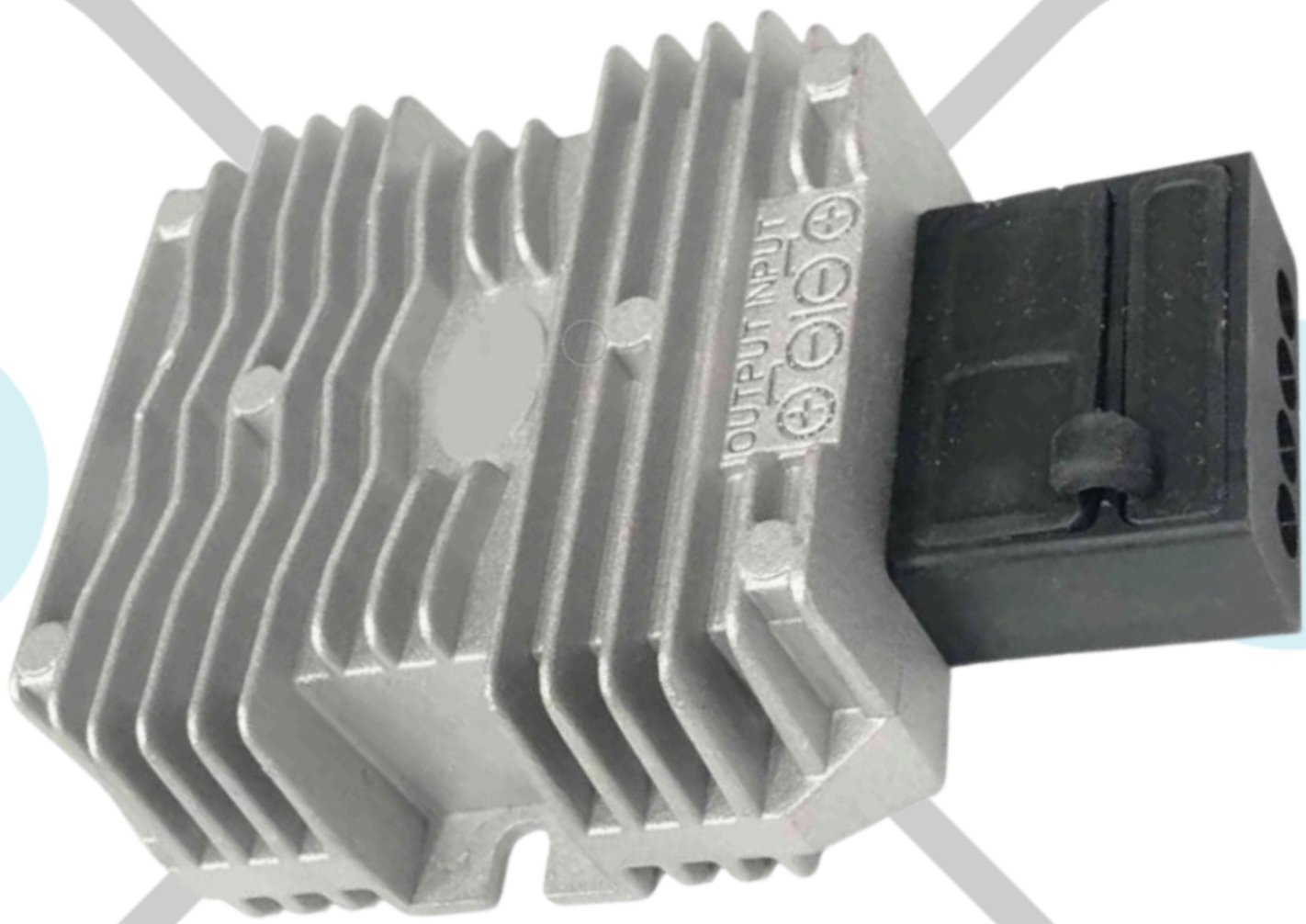
ROBOWAY
ENLIVENING ROBOTICS

DC DC Converter

RW-1116-50-75-12-120W

Input Voltage	Output voltage	Output current	Output Power	Efficiency	Dimenssion
51-75V	12V	10 A	120 W	94%	74*74*32mm



The RW-1116-50-75-12-120W is a Non-isolated DC-DC converter that uses a synchronous rectification technology, and featureshigh efficiency and power density. It has the dimensions of 74mm x 74mm x 32mm (2.91 in. x 2.91 in. x 1.26 in) and provides the rated output voltage of 12 V and the maximum output current of 10 Amps.

