isolation Voltage <sup>4</sup>	1500VDC min
Isolation Resistance	10 <sup>9</sup> ohms min
Isolation Capacitance	3000pF max
Switching Frequency	300 KHz typ.
MTBF <sup>6</sup>	>700,000 Hours
Weight	31.2g typ.
Case Material	Six-Side Shielded Case
Case Size	50.8mm*25.4mm*11.2mm
Conducted Emissions	EN55022 Class A
Radiated Emissions	EN55022 Class A

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD, AND 25°C UNLESS OTHERWISE NOTED.

<sup>1</sup> Measured with 1uF ceramic capacitor connect to the output pins.

<sup>2</sup> High Line to Low Line.

<sup>3</sup> Load Regulation is for output load current change from 10% to 100%.

<sup>4</sup> For 10 seconds.

<sup>5</sup> 25% Step Load Change.

<sup>6</sup> MIL-HDBK-217F @25°C, Ground Benign.

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● **SELECTION GUIDE**  
**2:1 20W OUTPUT**

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT <sup>7</sup>		EFF (%) <sup>8</sup>	ISOLATION (VDC)	CAPACITOR LOAD (Max)
				CURRENT(mA)				
				FULL LOAD	NO LOAD			
SEWS-1203.3	9-18	3.3	5000	1617	65	85	1500	1000uF
SEWS-1205	9-18	5	4000	1893	65	88	1500	1000uF
SEWS-1212	9-18	12	1666	1893	20	88	1500	220uF
SEWS-1215	9-18	15	1333	1872	20	89	1500	150uF
SEWS-2403.3	18-36	3.3	5000	809	45	85	1500	1000uF
SEWS-2405	18-36	5	4000	947	45	88	1500	1000uF
SEWS-2412	18-36	12	1666	936	20	89	1500	220uF
SEWS-2415	18-36	15	1333	926	20	90	1500	150uF
SEWS-4803.3	36-75	3.3	5000	404	40	85	1500	1000uF
SEWS-4805	36-75	5	4000	473	40	88	1500	1000uF
SEWS-4812	36-75	12	1666	473	10	88	1500	220uF
SEWS-4815	36-75	15	1333	468	10	89	1500	150uF

*Note: Other input to output voltages may be available. Please contact factory.*

● **PART NUMBERS STRUCTURE**

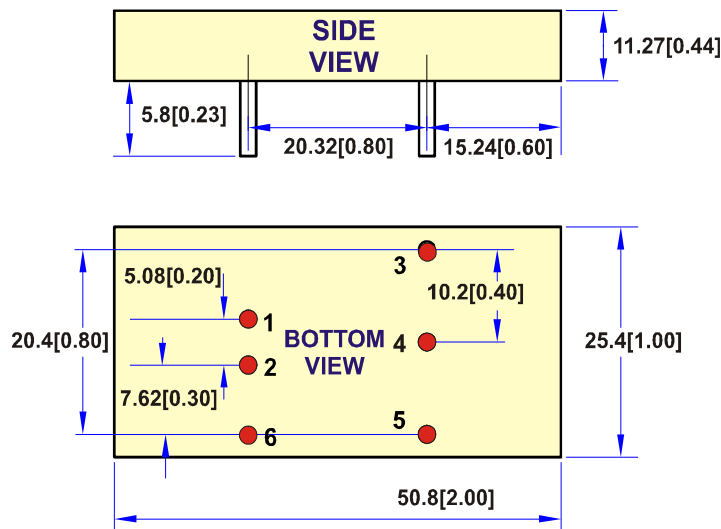
Model Name	Difference
SEWv-x1x2 SEWv-x1x2T-zzz	<p>SE=Series Name</p> <p>W=Wide Input Range</p> <p>v=Type of output voltage (S=single output)</p> <p>x1=Input voltage(9~18V ; 18~36V ; 36~75V)</p> <p>x2=Output voltage(03.3 ; 05 ; 12 ; 15)</p> <p>T= Input Range (9~36V ; 18~75V)</p> <p>zzz= 0~9 , A~Z or blank for market purpose.</p>

<sup>7</sup> NOMINAL INPUT VOLTAGE.

<sup>8</sup> NOMINAL INPUT VOLTAGE, FULL LOAD.

