ARCH ELECTRONICS CORP.

Encapsulated DC-DC Converter

SR78/ 1000 SERIES 1 A

KEY FEATURES

- SIP-Package Fits Existing TO-220 Footprint
- Pin Compatible with LMxx Linear Regulators
- Efficiency up to 96%,Non Isolated, No Need for Heatsinks
- Wide Input Operating (4.6V~36V)
- Non Standard Outputs Available as Specials Between 1.5V~15V
- Short Circuit Protection
- Over-Current Protection & Over-Temperature protection
- UL94V-0 Package Material
- Meet EN55022 Class A Conducted Emissions& Radiated Emissions(Note 3)
- Meet EN55022 Class BConducted Emissions& Radiated Emissions(Note 4)
- 3-Years Product Warranty

A Type

PIN material: Metal

(Nickel Plate Brass)

All specifications are typical at normal input voltage, full load and +25℃ otherwise noted。

ELECTRICAL SPECIFICATIONS

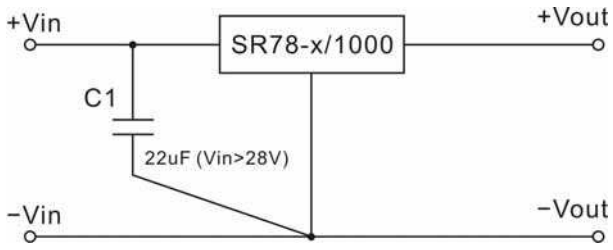
Model No. (Single Output)	SR78-1.5S/1000	SR78-1.8S/1000	SR78-2.5S/1000	SR78-3.3S/1000	SR78-5S/1000
Max Output Wattage (W)	1.5W	1.8W	2.5W	3.3W	5W
Input Voltage Range (V.DC.)	4.6-36V	4.6-36V	4.6-36V	4.75-36V	6.5-36V
Output Voltage (V.DC.)	1.5V / 1000mA	1.8V / 1000mA	2.5V / 1000mA	3.3V / 1000mA	5.0V / 1000mA
Efficiency(Min. Vin) (typ.)	76%	80%	85%	88%	93%
Efficiency(Max. Vin) (typ.)	66%	71%	76%	80%	85%

Model No. (Single Output)	SR78-6.5S/1000	SR78-9S/1000	SR78-12S/1000	SR78-15S/1000
Max Output Wattage (W)	6.5W	9W	12W	15W
Input Voltage Range (V.DC.)	8.0-36V	11-36V	15-36V	18-34V
Output Voltage (V.DC.)	6.5V / 1000mA	9.0V / 1000mA	12V / 1000mA	15V / 1000mA
Efficiency(Min. Vin) (typ.)	93%	95%	95%	96%
Efficiency(Max. Vin) (typ.)	87%	90%	92%	93%

Model No. (Single Output)		SR78-1.5 S/1000	SR78-1.8 S/1000	SR78-2.5 S/1000	SR78-3.3 S/1000	SR78-5S /1000	SR78-6.5 S/1000	SR78-9S /1000	SR78-12 S/1000	SR78-15 S/1000
Max Output Wattage (W)		1.5W	1.8W	2.5W	3.3W	5W	6.5W	9W	12W	15W
Input	Input Voltage Range (V.DC.)(Note 1)	4.6-36V	4.6-36V	4.6-36V	4.75-36V	6.5-36V	8.0-36V	11-36V	15-36V	18-34V
	Nominal input	9 VDC			12 VDC			24 VDC		
	Input filter	C filter								
Output	Voltage (V.DC.)	1.5V	1.8V	2.5V	3.3V	5.0V	6.5V	9.0V	12V	15V
	Voltage Accuracy (at Full Load)	±3%								
	Current (mA) (max.)	1000								
	Quiescent Current (mA) (max.)	1~2 (Vin=min. to max. at 0% Load)								
	Minimum Load (Note 2)	0%								
	Line Regulation (LL-28V) (typ.) (Note 1)	±1% (at full load)								
	Load Regulation (10-100%) (typ.)	±0.8% (Nominal input)								
	Ripple&Noise (Nominal Input) (20MHz)	50mV				75mV		100mV	120mV	
	Switching Frequency (typ.)	500KHz								
	Capacitor Load (max)	470uF								
Protection	Current Limit (mA) (max.)	2000								
	Short Circuit Protection	Continuous, auto-recovery								
	Thermal Shout Down (typ.)	+160℃ (Internal IC Junction)								
Environment	Operating Temperature	-40℃…+85℃ (with derating)								
	Storage Temperature	-55℃…+125℃								
	Operating Case Temperature	+100℃ max.								
	Case Thermal Impendance (max.)	70℃ / W								
	Humidity	95% RH								
	MTBF	5,358,000 h @ 25℃ (MIL-HDBK-217F)								
Physical	Dimension (L x W x H)	0.45 x 0.40 x 0.3 Inches (11.5 x 10.2 x 7.55 mm) Tolerance ±0.25 mm								
	Case Material	Non-conductive black plastic								
	Weight	1.9 g								
EMC	Conducted Emissions	EN 55022 Class A(Note3)								
	Radiated Emissions	EN 55022 Class A(Note3)								
	Conducted Emissions	EN 55022 Class B(Note4)								
	Radiated Emissions	EN 55022 Class B(Note4)								

