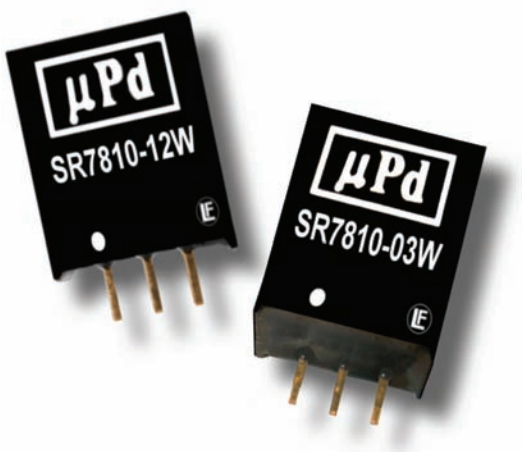
SR7810 Series

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

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

MicroPower Direct
292 Page Street
Suite D
Stoughton, MA 02072
USA

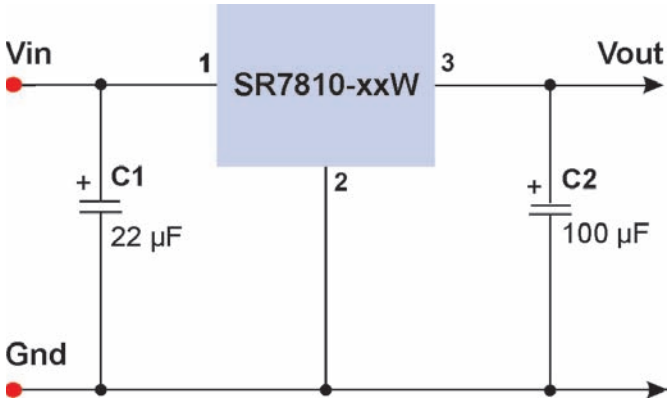
T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

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

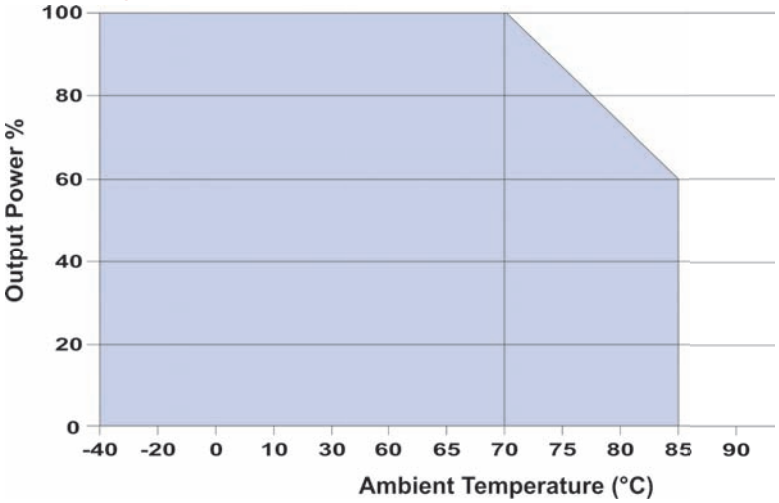
Notes:
1. Dynamic load stability is specified for output loads from 10% to 100%.
2. Measured at an internal IC junction.
3. Quiescent current is specified at 0% load for Vin = min to max.
4. This regulator is not designed to be used in parallel with another unit to increase output power.
5. The input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

Typical Application Circuit



Notes:
1. 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.
2. C2 is optional. A typical value is a 100 µF/25V electrolytic capacitor.

