30W isolated DC-DC Converter in DIP package
Ultra-wide input and regulated dual output

Patent Protection RoHS

CE Report EN62368-1

UKCA Report BS EN62368-1

FEATURES

- Ultra-wide 4:1 input voltage range
- High efficiency up to 84%
- I/O isolation test voltage: 3k VAC
- Input under-voltage protection, output short circuit, over-voltage, over–current protection
- Meets CISPR32/EN55032 CLASS B without extra components
- Meets IEC61000-4-4 (EFT) at ±4KV without extra components
- Meets IEC61000-4-5 (Surge) at ±2KV without extra components
- Operating ambient temperature range: -40℃ to +85℃
- EN62368 approved

URD48xxxxD-30WR3 series of 30W isolated DC-DC converter products feature an ultra-wide 4:1 input voltage with efficiencies of up to 84%, 3000VAC input to output isolation and the converter safety operate ambient temperature of -40℃ to +85℃, input under-voltage protection, output over-current, over-voltage, short-circuit protection, they are widely used in applications such as electricity distribution network, relay protection, data transmission device, battery power supply device, telecommunication device, distributed power supply system, hybrid module system, remote control system, industrial robot fields.

Selection Guide

Certification	Part No.	Input Voltage (VDC)		Output				Full Load Efficiency②(%) Min./Typ.	Capacitive Load(μF) Max.	
		Nominal (Range)	Max.①	Voltage (VDC)		Current (mA) Max./Min.				
				Vo1	Vo2	Io1	Io2		Vo1	Vo2
CE	URD480524D-30WR3	48 (18-75)	80	5	24	4000/0	417/0	82/84	3000	100
--	URD480924D-30WR3			9	24	1667/0	625/0		2000	220

Note:
① Exceeding the maximum input voltage may cause permanent damage;
② Efficiency is measured In nominal input voltage and rated output load.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	Nominal input voltage	--	745/40	763/80	mA
Reflected Ripple Current		--	40	--	
Surge Voltage (1sec. max.)		-0.7	--	100	VDC
Start-up Voltage		--	--	18	
Shut-down Voltage		12	--	--	
Start-up Time	Nominal input voltage & constant resistance load	--	20	50	ms
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Voltage Accuracy	5%-100% load		--	±1	±3	%
	0%-5% load	Vo1	--	±1	±5	
		Vo2	--	±3	±5	
Linear Regulation	Input voltage variation from low to high at full load	Vo1	--	±0.2	±0.5	
		Vo2	--	±0.5	±1	
Load Regulation①	5%-100% load		--	±0.5	±1	
Transient Recovery Time	25% load step change, nominal input voltage		--	300	500	μs

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Transient Response Deviation	25% load step change, nominal input voltage	Vo1	--	±4	±8	%
		Vo2	--	±3	±5	
Temperature Coefficient	Full load		--	--	±0.03	%/℃
Ripple & Noise②	5%-100% load, 20MHz, nominal input voltage	Vo1	--	40	80	mV p-p
		Vo2	--	50	100	
Over-voltage Protection	Input voltage range		110	--	160	%Vo
Over-current Protection			110	--	190	%Io
Short-circuit Protection			Continuous, self-recovery			

Note:
①Load regulation for 0%-100% load is ±5%;
②The "parallel cable" method is used for Ripple and Noise test, please refer to DC-DC Converter Application Notes for specific information.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input-output Electric Strength Test for 1 minute with a leakage current of 5mA max.	3000	--	--	VAC
	Vo1-Vo2 Electric Strength Test for 1 minute with a leakage current of 5mA max.	3000	--	--	
Insulation Resistance	Input-output resistance at 500VDC	1000	--	--	MΩ
Operating Temperature	See Fig. 1	-40	--	+85	℃
Storage Temperature		-55	--	+125	
Storage Humidity	Non-condensing	5	--	95	%RH
Pin Soldering Resistance Temperature*	Soldering spot is 1.5mm away from case for 10 seconds	--	--	300	℃
	Wave soldering,10 seconds	255	260	265	
Vibration		10-150Hz, 5G, 90 Min. along X, Y and Z			
Switching Frequency①	PWM mode	--	300	--	KHz
MTBF	MIL-HDBK-217F@25℃	1000	--	--	K hours

Note:
*The pin resistance temperature is not the actual set temperature of the soldering iron, but the temperature required for a good solder joint. The actual set temperature by the customer needs to be comprehensively set based on the thickness of the PCB, the size of the copper cladding, the power of the soldering iron, and the selection of the soldering iron tip.
①Switching frequency is measured at full load. The module reduces the switching frequency for light load (below 50%) efficiency improvement.

Mechanical Specifications

Dimensions	70.00 x 48.00 x 26.00 mm
Weight	50.0g (Typ.)
Cooling method	Free air convection

Electromagnetic compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
Immunity	ESD	IEC/EN61000-4-2	Contact ±8KV	perf. Criteria B
	RS	IEC/EN61000-4-3	30V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4	±4KV	perf. Criteria B
	Surge	IEC/EN61000-4-5	±2KV	perf. Criteria B
	CS	IEC/EN61000-4-6	10 Vr.m.s	perf. Criteria A

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Typical Characteristic Curve

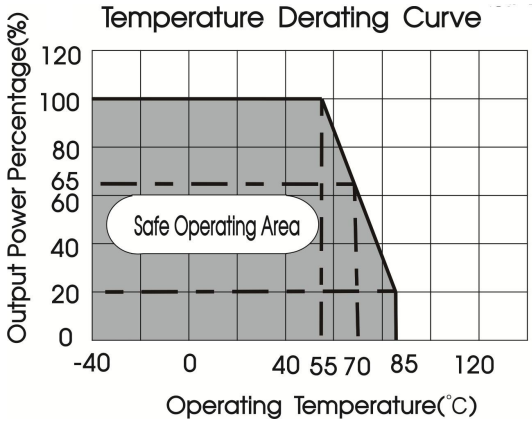
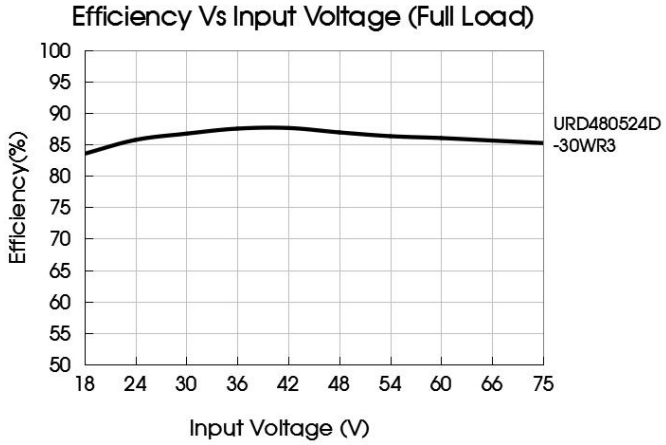
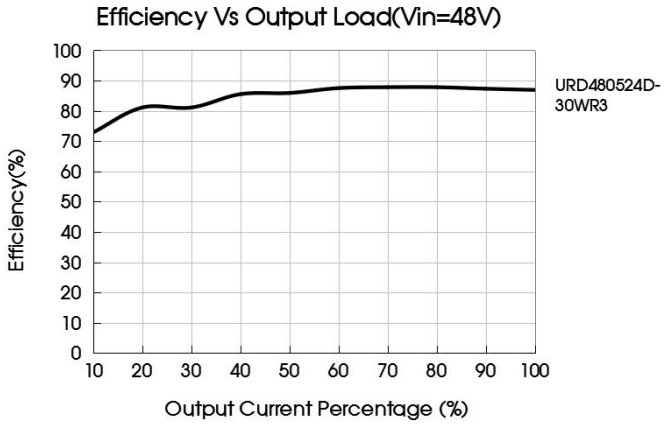


Fig. 1





Design Reference

1. The products do not support parallel connection of their output
2. For additional information please refer to DC-DC converter application notes on www.mornsun-power.com

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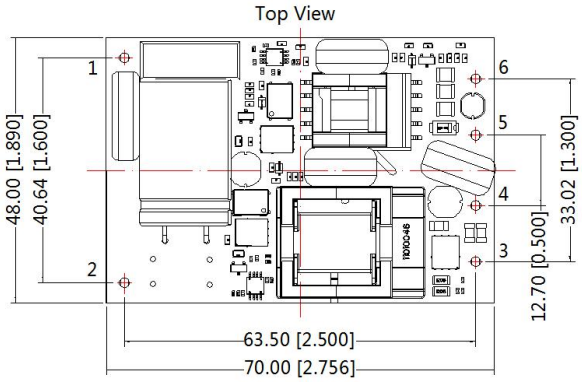
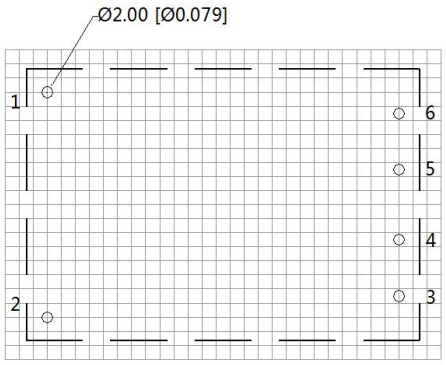
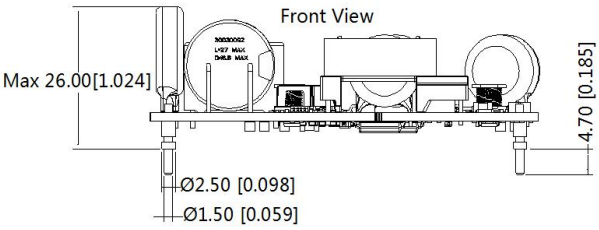
Dimensions

THIRD ANGLE PROJECTION





Note : Grid: 2.54*2.54mm



Pin-Out	
Pin	Function
1	Vin
2	GND
3	Vo1+
4	Vo1-
5	Vo2-
6	Vo2+

Note :
Unit: mm[inch]
Pin diameter tolerances: ±0.10[±0.004]
General tolerances: ±0.50[±0.020]
The layout of the device is for reference only , please refer to the actual product

Note:
1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220060;
2. We suggest to use module at load of over 5%, if not, the ripple of the product may exceeds the specification, but does not affect the reliability of the product;
3. The maximum capacitive load offered were tested at input voltage range and full load;
4. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
5. All index testing methods in this datasheet are based on company corporate standards;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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