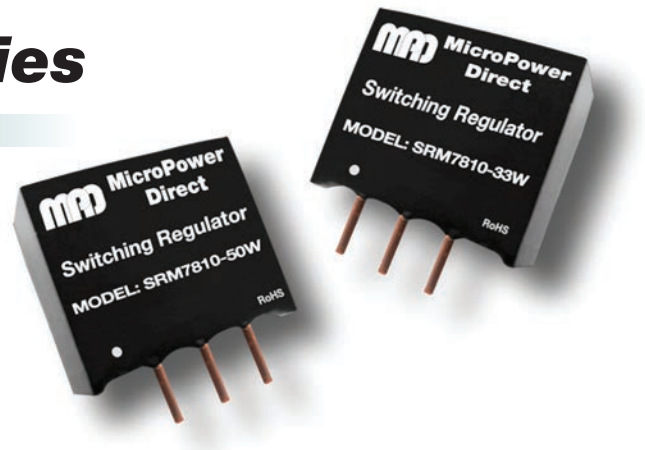
SRM7810 Series

Miniature, 1A Output Non-isolated POL Switching Regulators



Key Features:

- Miniature SIP Case
- 1.0A Output Current
- Efficiency to 93%
- LM78xx Replacement
- Wide Input Range
- Short Circuit Protected
- Thermal Shutdown
- Low Noise
- ***Low Cost***

RoHS

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	3.3V Output Model		±2.0	±3.5	%
	Other Models		±2.0	±3.0	
Line Regulation	Vin = Min to Max		±0.5	±0.75	%
Load Regulation	Iout = 10% to 100%		±0.5	±1.0	%
Ripple & Noise (20 MHz)			25	45	mV P - P
Thermal Shutdown	See Note 1		150		°C
Quiescent Current	See Note 2		7	10	mA
Temperature Coefficient				0.02	%/°C
Maximum Capacitive Load				1,000	µF
Output Current Limit			3,000		mA
Output Short Circuit	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Not Isolated				
Switching Frequency		335	385	435	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 0.30 x 0.40 Inches (11.5 x 7.55 x 10.2 mm)
Case Material	Non-Conductive Black Plastic (UL-94V0)
Weight	0.07 Oz (2.0g)

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

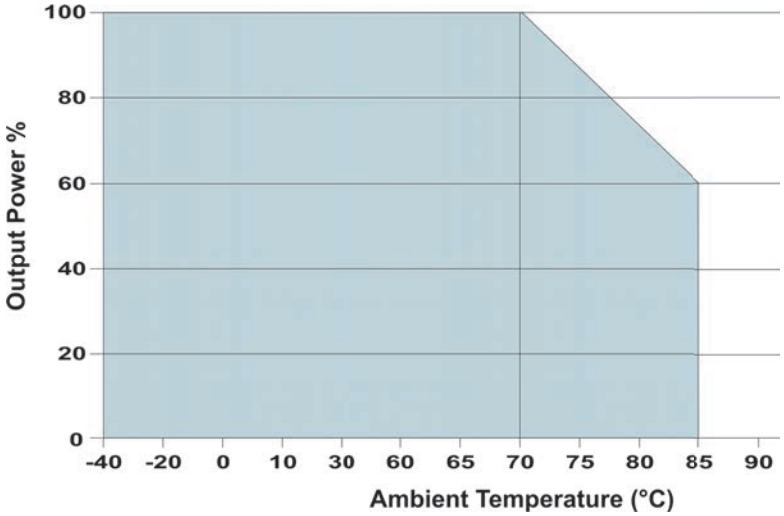
T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

Model Selection Guide

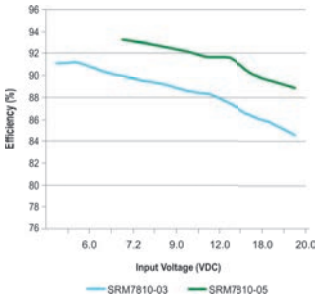
Model Number	Input Voltage (VDC)		Output		Efficiency (%, Typ)	
	Nom.	Range	Voltage (VDC)	Current (mA, Max)	Min Vin	Max Vin
SRM7810-015W	12	4.75 - 18.0	1.5	1,000.0	78	72
SRM7810-018W	12	4.75 - 18.0	1.8	1,000.0	82	76
SRM7810-02W	12	4.75 - 18.0	2.5	1,000.0	87	82
SRM7810-03W	12	4.75 - 20.0	3.3	1,000.0	90	83
SRM7810-05W	12	6.50 - 20.0	5.0	1,000.0	93	85

