



Features

- Wide 2 : 1 Input Voltage Range(9~18V,18~36V,36~75V)
- High Efficiency up to 92%
- 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 BVA25 Series are isolated 25W 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 2 : 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		
BVA25-12S0	9~18V Nominal:12Vdc	3.3	16	5500	49	1939	82	39000
BVA25-12S1		5	0	5000	58	2604	84	22000
BVA25-12S2		12	10	2500	23	2976	88	5600
BVA25-12S3		15	15	2000	24	2976	88	3900
BVA25-12D2		±12	2	±1250	36	2976	88	2800
BVA25-12D3		±15	25	±1000	39	2941	89	1200
BVA25-24S0	18~36V Nominal:24Vdc	3.3	0	5500	52	945	84	39000
BVA25-24S1		5	0	5000	61	1255	87	22000
BVA25-24S2		12	14	2500	15	1437	91	5600
BVA25-24S3		15	5	2000	64	1437	91	3900
BVA25-24D2		±12	0	±1250	72	1437	91	2800
BVA25-24D3		±15	0	±1000	68	1437	91	1200
BVA25-48S0	36~75V Nominal:48Vdc	3.3	0	5500	15	473	84	39000
BVA25-48S1		5	0	5000	23	628	87	22000
BVA25-48S2		12	0	2500	18	718	91	5600
BVA25-48S3		15	0	2000	19	718	91	3900
BVA25-48D2		±12	0	±1250	20	718	91	2800
BVA25-48D3		±15	0	±1000	16	710	92	1200



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	68mA _{p-p} typ.
Start up time	Nominal Vin and constant resistive load	80ms 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	< 12 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.	

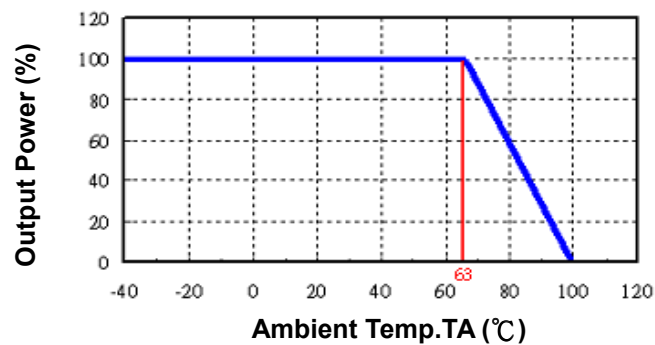
Output Specifications

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	±1%
Load Regulation	25% load to full load	Single ±1%
	Balanced load	Dual ±1%
	Unbalanced load 25% to 100% full load	±3%
Ripple and Noise	20MHz bandwidth	85mV _{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.
Thermal shutdown	115°C typ.	
Short circuit protection	Hiccup, continuous(Auto Recovery)	

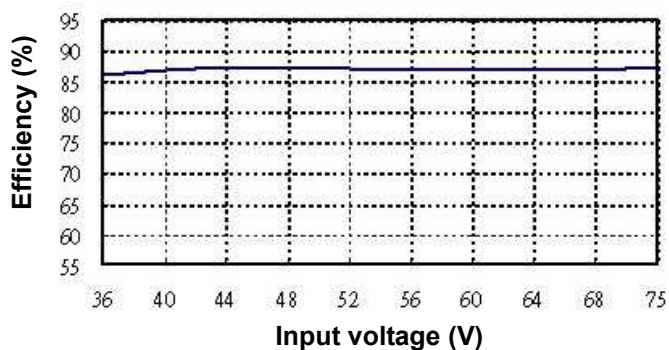


Transient response settling time	50% load step change	360 μ s typ. (2.6ms for 3.3Vout)
Transient response over shoot	di/dt=0.8A/ μ s	$\leq \pm 5\%$ of Vo
General Specifications		
Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10 ⁹ Ohms min.
Isolation capacitance		1200pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		1.28 $\times$ 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 $\times$ 1.60 $\times$ 0.40 Inch (50.8 $\times$ 40.6 $\times$ 10.2 mm)
Weight		48g (1.69oz) typ.

