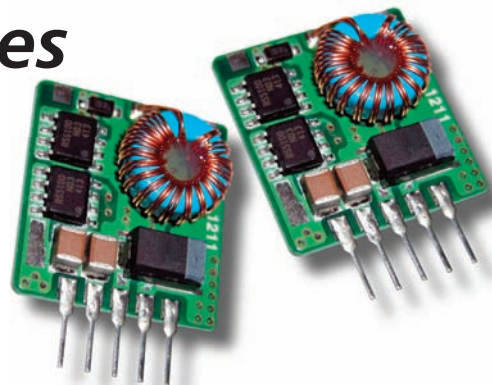


# SR1000W Series

## Compact, High Efficiency 10W, Wide Input Range Switching Regulator



### Key Features:

- 10W Output Power
- Efficiency to 93%
- Miniature SIP Construction
- Wide Input Range
- Remote On/Off
- Short Circuit Protection
- Low Cost



**RoHS Compliant**

### Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

#### Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Start Range	5 VDC Input	3.5		3.90	VDC
	12 VDC Input	5.5		6.0	
	24 VDC Input	12.0		15.0	

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±2.0	%
Output Voltage Trim Range	SR1001W, SR1021W	1.8		3.3	VDC
	SR1011W, SR1022W	3.0		5.0	
Line Regulation	Vin = Min to Max		±0.2	±0.5	%
Load Regulation	Iout = 10% to 100%		±0.5	±1.5	%
Ripple & Noise (20 MHz) (Note 1)			30	50	mV P - P
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			120	mV P - P
Ripple & Noise (20 MHz)				15	mV rms
Output Power Protection		120			%
Transient Recovery Time (Note 2)	25% Load Step Change		100	150	µSec
Transient Response Deviation			±2.0	±4.0	%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit	Continuous (Autorecovery)				

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Not Isolated				
Switching Frequency			300		kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
Storage Temperature Range		-25		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

#### Physical

Size	0.8 x 0.327 x 0.95 Inches (20.2 x 8.3 x 24.0 mm)				
Weight	0.30 Oz (8.6g)				
Vibration	5 to 10 Hz Amplitude, 10 mm Pk-Pk 10 to 55 Hz Acceleration 2G				
Shock	Acceleration 20G Max., Time 11 ms				

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	1.5			MHours

#### Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		16.0	VDC
	12 VDC Input	-0.7		25.0	
	24 VDC Input	-0.7		30.0	
Lead Temperature	1.5 mm From Case For 10 Sec			235.0	°C
Internal Power Dissipation	All Models			1,500	mW

Caution: Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

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## Model Selection Guide

Model Number	Input				Output			Efficiency (% , Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
SR1001W	5	4.75 - 13.6	1,434	21	3.3	2,000	200	92	4,000
SR1011W	12	6.00 - 16.5	896	27	5.0	2,000	200	93	3,000
SR1021W	24	16.0 - 28.0	331	45	3.3	2,000	200	83	1,000
SR1022W	24	16.0 - 28.0	490	45	5.0	2,000	200	85	1,000

### Notes:

- When measuring output ripple, it is recommended that an external 22  $\mu\text{F}$  ceramic capacitor be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units.
- Transient recovery is measured to within a 1% error band for a load step change of 75% to 100%.
- Operation at no-load will not damage these units. However, they may not meet all specifications.
- It is recommended that a fuse be used on the input of a power supply for protection. See the table above for the correct rating.

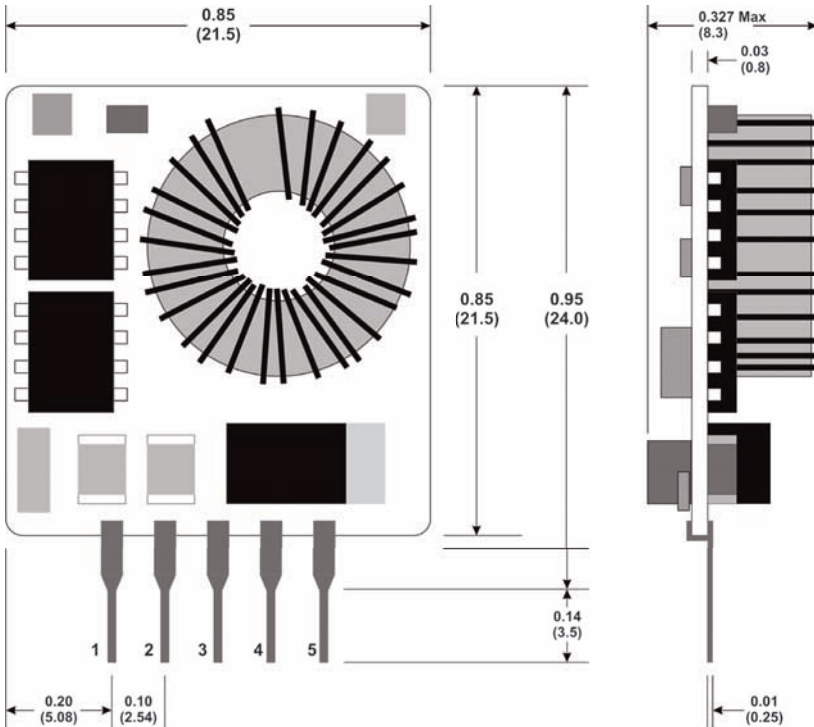
### Remote ON/OFF (Optional, see below)