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

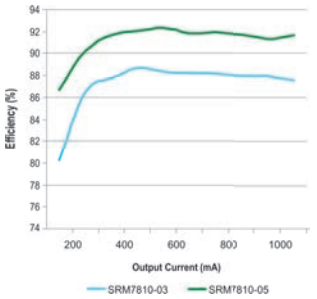
Derating Curve



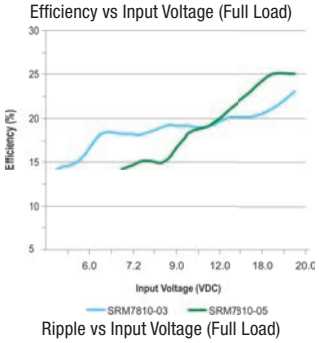
Characteristic Curves (Efficiency & Ripple)



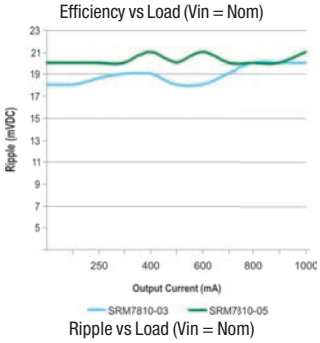
Efficiency vs Input Voltage (Full Load)



Efficiency vs Load (Vin = Nom)



Ripple vs Input Voltage (Full Load)

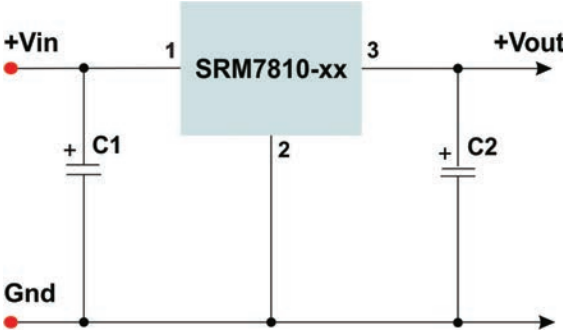


Ripple vs Load (Vin = Nom)

Pin Connection

Pin	1	2	3
Function	+Vin	Gnd	+Vout

Typical Application Circuit

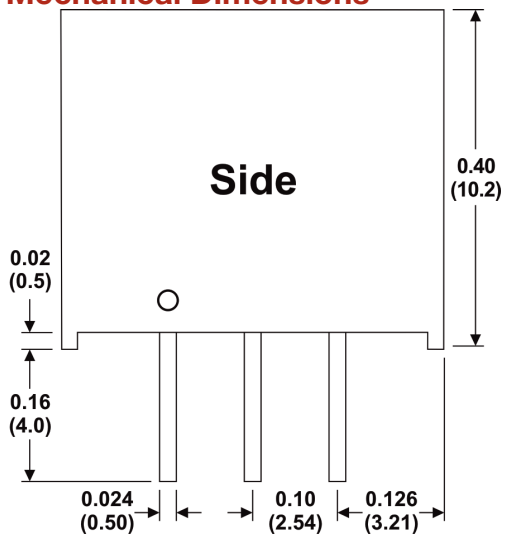


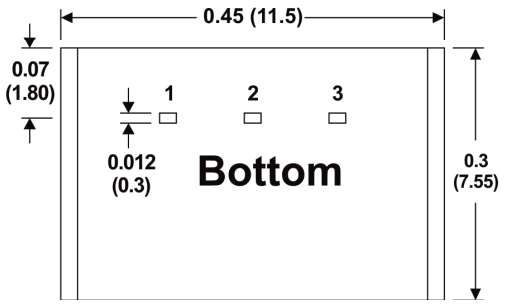
Notes:
1. C1 is a low ESR ceramic capacitor used to minimize noise at the regulator. A tantalum or low ESR electrolytic capacitor may also be used.
2. C1 & C2 are required and should be mounted as close to the regulator pins as possible.

Component Values

Model Number	Capacitors	
	C_1, C_3 (μF/V)	C_2, C_4 (μF/V)
SRM7810-015W	10 /25	22 / 6.3
SRM7810-018W	10 /25	22 / 6.3
SRM7810-02W	10 /25	22 / 10
SRM7810-03W	10 /25	22 / 16
SRM7810-05W	10 /25	22 / 16

Mechanical Dimensions





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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