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- MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS**

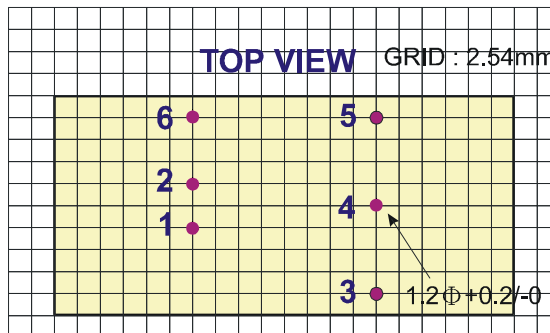


PIN	SINGLE
1	+Vin
2	-Vin
3	+Vout
4	TRIM
5	-Vout
6	Remote On/Off

NOTE: Pin Size is Tolerance 1.0Φ ±0.10mm  
 All Dimensions In mm(Inches)  
 Tolerance .X or .XX= ±0.80mm

All dimensions are in millimeters[inches]

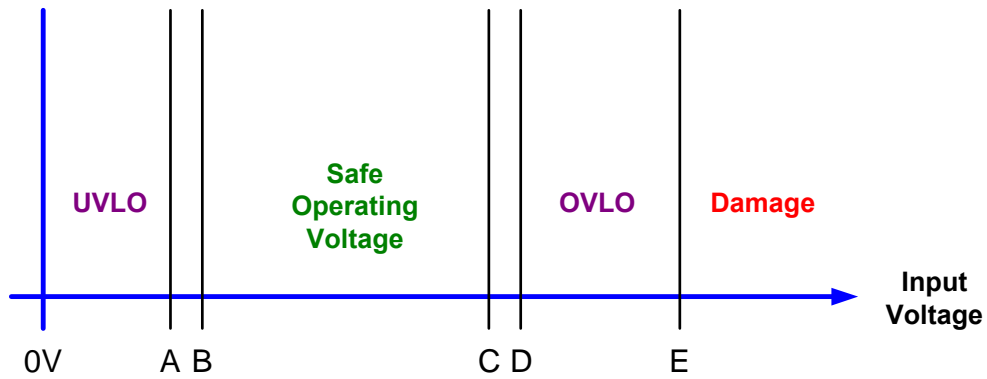
- RECOMMENDED FOOTPRINT DETAILS**



Remote On/Off Control			
Control Input	PIN6	Control Common	PIN2
Control Voltage		Converter Shutdown Idle Current	10mA
ON	>+2.5VDC or Open Circuit	Logic Compatibility	CMOS or Open
OFF	<+0.8VDC or Jumper to PIN2		Collector TTL

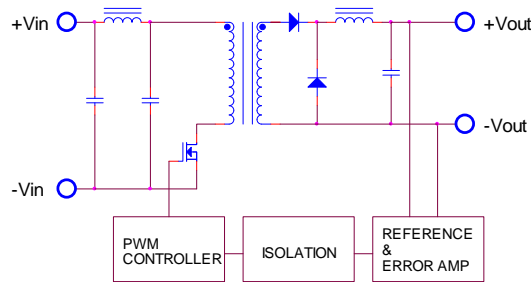
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## ● INPUT OPERATING VOLTAGE



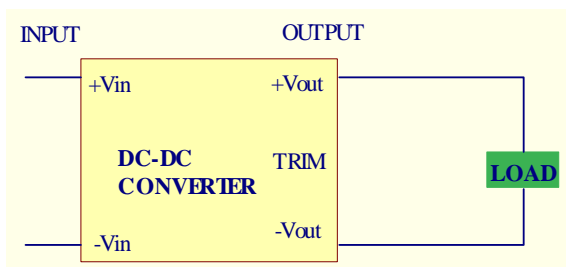
	A	B	C	D	E
<b>SEWS-12**</b>	8V typ.	9V	18V	20V typ.	25V
<b>SEWS-24**</b>	16V typ.	18V	36V	40V typ.	50V
<b>SEWS-48**</b>	32V typ.	36V	75V	80V typ.	100V

