

# 1 Watt 1W Series



- Regulated Single & Dual Output
- Wide 2:1 Input Range
- SIP or DIP Package
- 1000 VDC Isolation (Optional 3000 VDC)
- Continuous Short Circuit Protection
- Optional Metal Case
- 3 Year Warranty

## Specification

### Input

- Input Voltage Range • See table
- Input Reflected Ripple Current • 35 mA pk-pk through 12  $\mu$ H inductor, 5 Hz to 20 MHz
- Input Reverse Voltage Protection • None
- Input Filter • Capacitor
- Input Surge • 5 V models: 12 VDC for 100 ms  
12 V models: 24 VDC for 100 ms  
24 V models: 40 VDC for 100 ms  
48 V models: 80 VDC for 100 ms

### Output

- Output Voltage • See table
- Minimum Load • None<sup>(6)</sup>
- Line Regulation •  $\pm 0.5\%$  max
- Load Regulation •  $\pm 1.0\%$  max from 25-100% load<sup>(7)</sup>
- Setpoint Accuracy •  $\pm 2\%$  max
- Ripple & Noise • 80 mV pk-pk max, 20 MHz bandwidth<sup>(6)</sup>
- Short Circuit Protection • Continuous with auto recovery (foldback)
- Cross Regulation •  $\pm 5\%$  on dual output models
- Remote On/Off • Optional on SIP package model<sup>(4)</sup>
- Temperature Coefficient •  $0.02\%/^{\circ}\text{C}$

### General

- Efficiency • See table
- Isolation Voltage • 1000 VDC (optional 3000 VDC)
- Isolation Resistance •  $10^9 \Omega$
- Isolation Capacitance • 60 pF
- Switching Frequency • 100-650 kHz
- MTBF •  $>1.66$  Mhrs to MIL-HDBK-217F at 25  $^{\circ}\text{C}$ , GB

### Environmental

- Operating Temperature •  $-40^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$ , derate from 100% load at  $85^{\circ}\text{C}$  to 0% load at  $100^{\circ}\text{C}$
- Storage Temperature •  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Case Temperature •  $100^{\circ}\text{C}$  max
- Cooling • Convection cooled

### Notes

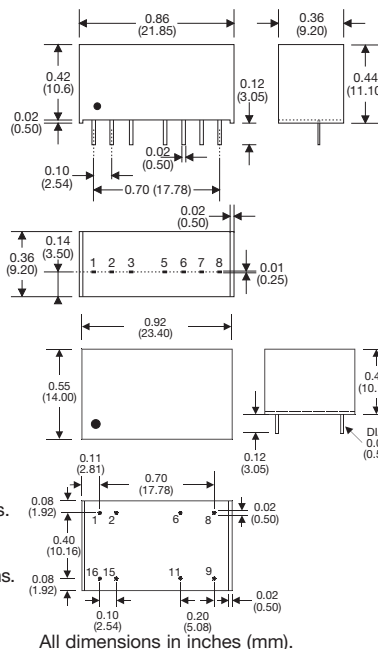
- For dual inline package replace 'S' in model number with 'D'.
- For optional 3 kV isolation add suffix '-H' to the model number.
- For dual output delete suffix 'A' & split output current equally between rails.
- For optional Remote On/Off on SIP models, add suffix '-R' to model number. Applying 5 V via 1 k  $\Omega$  current limiting resistor and diode turns output off.
- For optional metal case, add suffix '-M' to model number, contact sales for details.
- Output capacitor of 100  $\mu\text{F}$  required to meet quoted ripple & noise.
- Minimum load of 25% required to meet quoted specifications.
- Operation at no load will not damage the converter but it may not meet all specifications.
- Pin pitch tolerance:  $\pm 0.014$  ( $\pm 0.35$ ), Case tolerance:  $\pm 0.02$  ( $\pm 0.5$ )
- Weight: SIP 0.009 lbs (4.0 g), DIP 0.013 lbs (6.0 g)  
Metal case weight: SIP 0.014 lbs (6.5 g), DIP 0.017 lbs (8.0 g)

