

## Features

- Wide 4 : 1 Input Voltage Range(9~36V,18~75V)
- Remote On/Off
- High Efficiency up to 86%
- Input / Output Isolation Voltage: 1.5K Vdc
- Extended Operating Temperature Range: -40°C to +85°C
- Output Short Circuit Protection:  
Hiccup, continuous & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- 24pin DIP Package with Industry-Standard Footprint
- Customer Design Available



## Description

The BOB8W Series are isolated 8W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 24 pin DIP package with industry-standard footprint. Further features include wide 4 : 1 input voltage range, remote on/off control, short-circuit protection and over voltage 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. <sup>(1)</sup> (%)	Capacitive Load, max. <sup>(2)</sup> (uF)
			Min. Load	Full. Load	No Load	Full Load		
BOB8-24S0W	9~36V Nominal:24Vdc	3.3	0	2000	30	343	84	20200
BOB8-24S1W		5	0	1500	45	386	85	14400
BOB8-24S2W		12	0	665	15	410	85	2300
BOB8-24S3W		15	0	535	16	413	85	1530
BOB8-24D1W		±5	0	±800	17	422	83	6700
BOB8-24D2W		±12	0	±335	20	418	85	1000
BOB8-24D3W		±15	0	±265	20	409	85	760
BOB8-48S0W		18~75V Nominal:48Vdc	3.3	0	2000	13	172	84
BOB8-48S1W	5		0	1500	21	190	86	13000
BOB8-48S2W	12		0	665	6	205	85	2000
BOB8-48S3W	15		0	535	6	206	85	1330
BOB8-48D1W	±5		0	±800	5	211	83	6900
BOB8-48D2W	±12		0	±335	6	207	85	1100
BOB8-48D3W	±15		0	±265	7	204	85	760

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 <sub>p-p</sub> typ.
Start up time	Nominal Vin and constant resistive load	75ms typ.
Remote ON/OFF	Converter: ON	Open or $3.5V < V_r < 12V$
	Converter: OFF	Short <sup>(3)</sup> 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	< 6 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		5% to 95% RH
Temperature coefficient		±0.02% / °C max.
Output Specifications		
Output power		8 Watts max.
Voltage accuracy	Full load and nominal Vin	±1%
Minimum load		See table
Line regulation	LL to HL at full load	±0.5%
	25% load to full load	Single ±1%
Load Regulation	Balanced load	Dual ±1%
	Unbalanced load 25% to 100% full load	±5%
Ripple and Noise	20MHz bandwidth	50mV <sub>p-p</sub> max.
	3.3V <sub>out</sub> models	3.9V
Over voltage protection (Zener Diode Clamp)	5V <sub>out</sub> models	6.2V
	12V <sub>out</sub> models	15V
	15V <sub>out</sub> models	18V
Capacitive load		See table
Over load protection	% of full load at nominal input	150% typ.
Short circuit protection		Hiccup, continuous (Auto Recovery)
Transient response settling time	50% load step change	450μs typ.
Transient response over shoot	di/dt=0.8A/μs	≤ ±5% of V <sub>o</sub>

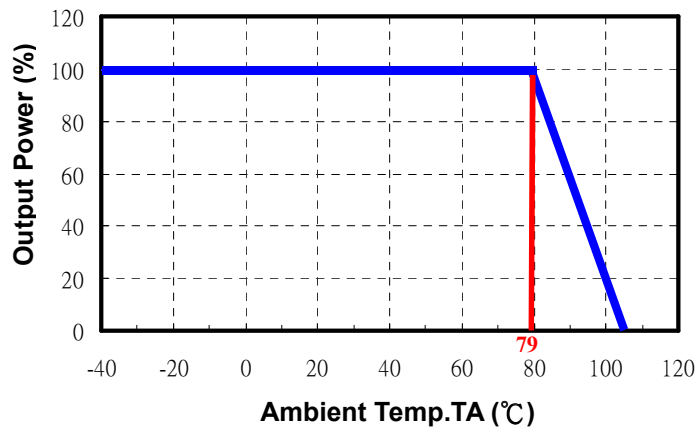
### General Specifications

Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10 <sup>9</sup> Ohms min.
Isolation capacitance		260pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		2.11 × 10 <sup>6</sup> Hrs

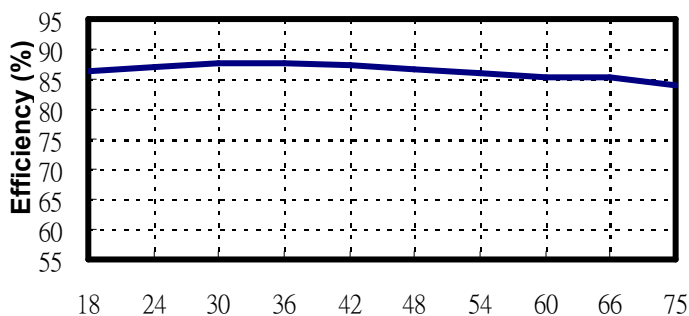
### Physical Specifications

Case material	Nickel-coated copper
Base material	Non-conductive black plastic
Potting material	Silicon rubber (UL94V-0)
Dimensions	1.25 × 0.80 × 0.40 Inch (31.75 × 20.32 × 10.16 mm)
Weight	18g (0.62oz) typ.