Parameter	Min	Max	Units
Supply On	3.0	5.0 or Open	VDC
Supply Off	-0.3	1.2	VDC
Standby Input Current		300	$\mu\text{A}$
Control Input Current (On)		50	$\mu\text{A}$
Control Input Current (Off)		-100	$\mu\text{A}$
Control Common	Referenced to Neg. Input		

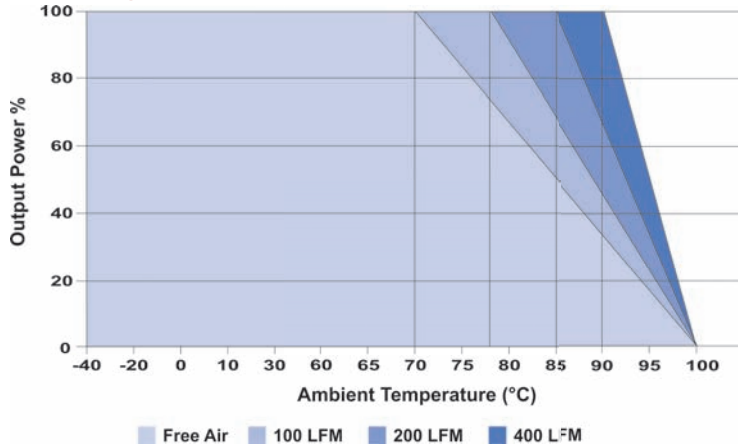
### Remote ON/OFF Notes:

- Maximum sink current at the on/off terminal (Pin 1) during a logic low is 100  $\mu\text{A}$ .
- Maximum allowable leakage current of a switch connected to the on/off terminal (Pin 1) at logic high (3.0V to 5.0V) is 50  $\mu\text{A}$ .

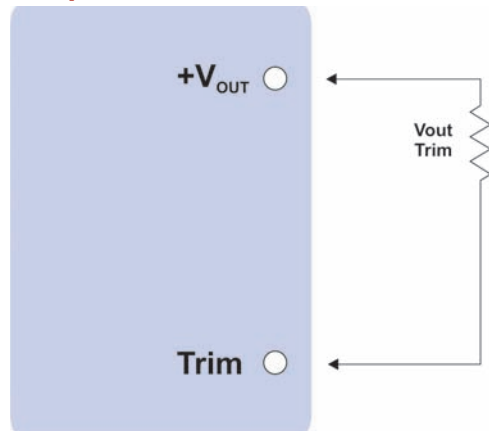
### Mechanical Dimensions



### Derating Curve



### Output Trim Connection



The output voltage of the SR1000W may be trimmed down by connecting an external resistor between the +Vout (pin 4) and Output Trim (pin 5). This resistor value (in  $\Omega$ ) is given by:

$$V_{out\ Trim} = \frac{(R_x \cdot 1200) \cdot (V_{out} - 1.195)}{(R_x \cdot 1.195) - (1200 \cdot (V_{out} - 1.195))}$$

For the SR1001W & SR1021W;  $R_x = 2,130\Omega$  ( $V_{out} = 1.8$  to 3.3VDC)  
For the SR1011W & SR1022W;  $R_x = 3,840\Omega$  ( $V_{out} = 3.0$  to 5.0VDC)

### Pin Connections

Pin	Description
1	Remote On/Off
2	+Vin
3	-Vin (Gnd)
4	+Vout
5	Output Trim

### Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx =  $\pm 0.01$  ( $\pm 0.25$ )



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