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Features

- Design meeting RoHS / CE
- High efficiency: 94% (@ 60Vin,25℃)
- Non-isolated between inputand output
- 100% full load burn-in test
- 3 month warranty
- Waterproof level IP68
- Short circuit, Over load, Over temperature protections
- Internal capacitor: NCC & NICHICON(high reliability)

Applications

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

Model naming method

RW-1116-50-75-12-120W

RW-1116: SKU NAME
50-75: Input voltage range
12V: Output voltage
120W: POWER

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Datasheet

Parameter	Min	Typ	Max	Units	Remakrs
Absolute maximum ratings					
Operating ambient temperature	-30	-	+50	°C	
Shell ambient temperature	-30	-	80	°C	
Storage temperature	-55	-	100	°C	
Operating humidity	5	-	95	%	Non-condensing
Atmospheric pressure	62	-	106	kpa	
Altitude	-	-	4000	m	
Cooling way	-	-	-		Natural cooling
Input characteristics					
Input voltage	51	60	75	V	
Max. input voltage	-	-	78	V	Continuous
Undervoltage shutdown	47	48	49	V	Automatic recovery
Undervoltage recovery	50	51	53	V	Automatic recovery
Max. input current	-	-	4.5	A	Vin = 51V; Vout = 10A
No load current	-	27	40	mA	Vin = 60V
Positive electrode cable	-	16	-	AWG	If the wire length is greater than 50cm, it is recommended to use a thicker wire diameter.
Negative electrode cable	-	16	-	AWG	

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Enable PIN cable	-	-	-	AWG	None
Fuse	-	7.5	-	A	Built-in
Output characteristics					
Efficiency	-	94.7	-	%	Vin = 60V; Vout = 10A
Output voltage	12.1	12.2	12.5	V	Vin = 60V; Vout = 10A
Regulator accuracy	-	±2	-	%	
Voltage regulation	-	±2	-	%	
Load Regulation	-	±2	-	%	
Overvoltage protection	13.8	14.3	15	V	Hiccup mode
Output current	0	-	10	A	
Overcurrent protection	10.5	12	14	A	
External capacitance	0	1000	2000	μF	
Output ripple and noise	-	50	100	mVp-p	Vin = 51–75 V; Oscilloscope bandwidth: 20 MHz;
Output voltage risetime	-	95	100	mS	
Boot delay time	-	190	200	mS	
Out voltage overshoot	-	-	5	%	
Over temperatur protection	-	-	170	°C	Chip junction temperature

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Short circuit protection	-	-	-		Long-term (4 hours)short circuit is not damaged, Hiccupmode
Positive electrode cable	-	16	-	AWG	16.5cm length, Yellow
Negative electrode cable	-	`6	-	AWG	16.5cm length, Black
Safety and EMC features					
Anti-electric Strength	Input to Output	-	V		Leakage current ≤ 3.5mA, 1min, no breakdown, no arcing
	Input to Shell	≥500	V		
	Output to Shell	≥500	V		
Insulation resistance	Input to Output	None	MΩ		
	Input to Shell				
	Output to Shell				
Other characteristics					
Weight	≤ 300	g			
Package	white box				
MTBF	≥200,000	H		Vin = 60V; Vout = 10A	
Switching frequency	100±30	KHz			

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Characteristic Curves

Conditions: TA = 25°C (77°F), Vin = 60 V, Vout = 12 V , unlessotherwise specified.