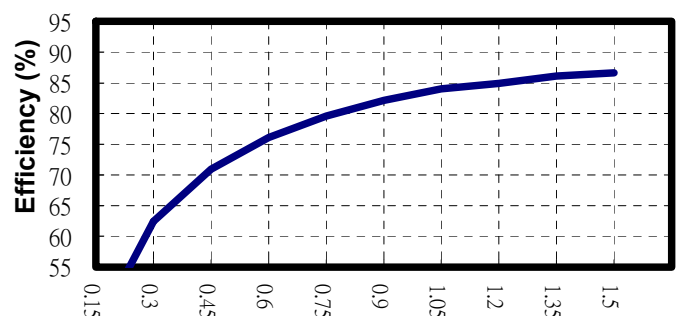
**BOB8W Series  
Power Derating Curve<sup>(4)</sup>**



**BOB8-48S1W  
Input voltage vs. Efficiency**



**BOB8-48S1W  
Output Current vs. Efficiency**

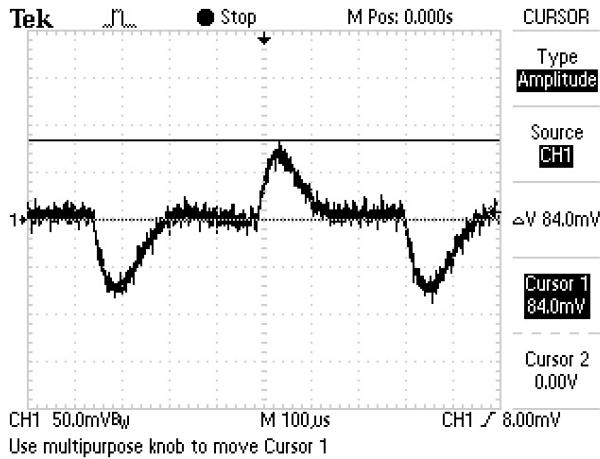


Input voltage (V)

Output Current (A)

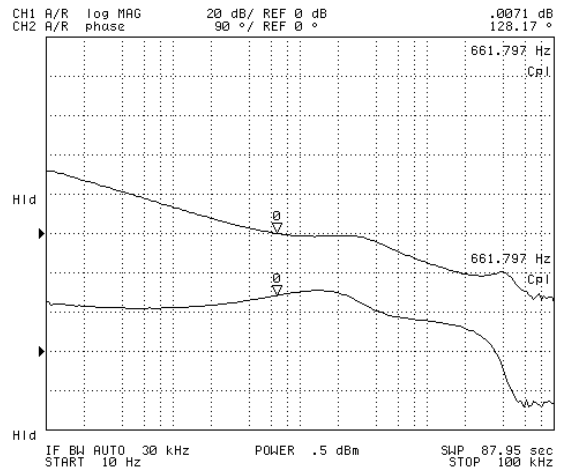
### BOB8-48S1W

#### Transient Response at 50%~100% Max Load



### BOB8-48S1W

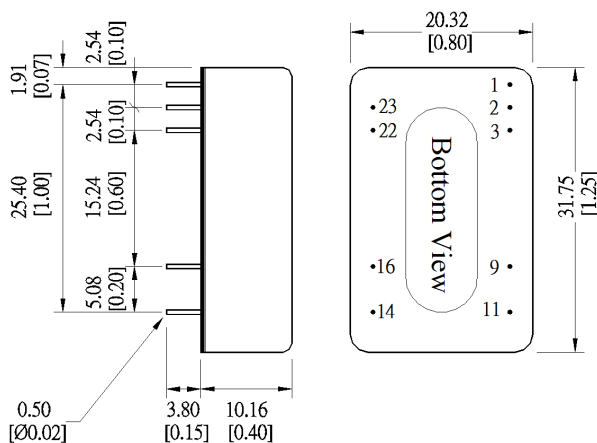
#### Loop Gain & Phase at Vi=48V, Full Load



### Note

1. Typical value, tested at nominal input and full load.
2. For each output.
3. Short to -Vin (Pin 2,3).
4. Based on BOB8-48S1W.

### Mechanical Dimensions



Unit: mm [inch]  
Tolerance: ±0.5 [0.02]

Pin Assignment		
Pin	Single	Dual
1	Remote On/Off	
2	-Vin	-Vin
3	-Vin	-Vin
9	No function	Common
11	No function	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin