

Isolated DC-DC Converters BXC60W Series -- 60Watt

PRELIMINARY

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 90%
- 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

**Description**

The BXC60W Series are isolated 60W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 50.8×50.8×12.7mm 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		
BXC60-24S0W	9~36V Nominal:24VDC	3.3	0	14000	70	2437	83	47000
BXC60-24S1W		5	0	12000	80	3086	85	36000
BXC60-24S2W		12	0	5000	100	2976	88	4700
BXC60-24S3W		15	0	4000	90	2941	89	2200
BXC60-48S0W	18~75V Nominal:48VDC	3.3	0	14000	30	1188	85	47000
BXC60-48S1W		5	0	12000	33	1506	87	36000
BXC60-48S2W		12	0	5000	50	1488	88	4700
BXC60-48S3W		15	0	4000	39	1453	90	2200

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Input Specifications		
Input voltage	24V nominal input	9-36Vdc
	48V nominal input	18-75Vdc
Input filter		Pi type
Input surge voltage (100ms max.)	24V input	50Vdc
	48V input	100Vdc
Input reflected ripple current	Nominal Vin and full load	200mA _{p-p} typ.
Start up time	Nominal Vin and constant resistive load	60ms typ.
Remote ON/OFF	Converter: ON	Open or $3.5V < V_r < 12V$
	Converter: OFF	Short ⁽⁴⁾ or $0V < V_r < 0.7V$
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		+105°C
Storage temperature range		-55°C to +125°C
Relative humidity		95% RH max.
Temperature coefficient		±0.02% / °C max.
Output Specifications		
Output power		60 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	±0.5%
		(±0.8% for 3.3V _{out})
Ripple and Noise (20MHz Bandwidth)	3.3V _{out} & 5V _{out} & 12V _{out} models	75mV _{p-p} max.
	15V _{out} models	100mV _{p-p} max.
Over voltage protection (Zener Diode Clamp)	3.3V _{out} models	3.9V
	5V _{out} models	6.2V
	12V _{out} models	15V
	15V _{out} models	18V
Capacitive load		See table
Over load protection	% of full load at nominal input	110% min.
Thermal shutdown		110°C typ.
Short circuit protection		Hiccup, automatic recovery
Transient response settling time	50% load step change	3ms typ.
Transient response over shoot	di/dt=0.8A/μs	≤ ±5% of V _o

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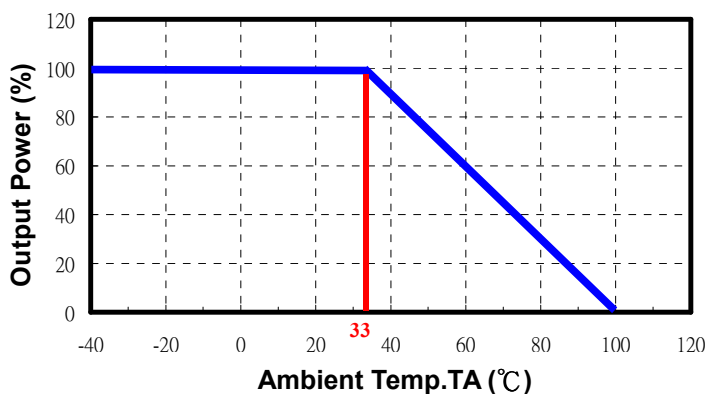
General Specifications

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		8.88×10^5 Hrs

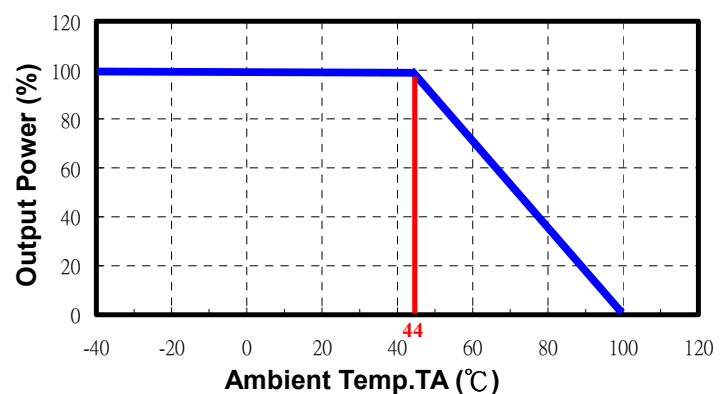
Physical Specifications

Case material	Nickel-coated copper
Base material	FR4 PCB
Potting material	Silicon rubber (UL94 V-0)
Dimensions	2.0 × 2.0 × 0.5 Inch (50.8 × 50.8 × 12.7 mm)
Weight	84g (2.96oz) typ.

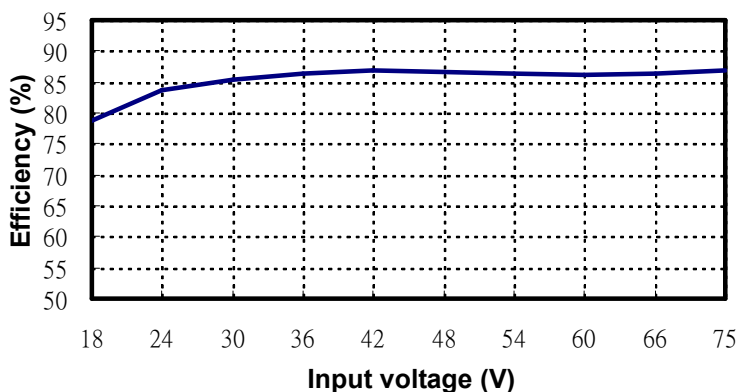
BXC60W Series
Power Derating Curve without Heatsink⁽⁵⁾