## ● SIMPLIFIED SCHEMATIC

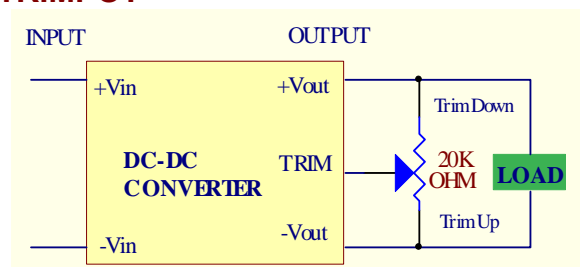


## ● TYPICAL APPLICATIONS

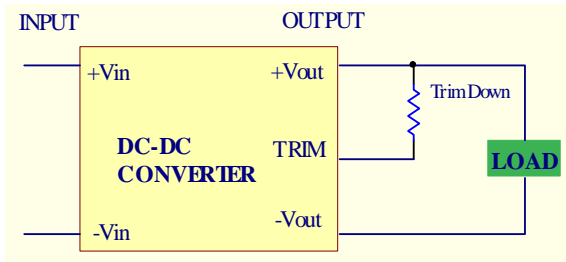
### FIXED VOLTAGE OUTPUT



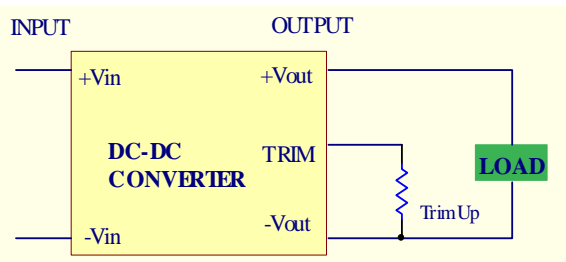
### TRIM CONNECTIONS USING A TRIMPOT



### FIXED-VALUE TRIM DOWN RESISTOR



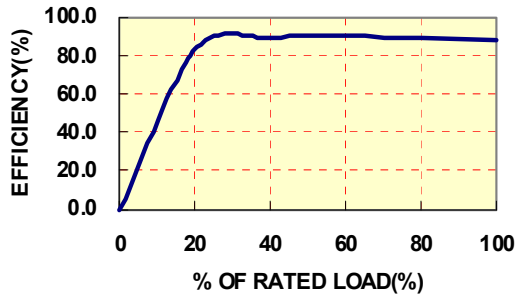
### FIXED-VALUE TRIM UP RESISTOR



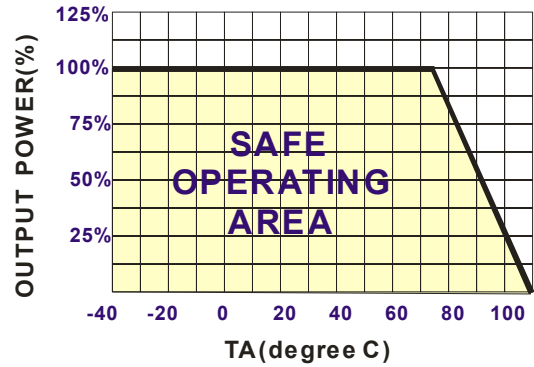
## ● TYPICAL PERFORMANCE CURVES

Specifications typical at  $T_a=25^\circ\text{C}$ , nominal input voltage, rated output current unless otherwise specified.

### OUTPUT LOAD VS EFFICIENCY



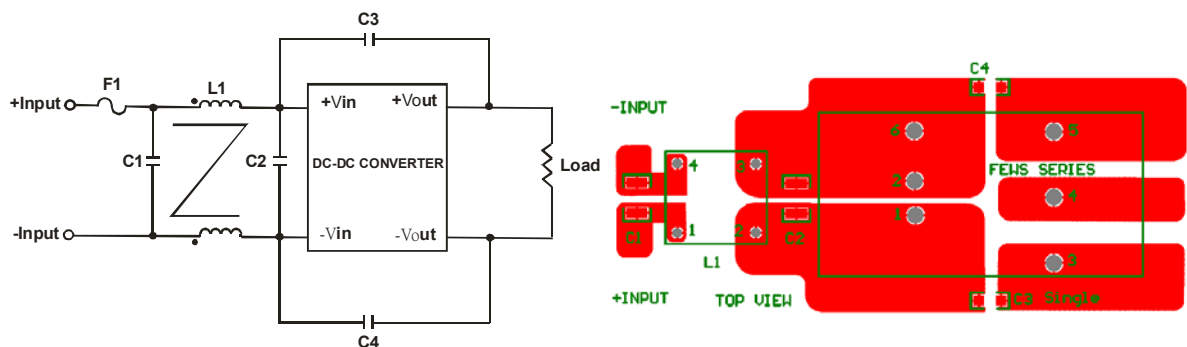
### TEMPERATURE DERATING



## ● RECOMMENDED FILTER FOR EN55022 CLASS B

The components used in the above figure, together with the manufacturer's part numbers for these components, are as follows:

	C1	C2	C3	C4	L1
<b>SEWS-12**</b>	3.3uF/50V 1812 MLCC	3.3uF/50V 1812 MLCC	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
<b>SEWS-24**</b>	3.3uF/50V 1812 MLCC	N/A	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke
<b>SEWS-48**</b>	1.5uF/100V 1812 MLCC	1.5uF/100V 1812 MLCC	1000pF/2KV MLCC	1000pF/2KV MLCC	325uH Common Choke



RECOMMENDED EN55022 CLASS B FILTER CIRCUIT LAYOUT

## ● INPUT FUSE SELECTION GUIDE

9-18V INPUT VOLTAGE(VDC)	18-36V INPUT VOLTAGE(VDC)	36-75V INPUT VOLTAGE(VDC)
5000mA Slow-Blow Type	3000mA Slow-Blow Type	1500mA Slow-Blow Type

**Note:** Certain applications may require the installation of external fuse in front of the input.

### SEWS SERIES APPLICATION NOTES:

#### EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the SEWS series.

External output capacitance is not required for operation; however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

We Can Offer EMC-Filter According To EN55011/22 Class B.

#### Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.

#### Remote ON/OFF:

The remote ON/OFF pin may be left floating if this function is not use. It is recommended to drive this pin with an open collector arrangement or a relay contact. When the ON/OFF pin is pulled low with respect to the -VIN, the converter is placed in a low power drain state.

#### Output TRIM:

The TRIM pin may be used to adjust the output +10% ~ -20% from the nominal setting .this function allows adjustment for voltage drops in the system wiring. If the TRIM function is not required the pin may be left floating.

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