

Features

- Wide 2 : 1 Input Voltage Range(9~18V,18~36V,36~75V)
- Remote On/Off
- Input / Output Isolation Voltage: 1.5K Vdc
- Extended Operating Temperature Range: -40°C to +85°C
- Output Short Circuit Protection:
Continuous & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Meet EN55022, Class A (Radiation)
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- 24pin DIP Package with Industry-Standard Footprint
- Customer Design Available



Description

The BOB8 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 2 : 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. ⁽²⁾ (%)	Capacitive Load, max. ⁽³⁾ (uF)
			Min. Load ⁽¹⁾	Full. Load	No Load	Full Load		
BOB8-12S0	9~18V Nominal:12Vdc	3.3	82	2000	6.8	733	79	6800
BOB8-12S1		5	62	1500	3.4	791	82	3300
BOB8-12S2		12	0	665	24	812	87	650
BOB8-12S3		15	0	535	24	832	85	400
BOB8-12D1		±5	0	±800	27	865	83	1650
BOB8-12D2		±12	0	±335	31	812	86	160
BOB8-12D3		±15	0	±265	28	824	86	270
BOB8-24S0	18~36V Nominal:24Vdc	3.3	88	2000	3.6	366	79	6800
BOB8-24S1		5	20	1500	9.3	405	83	3300
BOB8-24S2		12	0	665	14	432	85	440
BOB8-24S3		15	0	535	15	416	85	280
BOB8-24D1		±5	0	±800	14	427	83	1650
BOB8-24D2		±12	0	±335	17	411	86	170
BOB8-24D3		±15	0	±265	17	407	87	180
BOB8-48S0	36~75V Nominal:48Vdc	3.3	72	2000	2	183	80	6800
BOB8-48S1		5	0	1500	5	200	83	3300
BOB8-48S2		12	0	665	7	205	86	400
BOB8-48S3		15	0	535	7	203	86	200
BOB8-48D1		±5	0	±800	6	213	83	1750
BOB8-48D2		±12	0	±335	7	205	86	120
BOB8-48D3		±15	0	±265	8	203	87	250

Input Specifications		
Input Voltage	12V nominal input	9-18Vdc
	24V nominal input	18-36Vdc
	48V nominal input	36-75Vdc
Input filter		Pi Type
Input surge voltage (100ms max.)	12V input	25Vdc
	24V input	50Vdc
	48V input	100Vdc
Input reflected ripple current	Nominal Vin and full load	30mA _{p-p} typ.
Start up time	Nominal Vin and constant resistive load	600ms typ.
Remote ON/OFF	Converter: ON	Open or 3.5V < Vr < 12V
	Converter: OFF	Short ⁽⁴⁾ or 0V < Vr < 1.2V
Sourcing current of remote control pin	Nominal Vin	<0.2 mA
Idle input current (at Remote OFF state)	Nominal Vin	<2.5 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.	
EMC Characteristics		
EMI	EN55022 (radiation)	Meet class A
Output Specifications		
Output power	8 Watts max.	
Voltage accuracy	Full load and nominal Vin	±2%
Minimum load	See table	
Line regulation	LL to HL at full load	±0.2%
Load Regulation	25% load to full load	Single ±1%
	Balanced load	Dual ±1%
	Unbalanced load 25% to 100% full load	±5%
Ripple and Noise	20MHz bandwidth	60mV _{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	150% typ.
Short circuit protection	Continuous, automatic recovery	
Transient response settling time	50% load step change	200μs typ.

Transient response over shoot	$di/dt=0.8A/\mu s$	$\leq \pm 5\%$ of V_o
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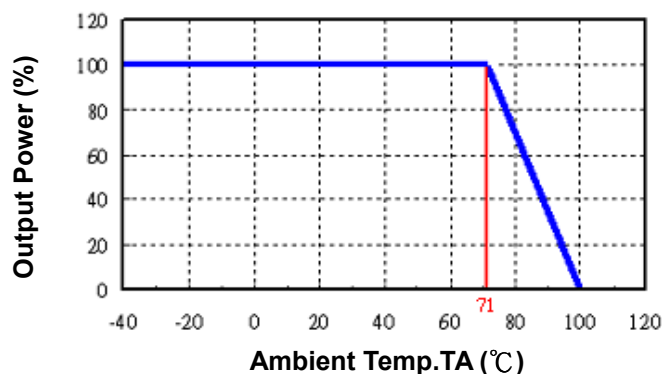
General Specifications

Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10^9 Ohms min.
Isolation capacitance		300pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		3.76×10^6 Hrs

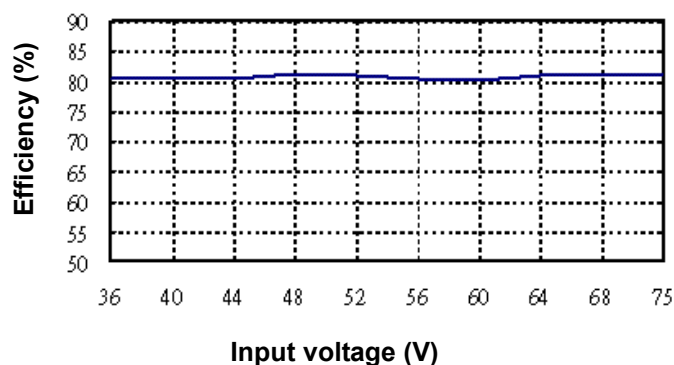
Physical Specifications

Case material	Nickel-coated copper
Base material	Non-conductive black plastic
Potting material	Silicon rubber (UL94V-0)
Dimensions	$1.25 \times 0.80 \times 0.40$ Inch ($31.75 \times 20.32 \times 10.16$ mm)
Weight	17.2g (0.59oz) typ.