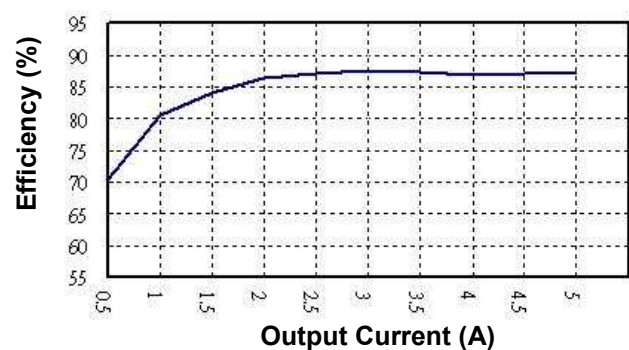
BVA25 Series
Power Derating Curve⁽⁵⁾

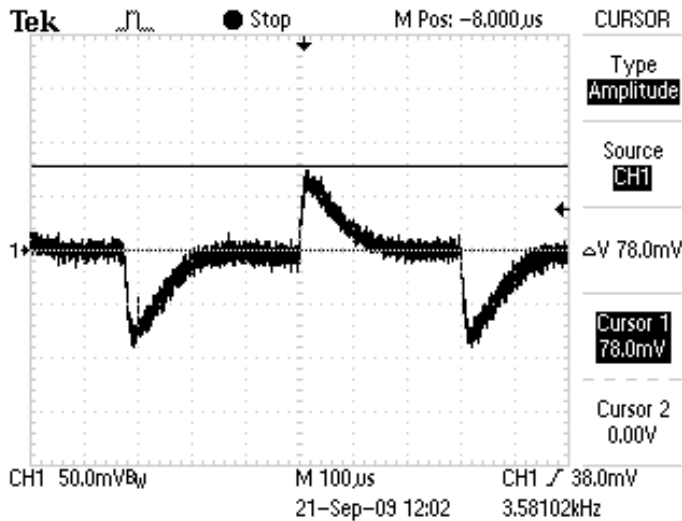
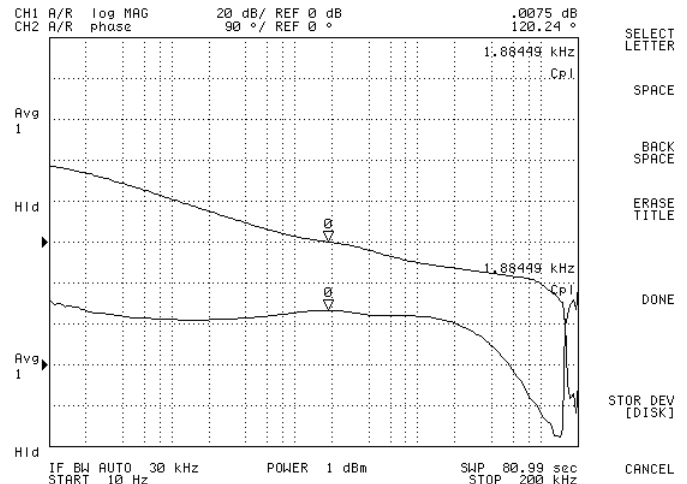


BVA25-48S1
Input voltage vs. Efficiency

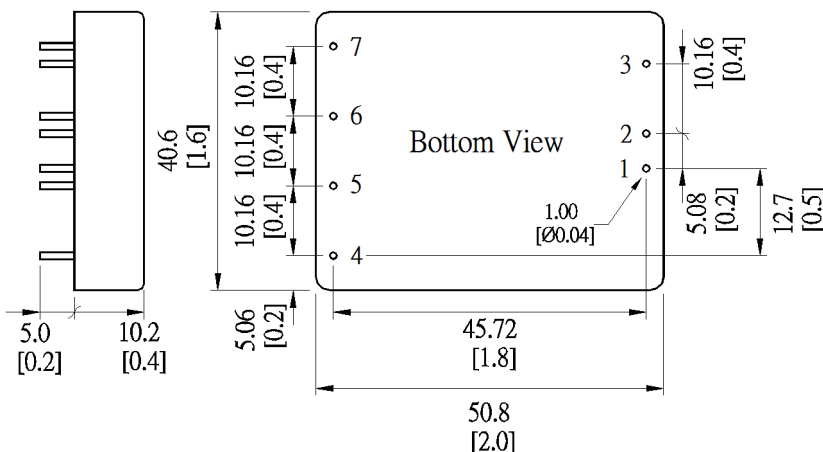


BVA25-48S1
Output Current vs. Efficiency




BVA25-48S1
Transient Response at 50%~100% Max Load

BVA25-48S1
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).
5. Based on BVA25-48S1.

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