

**30 Watt**

# 2x2 Inch Package A

## 2:1 Input Range

### Ultra Low Profile



- o Wide Input Range
- o Continuous Short Circuit Protection
- o Regulated Output
- o 1500 VDC Isolation
- o Efficiency up to 88%
- o -40°C to +85°C Operating Temperature Range

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF	Cap. Load	
				NO LOAD	FULL LOAD			
30ARS12W5M	9-18 VDC	5 VDC	6000 mA	30 mA	3048 mA	82	3300 µF	
30ARS12W7.2M		7.2 VDC	4166 mA		3012 mA	83	2200 µF	
30ARS12W9M		9 VDC	3333 mA		2976 mA	84	1000 µF	
30ARS12W12M		12 VDC	2500 mA		2941 mA	85		
30ARS12W15M		15 VDC	2000 mA					
30ARS12W18M		18 VDC	1666 mA					
30ARS12W24M		24 VDC	1250 mA					
30ARD12W3.3M		±3.3 VDC	±3000 mA	25 mA	2115 mA	78	±2200 µF	
30ARD12W5M		±5 VDC			3048 mA	82		
30ARD12W7.2M		±7.2 VDC	±2083 mA		3012 mA	83	±1000 µF	
30ARD12W9M		±9 VDC	±1666 mA		2976 mA	84		
30ARD12W12M		±12 VDC	±1250 mA					
30ARD12W15M		±15 VDC	±1000 mA		35 mA	2941 mA	85	±470 µF
30ARD12W18M		±18 VDC	±833 mA					±330 µF
30ARD12W24M	±24 VDC	±625 mA	±220 µF					
30ARS24W3.3M	3.3 VDC	6000 mA	25 mA	1031 mA				80
30ARS24W5M	5 VDC			1488 mA	84	2200 µF		
30ARS24W7.2M	7.2 VDC	4166 mA		1436 mA	87	1000 µF		
30ARS24W9M	9 VDC	3333 mA						
30ARS24W12M	12 VDC	2500 mA						
30ARS24W15M	15 VDC	2000 mA						
30ARS24W18M	18 VDC	1666 mA		680 µF				
30ARS24W24M	24 VDC	1250 mA		470 µF				
30ARD24W3.3M	±3.3 VDC	±3000 mA		1057 mA	78	±2200 µF		
30ARD24W5M	±5 VDC			1488 mA	84			
30ARD24W7.2M	±7.2 VDC	±2083 mA		1470 mA	85	±1000 µF		
30ARD24W9M	±9 VDC	±1666 mA						
30ARD24W12M	±12 VDC	±1250 mA						
30ARD24W15M	±15 VDC	±1000 mA		1436 mA	87	±470 µF		
30ARD24W18M	±18 VDC	±833 mA	±330 µF					
30ARD24W24M	±24 VDC	±625 mA	±220 µF					
30ARD24W24M	±24 VDC	±625 mA	30 mA					

**SPECIFICATIONS**

All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	INPUT CURRENT		%EFF	Cap. Load
				NO LOAD	FULL LOAD		
30ARS48W3.3M	36-72 VDC	3.3 VDC	6000 mA	20 mA	522 mA	79	3300 $\mu$ F
30ARS48W5M		5 VDC			753 mA	83	
30ARS48W7.2M		7.2 VDC	4166 mA		744 mA	84	2200 $\mu$ F
30ARS48W9M		9 VDC	3333 mA		726 mA	86	1000 $\mu$ F
30ARS48W12M		12 VDC	2500 mA				
30ARS48W15M		15 VDC	2000 mA		710 mA	88	680 $\mu$ F
30ARS48W18M		18 VDC	1666 mA				470 $\mu$ F
30ARS48W24M		24 VDC	1250 mA		515 mA	80	$\pm$ 2200 $\mu$ F
30ARD48W3.3M		$\pm$ 3.3 VDC	$\pm$ 3000 mA				
30ARD48W5M		$\pm$ 5 VDC	$\pm$ 2083 mA		735 mA	85	$\pm$ 1000 $\mu$ F
30ARD48W7.2M		$\pm$ 7.2 VDC					
30ARD48W9M		$\pm$ 9 VDC	$\pm$ 1666 mA		718 mA	87	$\pm$ 470 $\mu$ F
30ARD48W12M		$\pm$ 12 VDC	$\pm$ 1250 mA				
30ARD48W15M		$\pm$ 15 VDC	$\pm$ 1000 mA		710 mA	88	$\pm$ 330 $\mu$ F
30ARD48W18M		$\pm$ 18 VDC	$\pm$ 833 mA				$\pm$ 220 $\mu$ F
30ARD48W24M		$\pm$ 24 VDC	$\pm$ 625 mA				

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**INPUT SPECIFICATIONS**

Input Voltage Range	2:1
Start up Time (nominal Vin and constant resistive Load)	20 mS
Max. Input Current	see table
No-Load Input Current	see table
Input Filter	Capacitors
Input Reflected Ripple Current <sup>1)</sup>	35 mA p-p