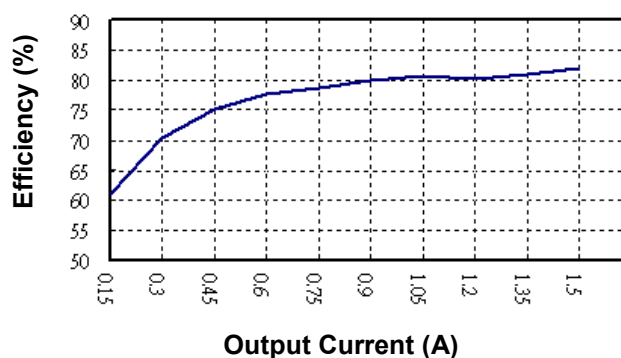
BOB8 Series
Power Derating Curve(5)



BOB8-48S1
Input voltage vs. Efficiency



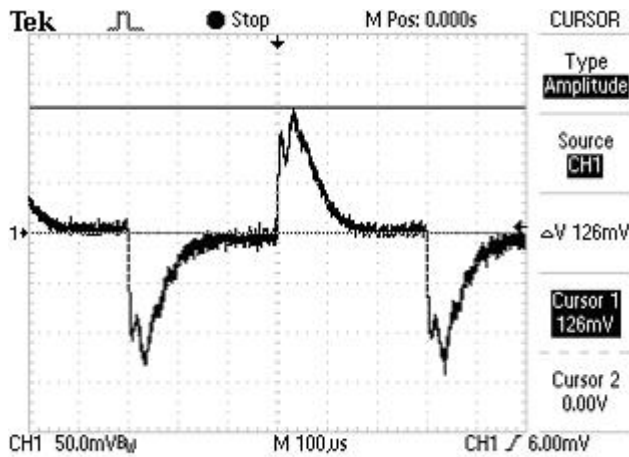
BOB8-48S1
Output Current vs. Efficiency





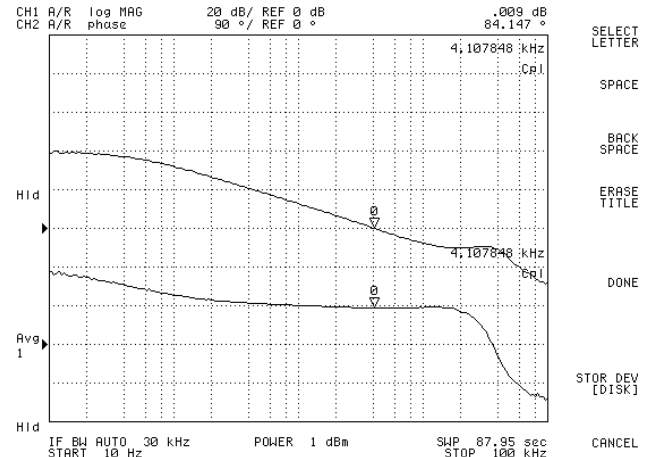
BOB8-48S1

Transient Response at 50%~100% Max Load



BOB8-48S1

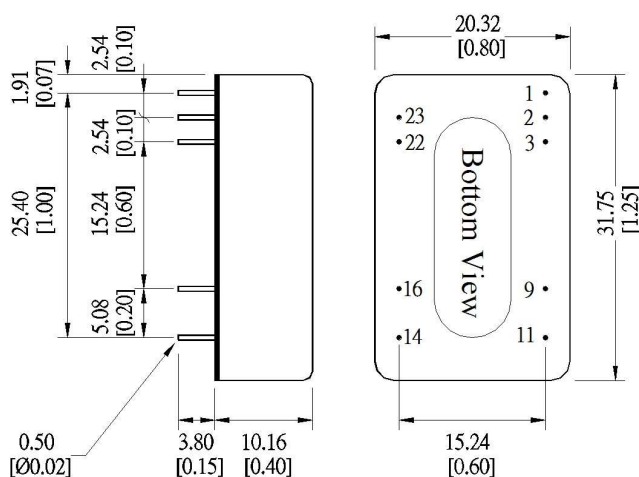
Loop Gain & Phase at Vi=48V, Full Load



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 2,3).
5. Based on BOB8-48S1.

Mechanical Dimensions



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

Pin Assignment

Pin	Single	Dual
1	Remote On/Off	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