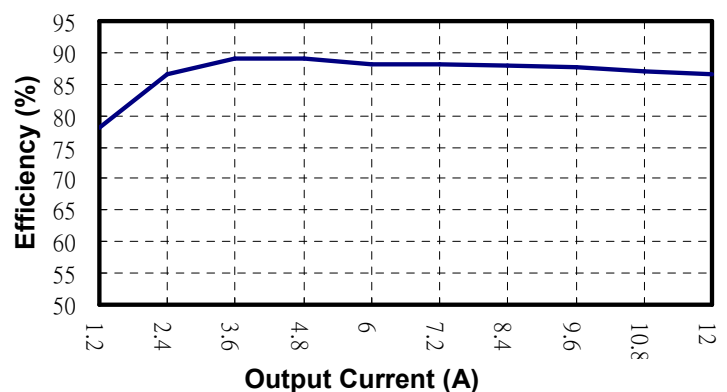
BXC60W Series
Power Derating Curve with Heatsink⁽⁵⁾

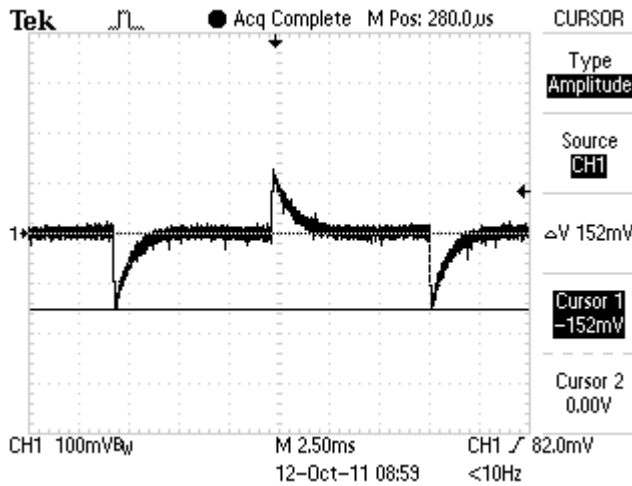
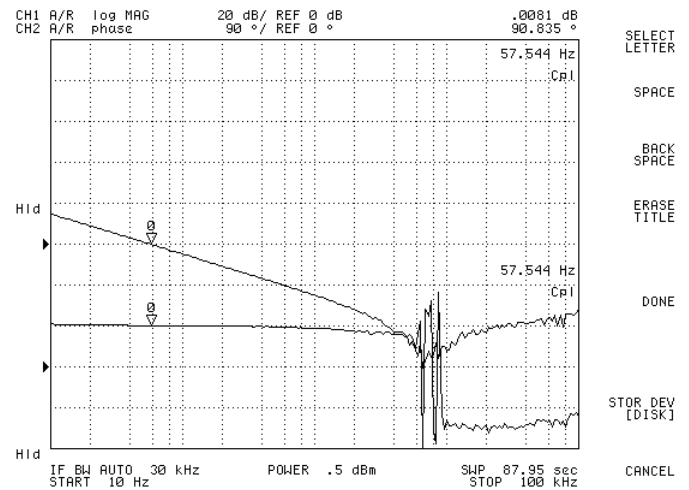


BXC60-48S1W
Input voltage vs. Efficiency

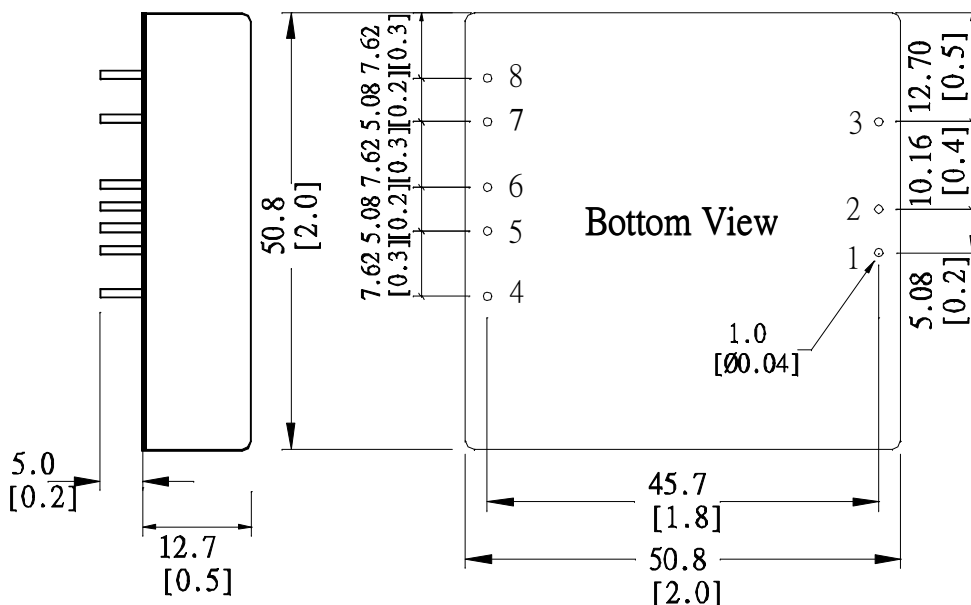


BXC60-48S1W
Output Current vs. Efficiency



Isolated DC-DC Converters BXC60W Series -- 60Watt**PRELIMINARY****BXC60-48S1W****Transient Response at 50%~100% Max. Load****BXC60-48S1W****Loop Gain & Phase at Vi=48V, 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 BXC60-48S1W.

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	

Specifications subject to change without notice.

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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.

