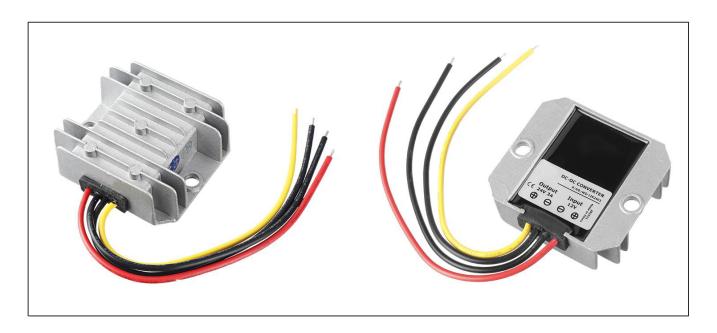


Input voltage	Output voltage	Output current	Output power	Efficiency	Size
10-23V DC	24V DC	3 Amps	72 Watts	95%	64*57*22mm



The WG-12S2403 is a Non-isolated DC/DC boost converter that uses a synchronous rectification technology, and features high efficiency and power density. It has the dimensions of 64mm x 57mm x 22mm (2.52 in. x 2.24 in. x 0.86 in) and provides the rated output voltage of 24 V and the maximum output current of 3A.

Features

- Design meeting RoHS / CE
- High efficiency: 95% (@ 12Vin, 25℃)
- Import capacitors, high reliability
- Non-isolated between input and output
- Support -40 °C environment
- 100% full load burn-in test
- Over load, Low voltage protections
- Die-cast aluminum shell, epoxy potting
- Waterproof level IP68
- 2 Years warranty

Model naming method

WG-12S2403

Applications

- Industrial
- Alternative Energy
- Golf Cart
- Forklift
- Electromotor
- Telecommunications
- Boat & Yacht
- Medical
- Dual battery system
- LED Marketplaces and so on.

12 : Input voltage

S: Single output type

24: Output voltage

03: Output current



Electrical Specifications

Conditions: TA = 25 °C (77°F), Airflow = 1 m/s (200LFM), Vin =12V, Vout =24V, unless otherwise specified.

Parameter Min. Typ. Max. Units Remarks Absolute maximum ratiures -40 -40 +50 °C February Operating ambient temperature -40 - 83 °C February Shell ambient temperature -55 - 100 °C February Operating humidity 5 - 95 % Non-condensing Atmospheric pressure 62 - 106 Kpa Altitude - - 4000 m Cooling way - - - Month of M	2011416101101 171 20 0 (7	, , , , , , , , , , , , , , , , , , ,	1), 711110W = 1111/3 (2002111), VIII = 12V, VOUC = 21V, UIII = 35 Oction Wise Specifical.			
Operating ambient temperature -40 - +50 °C Shell ambient temperature -40 - 83 °C Storage temperature -55 - 100 °C Operating humidity 5 - 95 % Non-condensing Atmospheric pressure 62 - 106 Kpa Altitude - - 4000 m Cooling way - - - 4000 m Cooling way 10 12 23 V - Toput characteristics Input voltage 10 12 23 V - Max. input voltage - - 24 V Continuous Undervoltage shutdown 7.6 7.9 8.2 V Automatic recovery Undervoltage shutdown 7.6 7.9 8.2 V Automatic recovery Undervoltage shutdown 7.6 7.9 8.2 V Automatic recove	Parameter	Min.	Тур.	Max.	Units	Remarks
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Altitude	Operating humidity	5	-	95	%	Non-condensing
Description	Atmospheric pressure	62	-	106	Кра	
Input characteristics	Altitude	-	-	4000	m	
Input voltage	Cooling way	-	-	-		Natural cooling
Max. Input voltage - - 24 V Continuous Undervoltage shutdown 7.6 7.9 8.2 V Automatic recovery Undervoltage recovery 9.0 9.2 9.4 V Automatic recovery Max. Input current - - 8.8 A Vin =9V; Iout =3A No load current - 51 54 mA Vin =12V Positive electrode cable 18 - - AWG If the wire length is greater than 50cm, it is recommended to use a thicker wire diameter. Negative electrode cable 18 - - AWG If the wire length is greater than 50cm, it is recommended to use a thicker wire diameter. Positive electrode cable 18 - - AWG If the wire length is greater than 50cm, it is recommended to use a thicker wire diameter. Positive electrode cable 18 - - AWG If the wire length is greater than 50cm, it is If the product has this feature - AWG If the product has this feature In put positive has built-in fuse - 96	Input characteristics					
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Fuse - 20 - A Input positive has built-in fuse Output characteristics Efficiency - 95 - % Vin = 12V; Iout = 3A Output voltage 23.8 24.2 24.4 V Vin = 12V; Iout = 3A Regulator accuracy - ±5 - % Voltage regulation - ±3 - % Load Regulation - ±3 - % Overvoltage protection - NA - V Output current 0 - 3 A Vin=12V External capacitance - NA - μF Don't need Output ripple and noise - 260 300 mVp-p Vin = 10-23V; Iout=3A, Oscilloscope bandwidth: 20 MHz Output voltage rise time - 13 20 mS Boot delay time - 20 30 mS Out voltage overshoot - - 5 Vin = 12V, 50%-75% Load step	Negative electrode cable	18	-	-	AWG	recommended to use a thicker wire diameter.
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External capacitance - NA - µF Don't need Output ripple and noise - 260 300 mVp-p Vin =10-23V; Iout=3A, Oscilloscope bandwidth: 20 MHz Output voltage rise time - 13 20 mS Boot delay time - 20 30 mS Out voltage overshoot - 5 % Vin =12V, 50%-75% Load step Over temperature protection - NA - Output can't shorted for boost converters Positive electrode cable 18 - AWG If the wire length is greater than 50cm, it is	Output current	0	-	3	А	
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Over temperature rotection C Shell test Short circuit protection - NA - Output can't shorted for boost converters Positive electrode cable 18 AWG If the wire length is greater than 50cm, it is	Boot delay time	-	20	30	mS	
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Positive electrode cable 18 AWG If the wire length is greater than 50cm, it is	protection	-	-	_		Shell test
	Short circuit protection	-	NA	-		Output can't shorted for boost converters
Negative electrode policy 10	Positive electrode cable	18		-	AWG	If the wire length is greater than 50cm, it is
Negative electrode cable 18 AWG recommended to use a thicker wire diameter.	Negative electrode cable	18	-	-	AWG	recommended to use a thicker wire diameter.