**OUTPUT SPECIFICATIONS**

Voltage Accuracy	±1%
Min. Load Output Current	0 mA
Ripple and Noise, 20MHz BW <sup>2)</sup>	100 mV p-p
Over Current Protection	140% of max. Iout
Short Circuit Protection	Indefinite (Automatic Recovery)
Temperature Coefficient	±0.02%/°C
Capacitor Load <sup>3)</sup>	see table
Line Regulation	±0.5%
Load Regulation	Single (0% to 100% Load) ±0.5% Dual (10% to 100% Load) ±0.5%

## NOTE:

1. Measured Input Reflected ripple current with a simulated source inductance of 12 µH.
2. Ripple/Noise measured with 20 MHz bandwidth.
3. Tested by minimal Vin and constant resistive Load.

**SPECIFICATIONS**

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**GENERAL SPECIFICATION**

Efficiency		see table
I/O Isolation Voltage (3 sec)	Input/Output Case/input & Output	1500 VDC 1000 VDC
I/O Isolation Capacitance		1000 pF
I/O Isolation Resistance		1000 Mohms
Switching Frequency		125 kHz
Humidity		95% rel H
Operating Temperature Temperature		-40°C to +85°C (see Derating Curve) -40°C to +55°C (for 100% Load)
Case Temperature		+100°C max.
Storage Temperature		-40°C to +125°C
Cooling		Nature Convection
Safety Standard (designed to meet)		IEC 60950-1
Case Material		Nickel-coated Brass
Pin Material		Ø1.0 mm Brass Solder-coated
Potting Material		Epoxy (UL94V-0 rated)
Reliability Calculated MTBF (MIL-HDBK-217F)		>1.121 Mhrs
Weight		60 g
Dimensions		2.0 x 2.0 x 0.4 Inches (50.80 x 50.80 x 10.16 mm)

**NOTE:**

Operation under No-Load Conditions will not damage these devices, however they may not meet all listed Specifications.

**ABSOLUTE MAXIMUM RATINGS**

These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.

Input Voltage (100 mS)	12 V	-0.7 VDC to 25 VDC
	24 V	-0.7 VDC to 50 VDC
	48 V	-0.7 VDC to 100 VDC
Soldering Temperature (1.5 mm from case 10 sec. max.)		+260°C max.

**NOTE:**

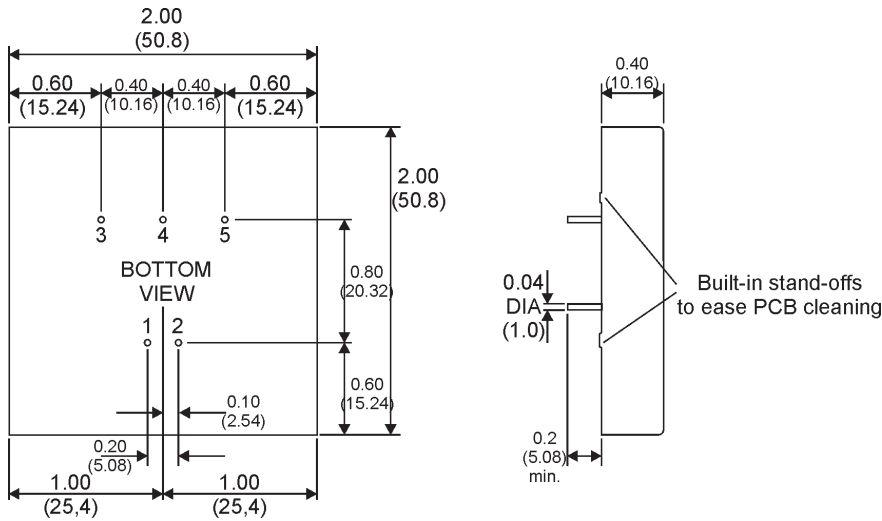
Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.

**SPECIFICATIONS**

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**MECHANICAL SPECIFICATIONS**