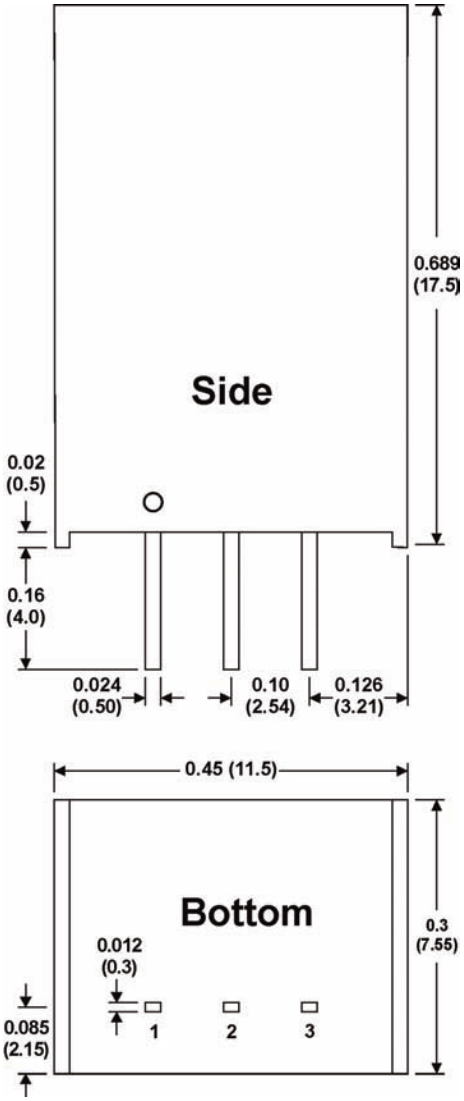
Derating Curve



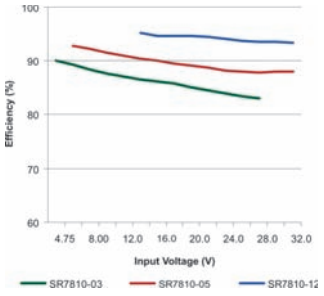
Pin Connect.

Pin	Description
1	+Vin
2	Gnd
3	+Vout

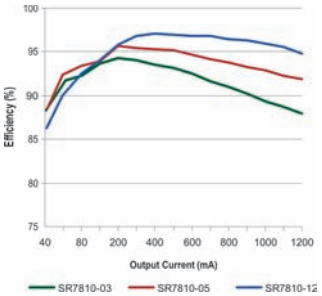
Mechanical Dimensions



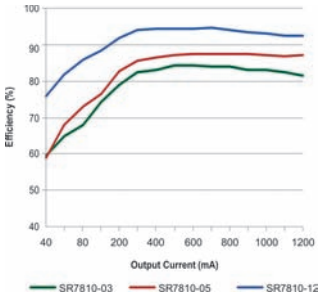
Characteristic Curves (Efficiency & Ripple)



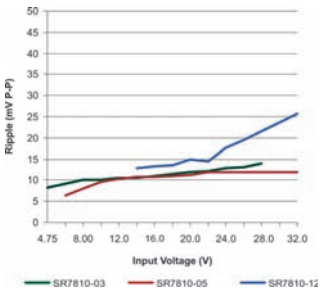
Efficiency vs Input Voltage (Full Load)



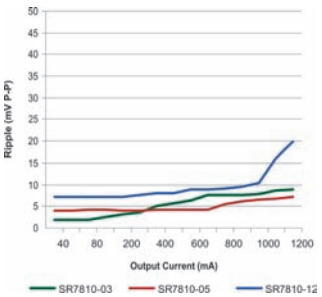
Efficiency vs Load (Vin = Min)



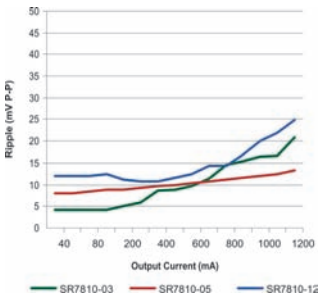
Efficiency vs Load (Vin = Max)



Ripple vs Input Voltage (Full Load)



Ripple vs Load (Vin = Min)



Ripple vs Load (Vin = 24V)

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

MicroPower Direct
www.micropowerdirect.com
292 Page Street Ste D Stoughton, MA 02072 • TEL: (781) 344-8226 • FAX: (781) 344-8481 • E-Mail: sales@micropowerdirect.com