



Isolated DC-DC Converters BRA15W Series -- 15 Watt

Features

- Wide 4 : 1 Input Voltage Range(9~36V,18~75V)
- High Efficiency up to 88%
- 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
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- 6 pin DIP Package with Industry-Standard Footprint
- Standard 1"X1" Package
- Customer Design Available



Description

The BRA15W Series are isolated 15W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C (with derating) in a 6 pin DIP package with industry-standard footprint. Further features include wide 4 : 1 input voltage range, remote on/off control, trimmable output, 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		
BRA15-24S0W	9~36V Nominal:24VDC	3.3	0	4000	21	719	81	25760
BRA15-24S1W		5.1	44	3000	22	819	82	14320
BRA15-24S2W		12	44	1250	24	760	86	3168
BRA15-24S3W		15	24	1000	24	755	87	2000
BRA15-24D1W		±5	0	±1500	27	794	83	8800
BRA15-24D2W		±12	14	±625	24	752	87	1600
BRA15-24D3W		±15	0	±500	29	757	87	1040
BRA15-48S0W	18~75V Nominal:48VDC	3.3	0	4000	6.9	352	82	25760
BRA15-48S1W		5.1	49	3000	9.3	399	84	14320
BRA15-48S2W		12	42	1250	7.3	369	89	3168
BRA15-48S3W		15	24	1000	7.5	372	88	2000
BRA15-48D1W		±5	0	±1500	8.5	381	86	8800
BRA15-48D2W		±12	9	±625	9.2	373	88	1600
BRA15-48D3W		±15	0	±500	10	373	88	1040


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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 nominal input		50Vdc
	48V nominal input		100Vdc
Input reflected ripple current	Nominal Vin and full load		50mA _{p-p} max.
Start up time	Nominal Vin and constant resistive load		76ms typ.
Remote ON/OFF	Converter: ON		Open or 3.5V < Vr < 12V
	Converter: OFF		Short ⁽⁴⁾ or 0V < Vr < 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			+105°C max.
Storage temperature range			-55°C to +125°C
Relative humidity			95% RH max.
Temperature coefficient			±0.02% / °C max.
Output Specifications			
Output power			15 Watts max.
Voltage accuracy	Full load and nominal Vin		±1%
Minimum load			See table
Line regulation	LL to HL at full load		±1.0%
	25% load to full load	Single	±1.0%
Load Regulation	Balanced load	Dual	±0.5%
	Unbalanced load 25% to 100% full load		±5%
Ripple and Noise	20MHz bandwidth		80mV _{p-p} max.
	3.3V _{out} models		3.9V
Over voltage protection (Zener Diode Clamp)	5.1V _{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.
Short circuit protection			Hiccup, continuous (Auto Recovery)
Transient response settling time	50% load step change		250µs max.
			(1.4ms for 3.3V _{out})
Transient response over shoot	di/dt=0.8A/µs		≤ ±5% of Vo
			(≤ ±6% for 3.3V _{out})



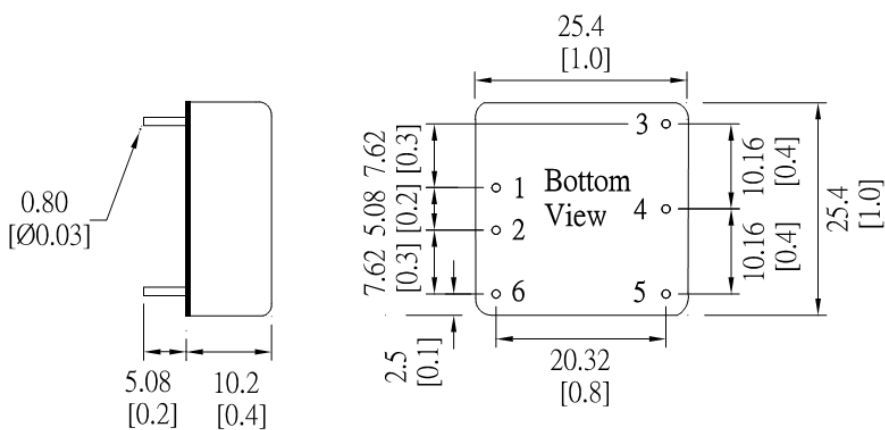
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General Specifications		
Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10 ⁹ Ohms min.
Isolation capacitance		450pF typ.
Switching frequency		330kHz typ.
Reliability, calculated MTBF		1.35 × 10 ⁶ Hrs
Physical Specifications		
Case material		Nickel-coated copper
Base material		Non-conductive black plastic
Potting material		Silicon rubber (UL94V-0)
Dimensions		1.0 × 1.0 × 0.4 Inch (25.4 × 25.4 × 10.2 mm)
Weight		15.0g (0.53oz) typ.

Note

1. Lo 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).

Mechanical Dimensions



Pin Assignment		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	Common
5	-Vout	-Vout
6	Remote On/Off (optional)	

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

Specifications subject to change without noticed.