Features

- Wide 4 : 1 Input Voltage Range (9~36V,18~75V)
- Remote On/Off
- Input / Output Isolation Voltage: 1.5K Vdc
- High Efficiency up to 88%
- Output Short Circuit Protection:
  Hiccup & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Over Temperature Protection
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- Adjustable Output Voltage
- Synchronous Rectifier Topology
- Customer Design Available

RoHS compliant

Description

The BWC40W Series are isolated 40W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 50.8×50.8×10.2mm shielded metal case. Further features include wide 4 : 1 input voltage range, remote on/off control, short-circuit protection, over voltage protection and over temperature protection.

Applications

These converters are well suitable for battery operated equipment, measurement equipment, telecom, wireless network, Industry control system, everywhere where isolated, tightly regulated voltages and compact size are required.

Technical Specification

All specifications are typical at nominal input, full load and 25°C unless otherwise stated.

Model Number	Input Voltage Range	Output Voltage (Vdc)	Output Current (mA)		Input Current (mA)		Eff. (2) (%)	Capacitive Load, max. (3) (uF)
			Min. Load (1)	Full. Load	No Load	Full Load		
BWC40-24S2W	9~36V Nominal:24VDC	12	0	3350	122	2018	87	3800
BWC40-24S3W		15	0	2650	112	1972	88	3000
BWC40-24D2W		±12	0	±1650	58	2012	86	2200

Input Specifications		
Input voltage	24V nominal input	9-36Vdc
	48V nominal input	18-75Vdc
Input filter		Pi type
Input surge voltage	24V input	50Vdc
(100ms max.)	48V input	100Vdc
Input reflected ripple current	Nominal Vin and full load	38mAp-p typ.
Start up time	Nominal Vin and constant resistive load	58ms typ.
Remote ON/OFF	Converter: ON	Open or 3.5V＜Vr＜12V
	Converter: OFF	Short (4) or 0V＜Vr＜0.7V
Sourcing current of remote control pin	Nominal Vin	＜0.2 mA
Idle input current (at Remote OFF state)	Nominal Vin	＜20 mA
Environmental Specifications		
Operating ambient temperature		-40°C to +85°C (with derating)
Maximum case temperature		+100°C
Storage temperature range		-55°C to +105°C
Relative humidity		95% RH max.
Temperature coefficient		±0.02% / °C max.
Output Specifications		
Output power		40.2 Watts max.
Voltage accuracy	Full load and nominal Vin	±1%
Minimum load		See table
Line regulation	LL to HL at full load	±0.5%
Load Regulation	25% load to full load Single	±0.5%
	Balanced load Dual	±0.5%
	Unbalanced load 25% to 100% full load	±3%
Ripple and Noise (20MHz Bandwidth)	3.3&5Vout models	50mVp-p max.
	12&15Vout models	85mVp-p max.
Over voltage protection (Zener Diode Clamp)	3.3Vout models	3.9V
	5Vout models	6.2V
	12Vout models	15V
	15Vout models	18V
Capacitive load		See table
Over load protection	% of full load at nominal input	110% min.
Thermal shutdown		115°C typ.
Short circuit protection		Hiccup, automatic recovery
Transient response settling time	50% load step change	300μs typ.
Transient response over shoot	di/dt=0.8A/μs	≤ ±5% of Vo

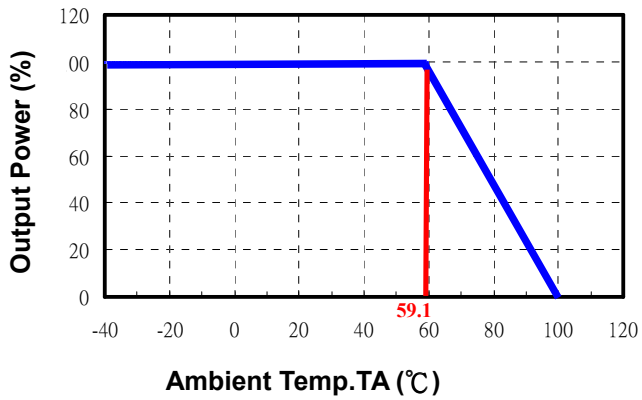
General Specifications

Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10^9 Ohms min.
Isolation capacitance		1200pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		9.68×10^5 Hrs

