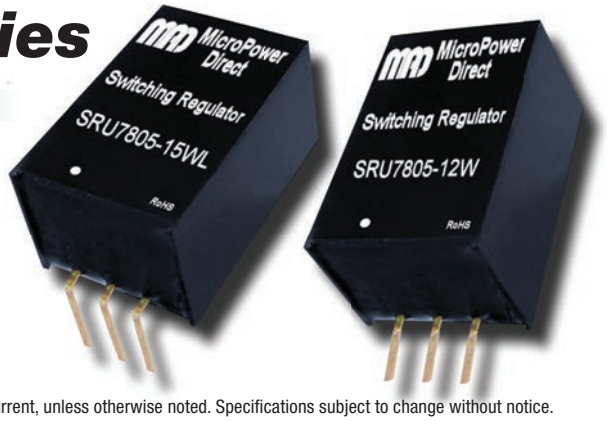
SRU7805W Series

Ultra-Wide Input, 0.5A Non-isolated POL Switching Regulators



Key Features:

- Efficiency to 95%
- Ultra-Wide Input Range
- 0.5A Output Current
- Compact SIP Case
- LM78xx Replacement
- Short Circuit Protected
- Thermal Shutdown
- Low Noise
- ***Low 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			±2.0	±3.0	%
Line Regulation	V_{IN} = Min to Max		±0.4	±1.0	%
Load Regulation	I_{OUT} = 10% to 100%		±0.3	±0.6	%
Ripple & Noise (20 MHz)			20	60	mV P - P
Thermal Shutdown	See Note 3		160		°C
Quiescent Current	See Note 4		1	5	mA
Temperature Coefficient				0.015	%/°C
Maximum Capacitive Load				100	µF
Output Current Limit	See Note 5		700	1,200	mA
Short Circuit Input Power			0.72	1.2	W
Output Short Circuit	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Not Isolated				
Switching Frequency		120		800	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	%

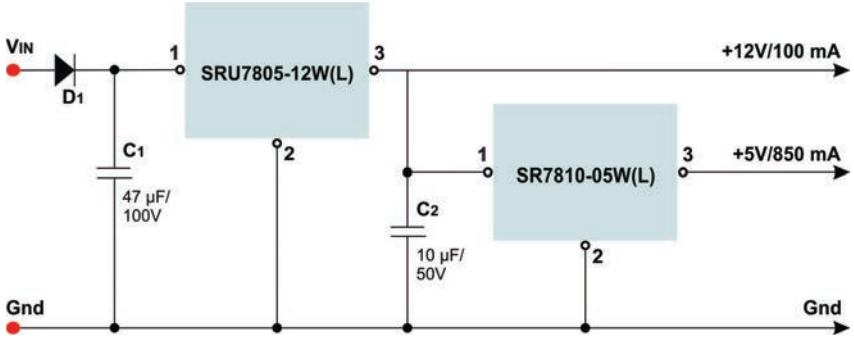
Physical

Case Size	0.45 x 0.35 x 0.69 Inches (11.5 x 9.0 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	3.5			MHours
	MIL HDBK 217F, 71°C, Gnd Benign	1.5			

Typical Application Circuit



Notes:

1. The diode D_1 is used to protect the module against a reverse connection.
2. C_1 is required if a high voltage input to the regulator is used. It will help prevent voltage spikes that could possibly damage the regulator. If used, the value should be 47 µF minimum
2. This circuit example shows a simple connection utilizing a second regulator to provide a second regulated output. For information on other circuits (filtering, protection, etc.) please contact the factory.

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Model Selection Guide

Model Number	Input Voltage Range (VDC)	Output		Efficiency (%, Typ)	
		Voltage (VDC)	Current (mA, Max)	Min Vin	Max Vin
SRU7805-03W(L)	9.00 - 72.0	3.3	500.0	82	75
SRU7805-05W(L)	9.00 - 72.0	5.0	500.0	87	81
SRU7805-06W(L)	9.00 - 72.0	6.5	500.0	91	84
SRU7805-09W(L)	14.0 - 72.0	9.0	500.0	92	86
SRU7805-12W(L)	17.0 - 72.0	12.0	500.0	93	89
SRU7805-15W(L)	20.0 - 72.0	15.0	500.0	94	90
SRU7805-24W(L)	36.0 - 72.0	24.0	500.0	95	91