Safety and EMC features						
	Input to Output	-	V	Lookaga gumant < 2 FmA 1min		
Anti-electric Strength	Input to Shell	≥500	V	Leakage current ≤ 3.5mA, 1min,		
	Output to Shell	≥500	V	no breakdown, no arcing		
	Input to Output	≥50	МΩ			
Insulation resistance	Input to Shell			Test voltage = 500V		
	Output to Shell					
Other characteristics						
Weight	≤ 120		g			
Package	White box					
MTBF ≥200,000		·	Н	Vin= 12V; Iout= 3A		
Switching frequency 130±10		KHz				

Characteristic Curves

Conditions: TA = 25° C (77°F), Vin = 12 V, Vout = 24 V , unless otherwise specified.

Figure 1, Efficiency

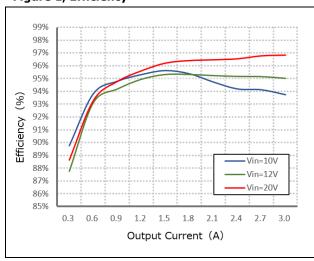


Figure 2, Power dissipation

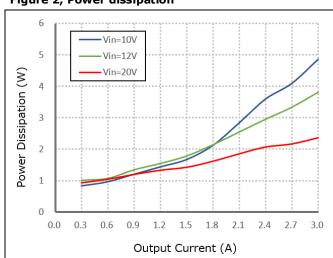
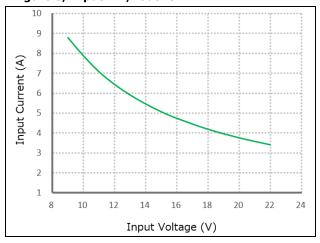


Figure 3, Input V-I, Iout=3A





Typical Waveforms

Conditions: TA = 25° C (77° F), Vin = 12V, unless otherwise specified.

Figure 4, 25% - 50% load dynamic

1 500mV/ 2 3 4 10.00ms/ 0.0s 自动

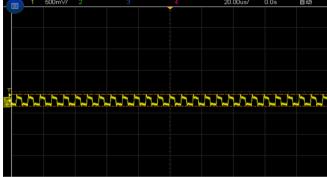
Figure 5, 50% - 75% load dynamic



Figure 6, Output voltage established (Iout = 3A)



Figure 7, Output ripple & noise (Iout = 3A)



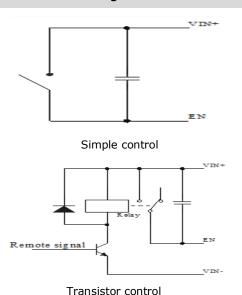


Feature Description

Remote On/Off (EN) (Optional)

Logic	Low level	High level	Left open
Enable	(0 - 10Vdc)	(10-23Vdc)	
Positive logic	Off	On	Off

Various circuits for driving the EN



Wiring Instructions

The input and output of this product is terminals. The user should ensure that the input and output wires and terminals are connected reliably, and pay attention to the wire diameter to meet the requirements of the power supply current. If the cable to be used is long, it needs Considering the voltage drop of the wire, if the voltage drop is too large, the voltage output at the load end may not meet the load demand. In this case, consider using a thicker wire diameter or reducing the length of the wire. Generally, if long wiring is required. Long line should be used on the side where the current is relatively small. For example, this product is a step-down product, so long lines should be used on the input side.

Input Undervoltage Protection

The converter will shut down after the input voltage drops below the under-voltage protection threshold for shutdown. The converter will start to work again after the input voltage reaches the input under voltage protection threshold for startup. For the Hysteresis, see the Protection characteristics.

Output Overcurrent Protection

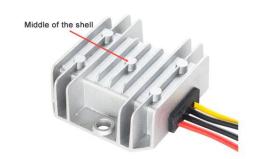
The converter equipped with current limiting circuitry can provide protection from an output overload or short circuit condition. If the output current exceeds the output overcurrent protection set point, the converter enters hiccup mode. When the fault condition is removed, the converter will automatically restart.



Thermal Consideration

Sufficient airflow should be provided to help ensure reliable operating of the WG-12S2403

Therefore, thermal components are mounted on the top surface of the WG-12S2403 to dissipate heat to the surrounding environment by conduction, convection, and radiation. Proper airflow can be verified by measuring the temperature at the middle of the base plate.



Dimension (unit: mm)

Shell installation diagram

Thickness: 22mm

Center distance: 54mm