Input Voltage	No Load Input Current	Output Voltage <sup>(8)</sup>	Output Current	Max. Capacitive Load	Efficiency	Model Number <sup>(1-5)</sup>
4.5-9.0 V	15 mA	3.3 V	303 mA	3300 $\mu\text{F}$	67%	IW0503SA <sup>†</sup>
	15 mA	5.0 V	200 mA	3300 $\mu\text{F}$	67%	IW0505SA <sup>†</sup>
	40 mA	9.0 V	111 mA	470 $\mu\text{F}$	70%	IW0509SA <sup>†</sup>
	55 mA	12.0 V	83 mA	470 $\mu\text{F}$	70%	IW0512SA <sup>†</sup>
	55 mA	15.0 V	67 mA	470 $\mu\text{F}$	70%	IW0515SA <sup>†</sup>
70 mA	24.0 V	42 mA	220 $\mu\text{F}$	68%	IW0524SA <sup>†</sup>	
9.0-18.0 V	15 mA	3.3 V	303 mA	3300 $\mu\text{F}$	70%	IW1203SA <sup>†</sup>
	15 mA	5.0 V	200 mA	3300 $\mu\text{F}$	72%	IW1205SA <sup>†</sup>
	15 mA	9.0 V	111 mA	470 $\mu\text{F}$	77%	IW1209SA <sup>†</sup>
	15 mA	12.0 V	83 mA	470 $\mu\text{F}$	77%	IW1212SA <sup>†</sup>
	15 mA	15.0 V	67 mA	470 $\mu\text{F}$	77%	IW1215SA <sup>†</sup>
15 mA	24.0 V	42 mA	220 $\mu\text{F}$	73%	IW1224SA <sup>†</sup>	
18.0-36.0 V	8 mA	3.3 V	303 mA	3300 $\mu\text{F}$	70%	IW2403SA <sup>†</sup>
	8 mA	5.0 V	200 mA	3300 $\mu\text{F}$	72%	IW2405SA <sup>†</sup>
	8 mA	9.0 V	111 mA	470 $\mu\text{F}$	75%	IW2409SA <sup>†</sup>
	8 mA	12.0 V	83 mA	470 $\mu\text{F}$	75%	IW2412SA <sup>†</sup>
	8 mA	15.0 V	67 mA	470 $\mu\text{F}$	75%	IW2415SA <sup>†</sup>
8 mA	24.0 V	42 mA	220 $\mu\text{F}$	75%	IW2424SA <sup>†</sup>	
36.0-72.0 V	6 mA	3.3 V	303 mA	3300 $\mu\text{F}$	66%	IW4803SA
	6 mA	5.0 V	200 mA	3300 $\mu\text{F}$	68%	IW4805SA
	6 mA	9.0 V	111 mA	470 $\mu\text{F}$	70%	IW4809SA
	6 mA	12.0 V	83 mA	470 $\mu\text{F}$	70%	IW4812SA
	6 mA	15.0 V	67 mA	470 $\mu\text{F}$	70%	IW4815SA
6 mA	24.0 V	42 mA	220 $\mu\text{F}$	68%	IW4824SA	

<sup>†</sup> Available from Farnell & element14. See pages 284-290.

<sup>^</sup> Available from Newark. See pages 291-296.

### Mechanical Details



PIN CONNECTIONS		
Pin	Single	Dual
1	-V Input	-V Input
2	+V Input	+V Input
3	Opt. ROF*	Opt. ROF**
5	N.P. / N.C.	N.C.
6	+V Output	+V Output
7	-V Output	-V Output
8	NC	Common

\*When optional ROF is present pin 5 is No Connection. When not present pin 3 & 5 are No Pin.

\*\*When optional ROF is present pin 5 is No Connection. When not present pin 3 & 5 are No Connection.

PIN CONNECTIONS		
Pin	Single	Dual
1	-V Input	-V Input
2	-V Input	-V Input
6	NC	Common
8	NC	-V Output
9	+V Output	+V Output
11	-V Output	Common
15	+V Input	+V Input
16	+V Input	+V Input