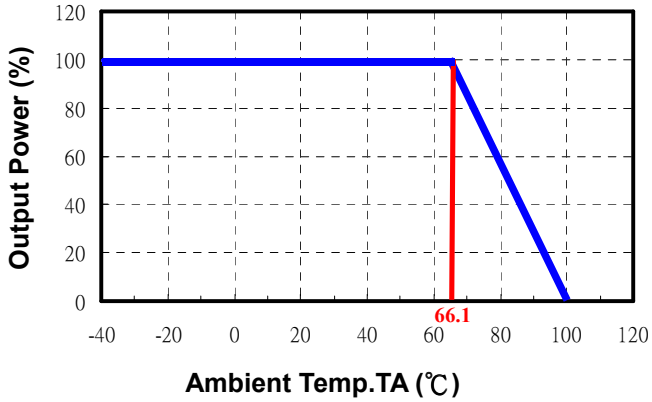
Physical Specifications

Case material	Nickel-coated copper
Base material	FR4 PCB
Potting material	Silicon rubber (UL94 V-0)
Dimensions	2.00 × 2.00 × 0.40 Inch (50.8 × 50.8 × 10.2 mm)
Weight	60g (2.11oz) typ.

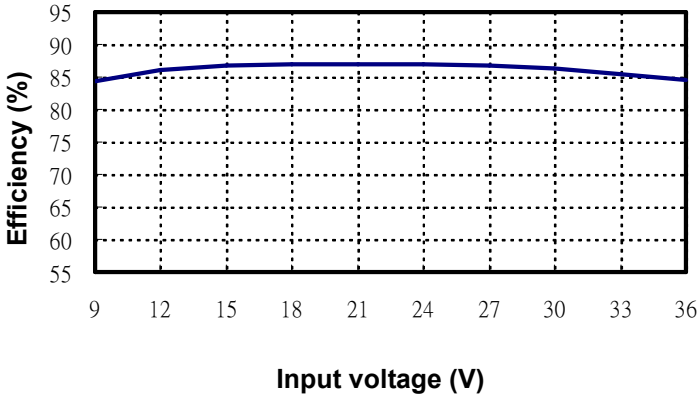
BWC40W Series
Power Derating Curve without Heatsink(5)



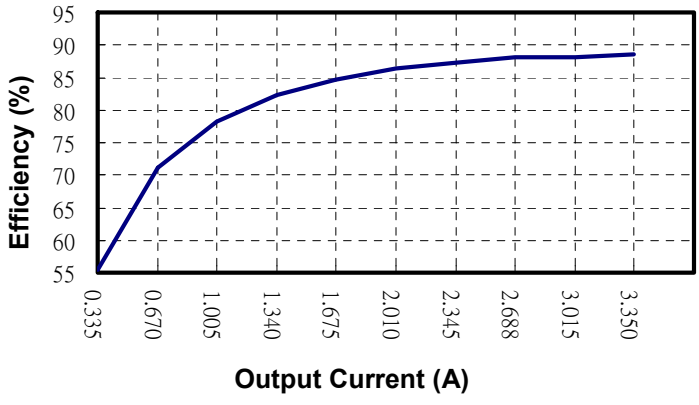
BWC40W Series
Power Derating Curve with Heatsink (5)



BWC40-24S2W
Input voltage vs. Efficiency



BWC40-24S2W
Output Current vs. Efficiency

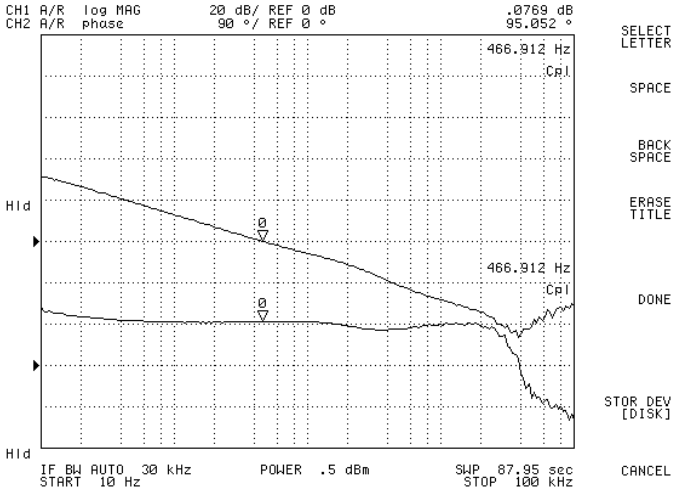


BWC40-24S2W

Transient Response at 50%~100% Max Load

BWC40-24S2W

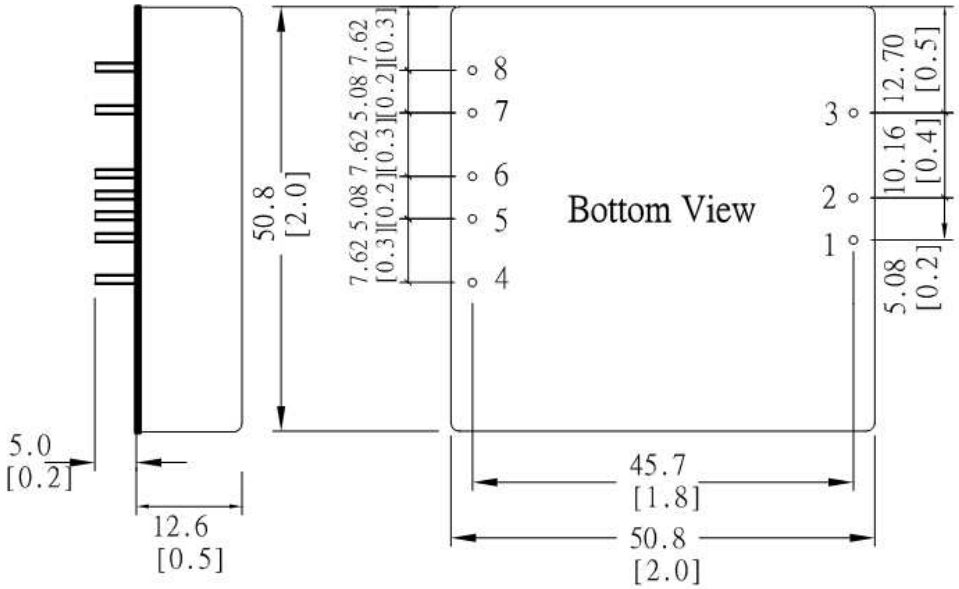
Loop Gain & Phase at Vi=24V,Full Load



Note

1. Io below this value will not damage these converters, however, they may not meet all listed specifications.
2. Typical value, tested at nominal input and full load.
3. For each output.
4. Short to -Vin (Pin 2).
5. Based on BWC40-24S2W.

Mechanical Dimensions



Pin Assignment		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	
4	-Sense	+Vout
5	+Sense	Common
6	+Vout	Common
7	-Vout	-Vout
8	Trim	

Unit: mm [inch]
Tolerance:±0.5[±0.02]

Specifications subject to change without notice.

Heat-sink

Material: Aluminum

Weight: 19g (0.67oz) (without converter)

Note:
The product label on converter has to be removed before mounting the heat-sink.
For volume orders, converters will be supplied with heat-sink already mounted. Please contact factory for quotation.