



Features

- Wide 4 : 1 Input Voltage Range(9~36V,18~75V)
- Remote On/Off
- 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
- Over Temperature Protection
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- Industry Standard Pinout
- Adjustable Output Voltage
- Customer Design Available



Description

The BVA30W Series are isolated 30W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 50.8×40.6×10.2mm 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		
BVA30-24S8W	9~36V Nominal:24Vdc	1.8	0	8000	88	800	79	65800
BVA30-24S9W		2.5	0	8000	74	1029	84	56000
BVA30-24S0W		3.3	0	6000	96	1031	84	42000
BVA30-24S1W		5	0	6000	116	1506	87	30000
BVA30-24S2W		12	33	2500	51	1506	87	4700
BVA30-24S3W		15	28	2000	55	1506	87	2800
BVA30-24D2W		±12	0	±1250	72	1506	87	2000
BVA30-24D3W		±15	12	±1000	61	1506	87	1600
BVA30-48S8W	18~75V Nominal:48Vdc	1.8	0	8000	40	400	79	65800
BVA30-48S9W		2.5	0	8000	32	514	85	56000
BVA30-48S0W		3.3	0	6000	43	503	86	42000
BVA30-48S1W		5	0	6000	56	735	89	30000
BVA30-48S2W		12	10	2500	77	735	89	4700
BVA30-48S3W		15	6	2000	72	735	89	2800
BVA30-48D2W		±12	0	±1250	80	735	89	2000
BVA30-48D3W		±15	0	±1000	76	744	88	1600


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	250mA _{p-p} typ.
Start up time	Nominal Vin and constant resistive load	78ms 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	< 15 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		30 Watts max.
Voltage accuracy	Full load and nominal Vin	±1%
Minimum load		See table
Line regulation	LL to HL at full load	±0.5% (±1% for 1.8 / 2.5V _{out})
Load Regulation	25% load to full load	Single ±1%
	Balanced load	Dual ±0.5%
	Unbalanced load 25% to 100% full load	±3%
Ripple and Noise	20MHz Bandwidth	85mV _{p-p} max.
	1.8V _{out} Models	3.0V
	2.5V _{out} Models	3.6V
	3.3V _{out} models	3.9V
	5V _{out} models	6.2V
	12V _{out} models	15V
Over voltage protection (Zener Diode Clamp)	15V _{out} models	18V
Capacitive load		See table
Over load protection	% of full load at nominal input	150% typ.
Thermal shutdown		115°C typ.
Short circuit protection		Hiccup, continuous(Auto Recovery)
Transient response settling time	50% load step change	300μs typ.
		(2.4ms for 1.8 / 2.5 / 3.3V _{out})



Transient response over shoot	$di/dt=0.8A/\mu s$	$\leq \pm 5\%$ of V_o ($\leq \pm 8\%$ for 1.8/2.5 V_{out})
-------------------------------	--------------------	---

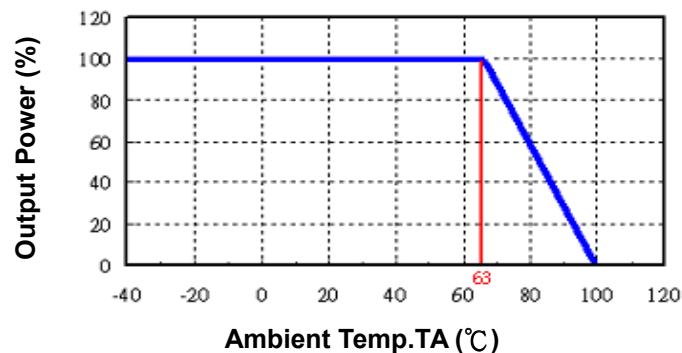
General Specifications

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		1.19×10^6 Hrs

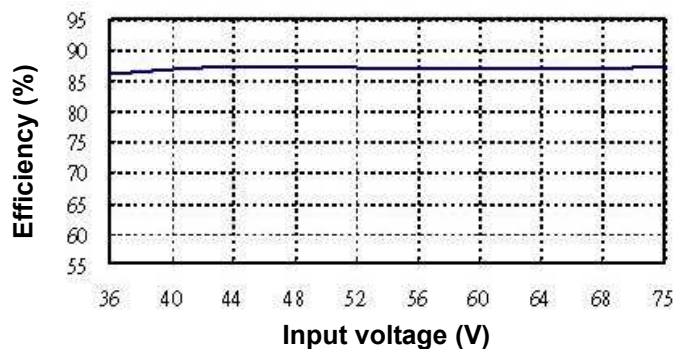
Physical Specifications

Case material	Nickel-coated copper
Base material	Non-conductive black plastic
Potting material	Silicon rubber (UL94 V-0)
Dimensions	2.00 × 1.60 × 0.40 Inch (50.8 × 40.6 × 10.2 mm)
Weight	48g (1.69oz) typ.