Figure 1, Efficiency

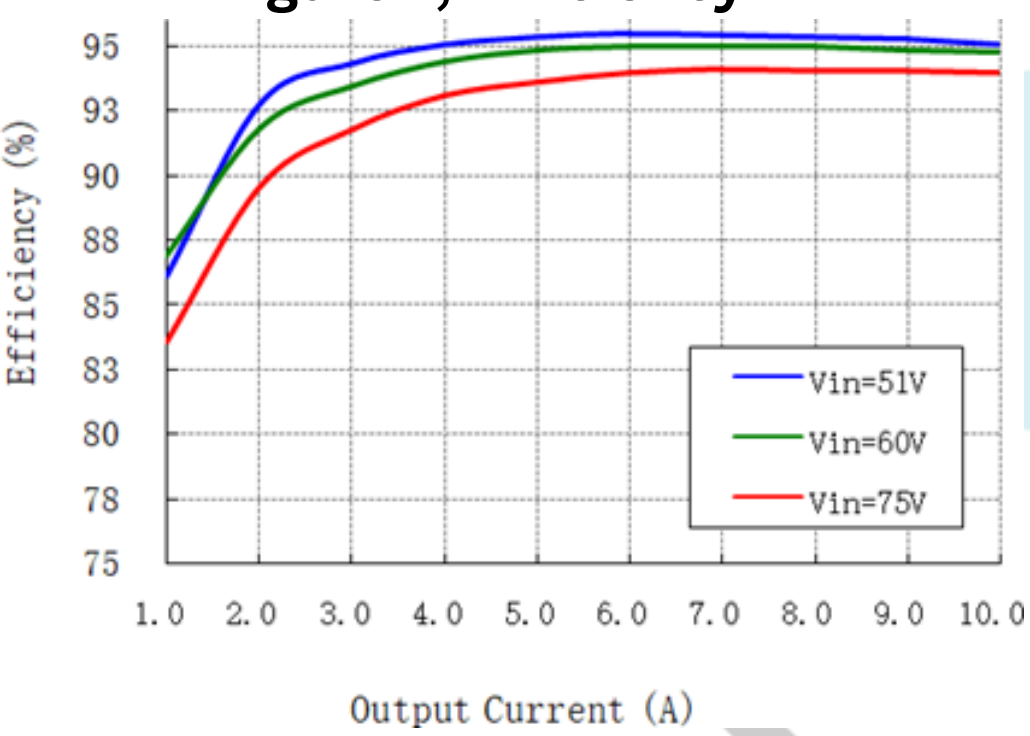


Figure 2, Power dissipation

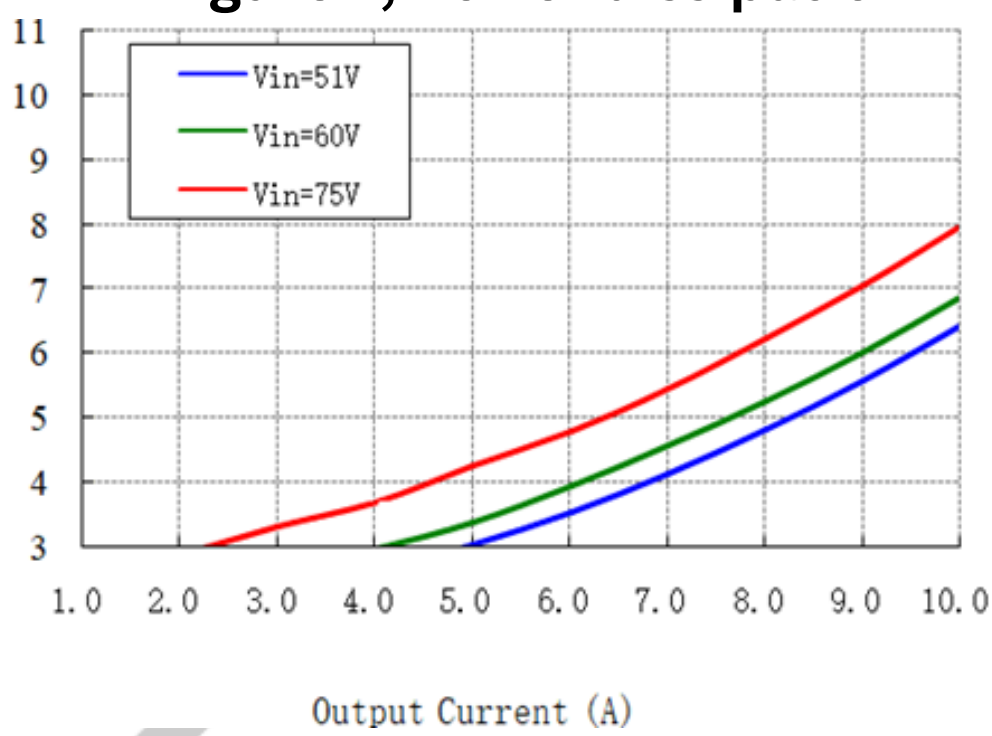
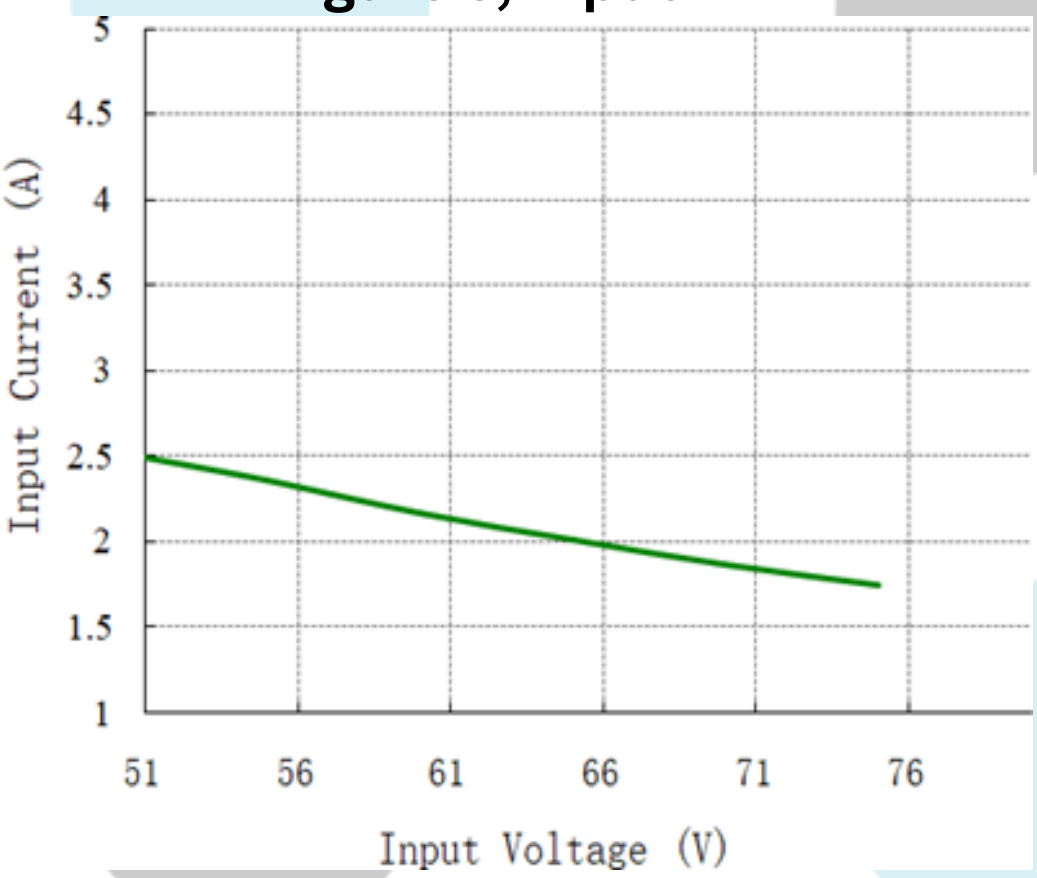


Figure 3, Input V-I



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Typical Waveforms

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Figure 4, 25% - 50%load dynamic