Case „A“

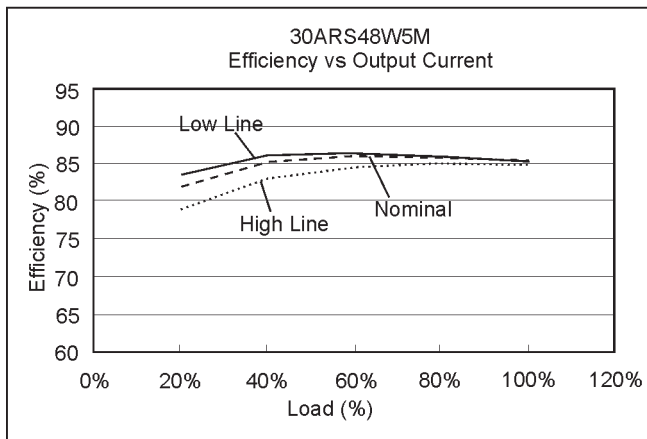
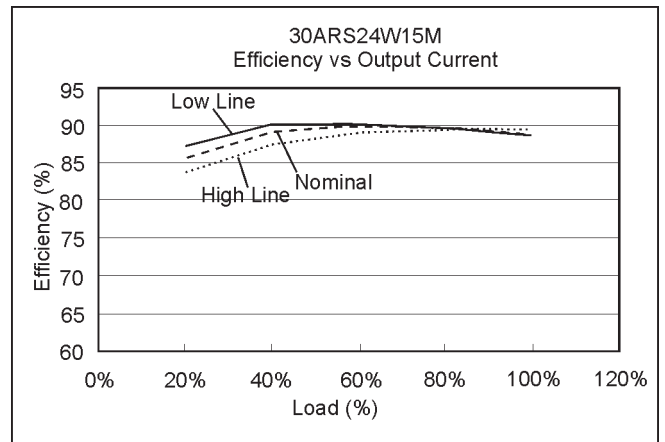
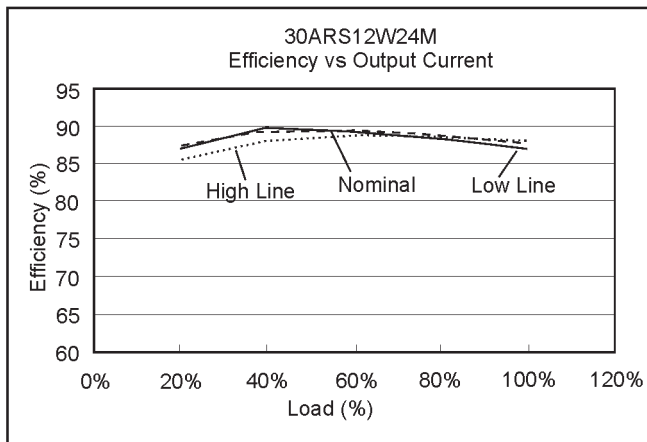


PIN CONNECTIONS		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
3	+OUTPUT	+OUTPUT
4	NO PIN	COMMON
5	-OUTPUT	-OUTPUT

All Dimensions in Inches (mm)

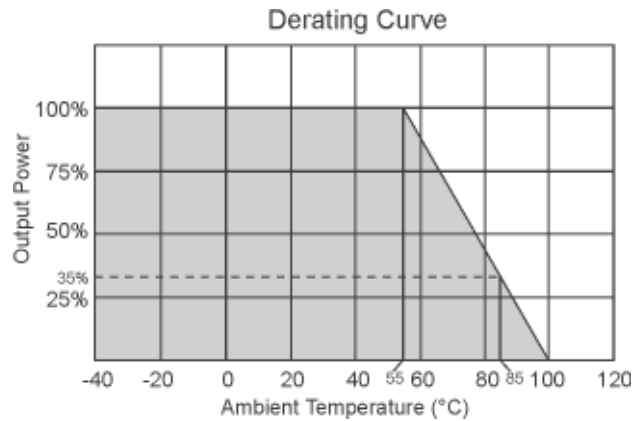
- 1. Pin Diameter: 0.04 ±0.002 (1.0 ±0.05)
- 2. Pin Pitch Tolerance: ±0.014 (±0.35)
- 3. Case Tolerance: ±0.02 (±0.5)

**DIAGRAMS**



**SPECIFICATIONS**

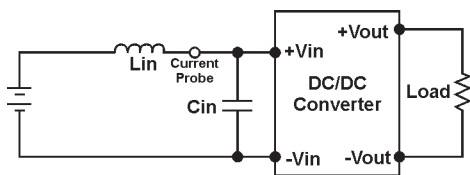
All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted



**APPLICATION NOTES**

**Input Reflected Ripple Current Test Step**

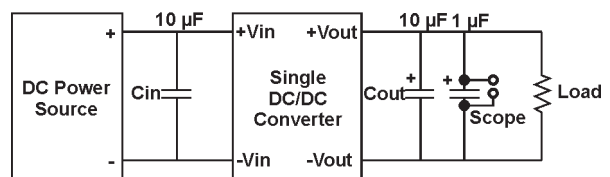
Input reflected ripple current is measured through a source inductor  $L_{in}$  (12  $\mu$ H) and a source capacitor  $C_{in}$  (47  $\mu$ F, ESR<1.0 Ohm at 100 KHz) at nominal input and full load.



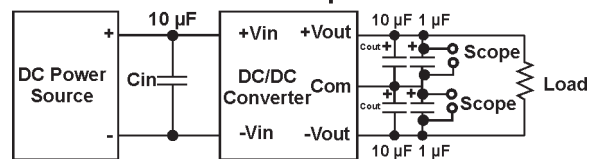
**Output Ripple & Noise Measurement Test**

To reduce ripple and noise, it is recommended to use a 1  $\mu$ F ceramic disc capacitor and a 10  $\mu$ F electrolytic capacitor to at the output.

**Single Output**



**Dual Output**



**NOTICE:**  
The information in this document has been carefully checked. However, no responsibility is assumed for inaccuracies! Specifications can be changed without notice. The latest and most complete information can be found on our website.