Note 1:

a. Input capacitor needed only if Vin>28VDC



b. Line Regulation (LL-36V) (typ.) <

SR78-1.5S、SR78-1.8S<±2.5% (at Full Load)

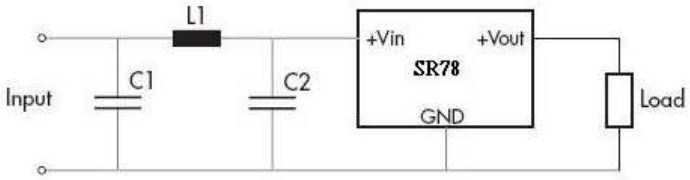
SR78-2.5S、SR78-3.3S<±2% (at Full Load)

Note 2:

a. The input voltage minus the output voltage should be greater than 3 VDC, if less, a 3% minimum load is required for proper regulation.

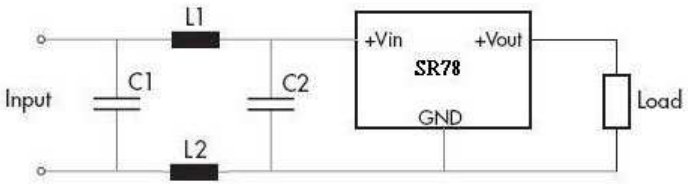
b. For SR78-1.5S or SR78-1.8S models, Inputs greater than 28VDC require 3% minimum load for proper regulation.

Note 3:



C1=6.8uF
C2=6.8uF
L1=8.2uH

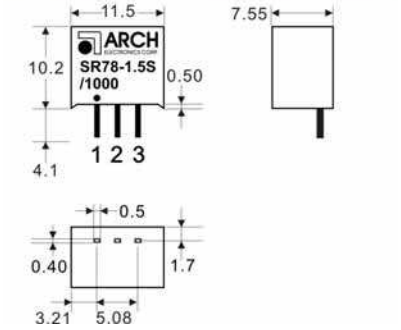
Note 4:



C1=22uF, L1=50mH
C2=22uF, L2=50mH

MECHANICAL DIMENSION (Top View)

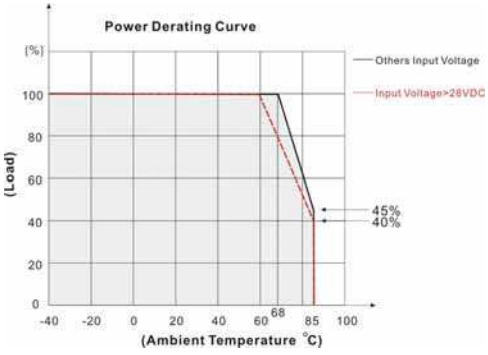
A Type (PIN material: Metal)



PIN#	Single
1	+VIN
2	GND
3	+VOUT

DERATING

SR78-1.5S、5S、1.8 S、2.5 S、3.3S



SR78-6.5S、9S、12 S、15S