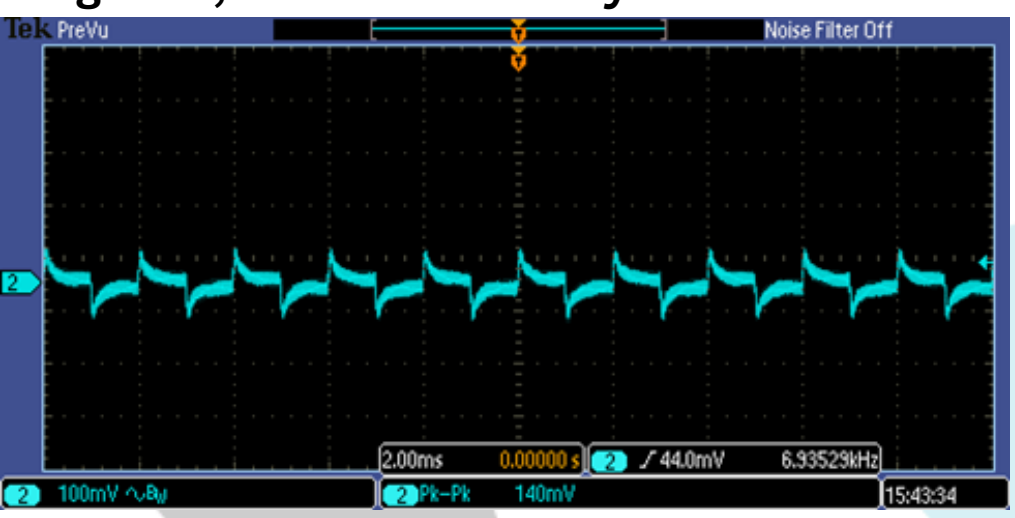

Figure 5, 50% - 75%load dynamic

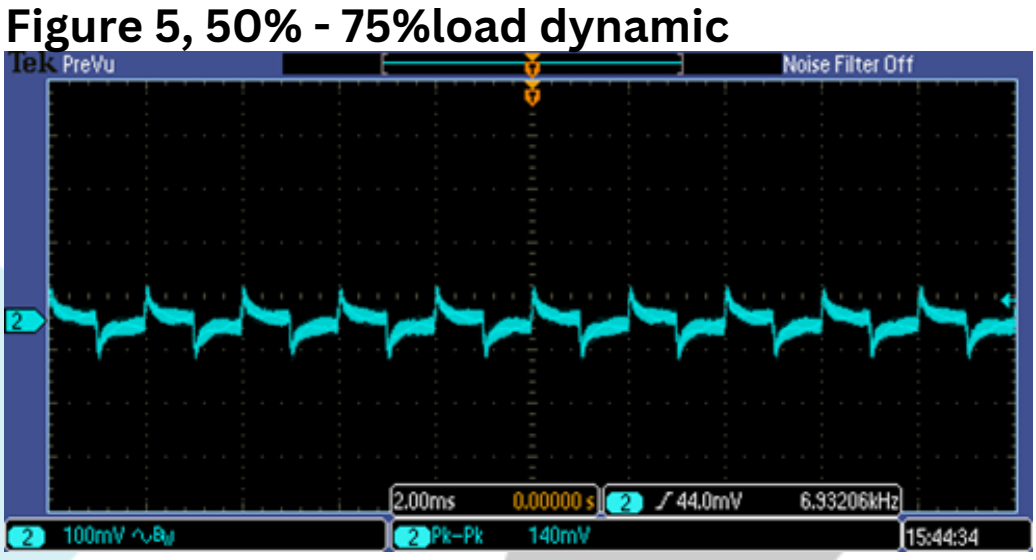

Figure 6, Output voltageestablished (Iout =10A)

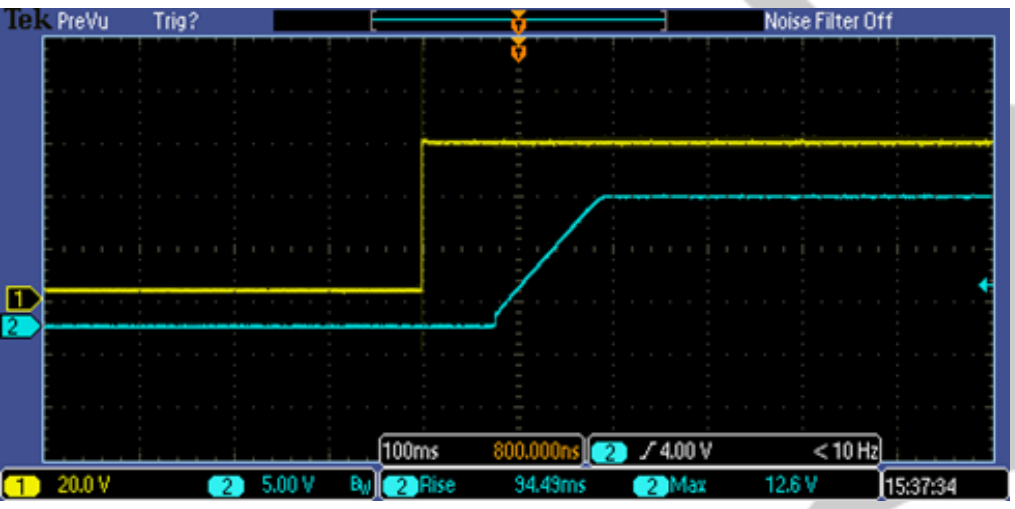

Figure 7, Output ripple& noise (Iout = 10A)