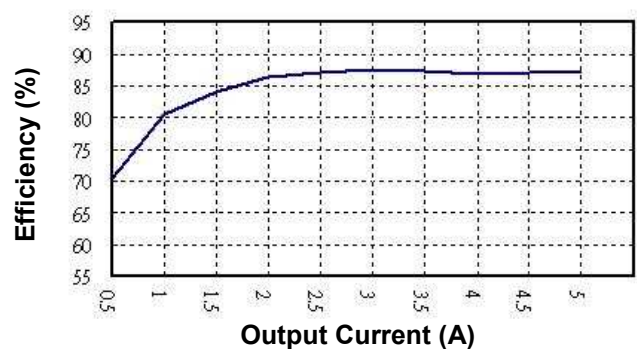
BVA30W Series
Power Derating Curve⁽⁵⁾



BVA30-48S1W
Input voltage vs. Efficiency

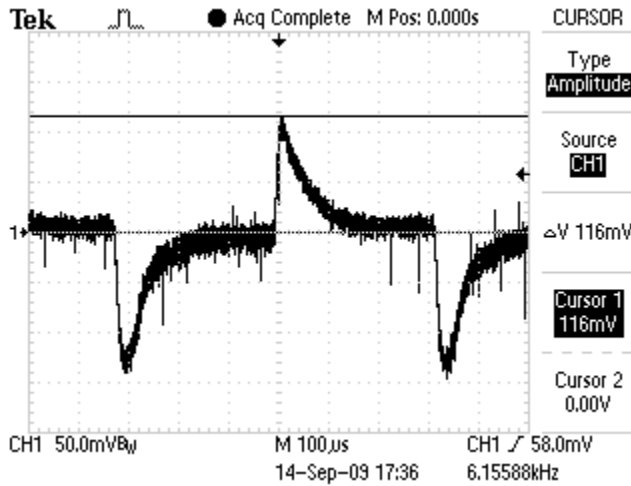


BVA30-48S1W
Output Current vs. Efficiency



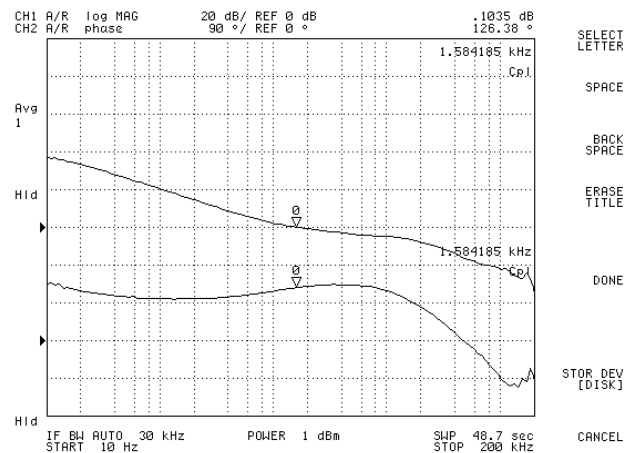
BVA30-48S1W

Transient Response at 50%~100% Max Load



BVA30-48S1W

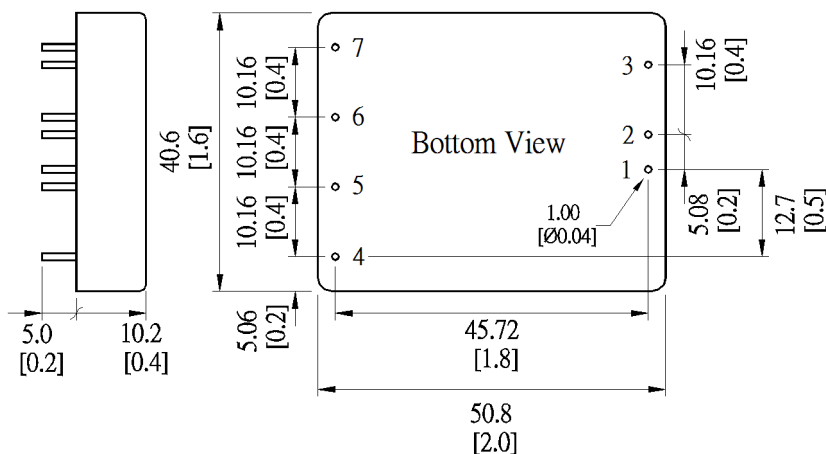
Loop Gain & Phase at $V_i=48V$, Full Load



Note

1. 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 BVA30-48S1W.

Mechanical Dimensions



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

Pin Assignment		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	No pin	+Vout
5	+Vout	Common
6	-Vout	-Vout
7	Trim	Trim

Specifications subject to change without notice.