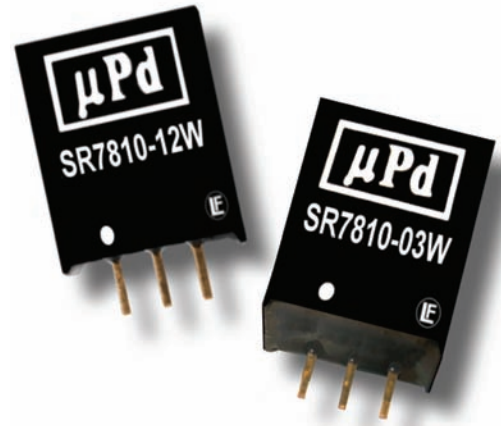


# SR7810 Series

## Low Cost, 1A Output Non-isolated POL Switching Regulators



### Key Features:

- Efficiency to 96%
- 1A Output Current
- Compact SIP Case
- LM78xx Replacement
- Wide Input Range
- Short Circuit Protected
- Thermal Shutdown
- Low Noise

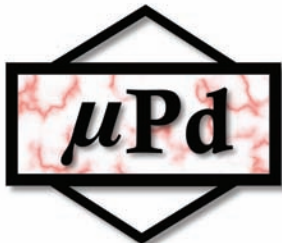


**RoHS Compliant**

### MicroPower Direct

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### Electrical Specifications

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

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±2.0	±3.0	%
Line Regulation	Vin = Min to Max		±0.2	±0.4	%
Load Regulation	Iout = 10% to 100%		±0.4	±0.6	%
Ripple & Noise (20 MHz)			20	35	mV P - P
Dynamic Load Stability	See Note 1			±100	mV
Output Power Protection		120			%
Thermal Shutdown	See Note 2		150		°C
Quiescent Current	See Note 3		5	7	mA
Output Current Limit				2,000	mA
Output Short Circuit	Continuous (Autorecovery)				

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Not Isolated				
Switching Frequency		280	330	450	kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Operating Temperature Range	Case			+100	°C
Storage Temperature Range		-55		+125	°C
Lead Temperature	1.5 mm From Case For 10 Sec			300	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

#### Physical

Case Size	0.45 x 0.35 x 0.69 Inches (11.5 x 8.90 x 17.50 mm)
Case Material	Non-Conductive Black Plastic (UL-94V0)
Weight	0.13 Oz (3.7g)

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	2.0			MHours

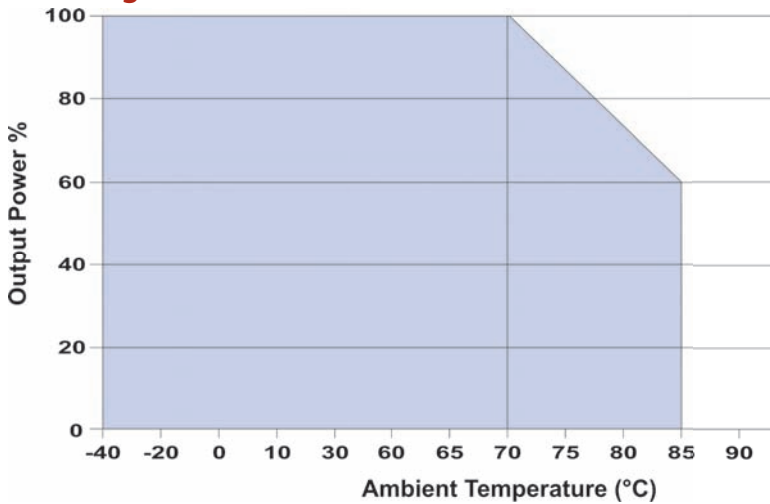
## Model Selection Guide

Model Number	Input Voltage Range (VDC)	Output		Efficiency (% Typ)	
		Voltage (VDC)	Current (mA, Max)	Min Vin	Max Vin
SR7810-03W	4.75 - 28.0	3.3	1,000.0	90	83
SR7810-05W	6.5 - 32.0	5.0	1,000.0	93	88
SR7810-06W	9.0 - 32.0	6.5	1,000.0	94	90
SR7810-09W	12.0 - 32.0	9.0	1,000.0	95	92
SR7810-12W	16.0 - 32.0	12.0	1,000.0	96	94

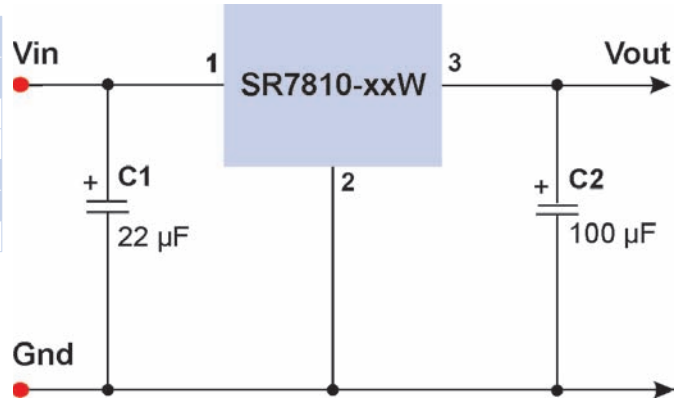
### Notes:

- Dynamic load stability is specified for output loads from 10% to 100%.
- Measured at an internal IC junction.
- Quiescent current is specified at 0% load for  $V_{in}$  = min to max.
- This regulator is not designed to be used in parallel with another unit to increase output power.
- The input should not exceed the range given in the model selection chart above. Exceeding this limit could damage the unit.

## Derating Curve



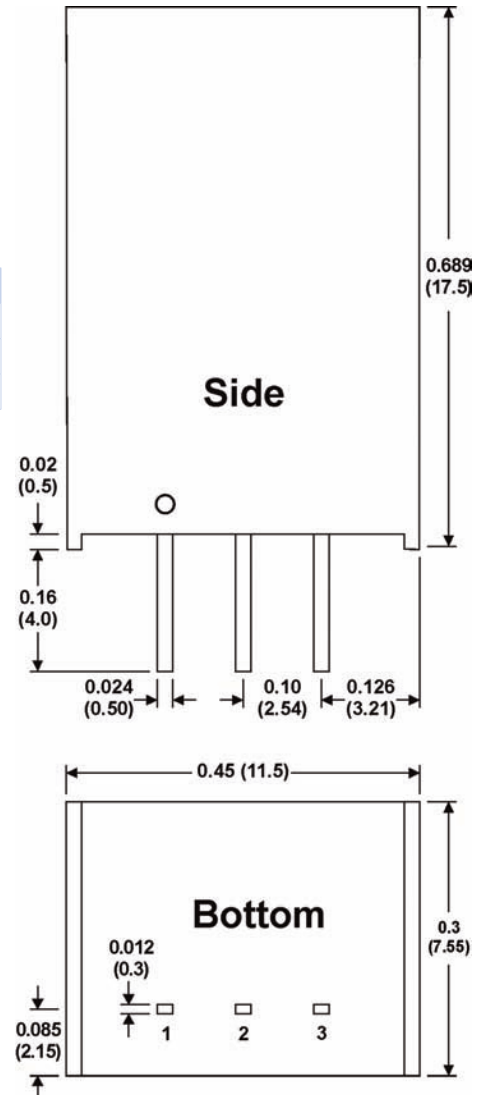
## Typical Application Circuit



### Notes:

- C1 is a low ESR ceramic capacitor used to minimize noise at the regulator. A tantalum or low ESR electrolytic capacitor may also be used. A typical value is 22 µF/50V. C1 should be placed as close to pins 1 and 2 as possible.
- C2 is optional. A typical value is a 100 µF/25V electrolytic capacitor.

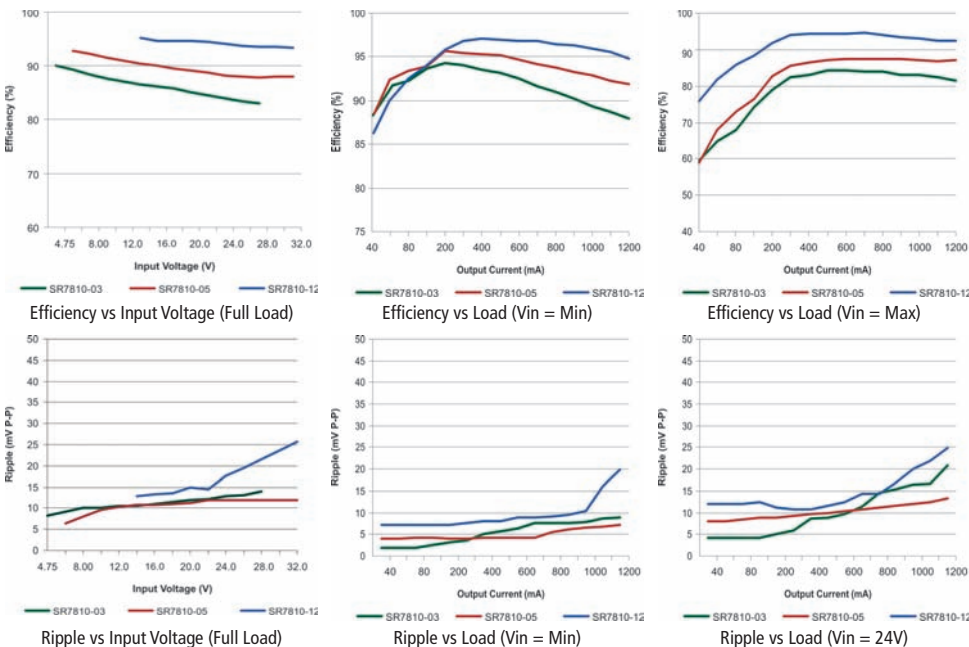
## Mechanical Dimensions



### Pin Connect.

Pin	Description
1	+Vin
2	Gnd
3	+Vout

## Characteristic Curves (Efficiency & Ripple)



### Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)
- Pin 1 is marked by a "dot" or indentation on the side of the unit



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