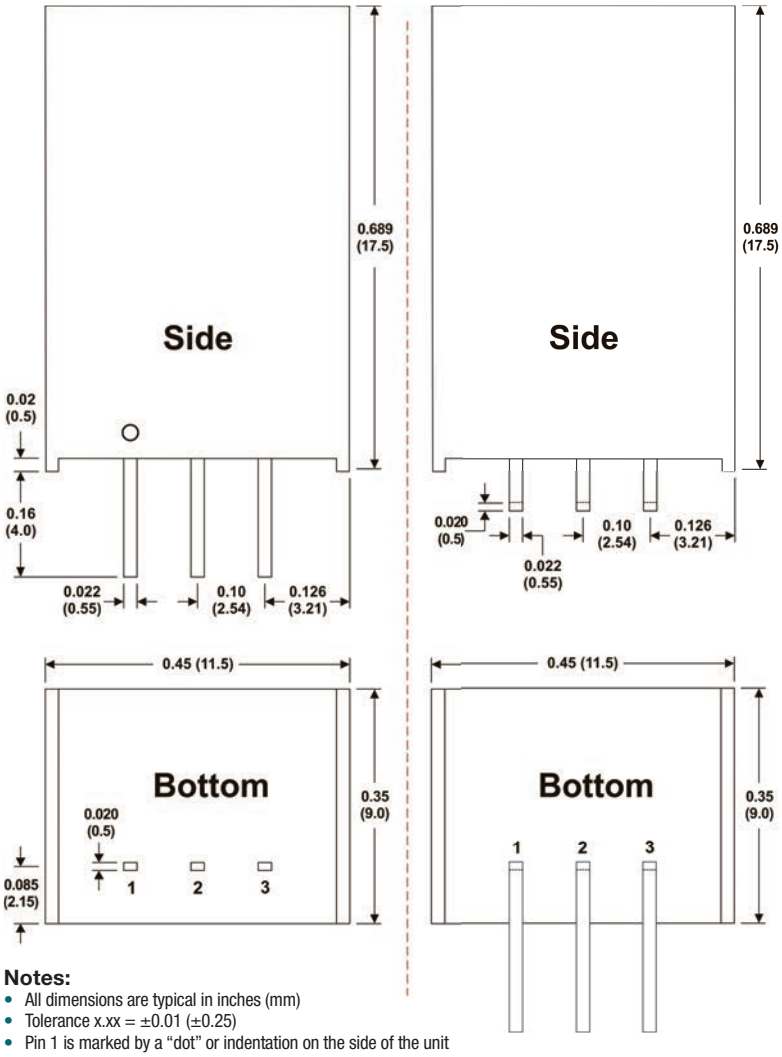
For right-angle pin option, add suffix "L" to model number (i.e. **SRU7805-15WL**)

Notes:
1. Load regulation is specified for an output load change of 10% to 100%.
2. Operation under 10% load will not damage the unit. However, it may not meet all specifications.
3. Measured at an internal IC junction.
4. Quiescent current is specified at 0% load for V_{IN} = nom.
5. This regulator is not designed to be used in parallel with another unit to increase output power.
6. The input should not exceed the range given in the model selection chart. Exceeding this limit could damage the unit.

Pin Connection

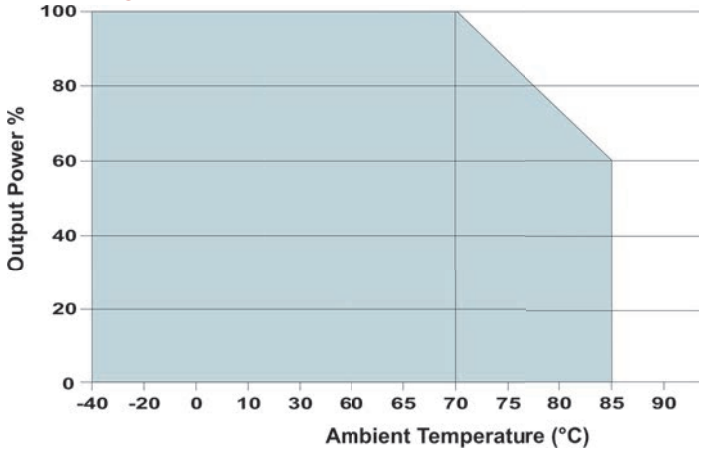
Pin	1	2	3
Function	+Vin	Gnd	+Vout

Mechanical Dimensions

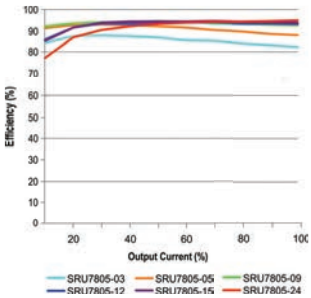


Notes:
- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)
- Pin 1 is marked by a "dot" or indentation on the side of the unit

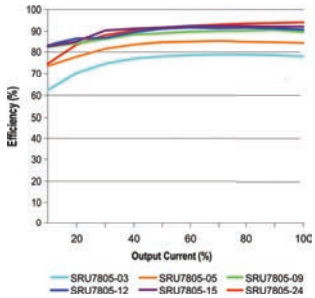
Derating Curve



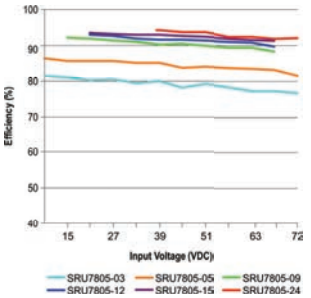
Characteristic Curves (Efficiency & Ripple)



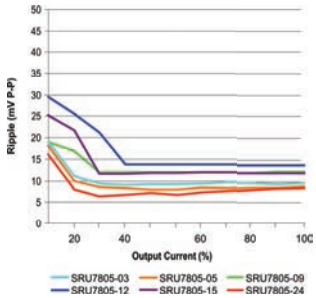
Efficiency vs Load (Vin = Min)



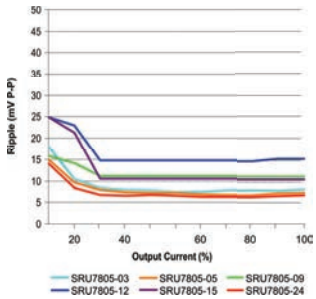
Efficiency vs Load (V_{IN} = Nom)



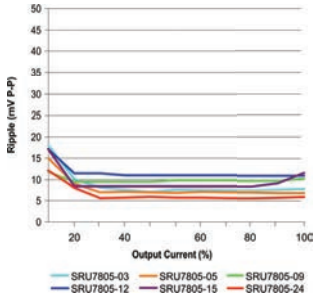
Efficiency vs Input Voltage (Full Load)



Ripple vs Load (V_{IN} = Max)



Ripple vs Load (V_{IN} = Nom)



Ripple vs Load (V_{IN} = Min)

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