30 WATT

SINGLE & DUAL OUTPUT

1" x 2" x 0.40"Package

Isolated, Wide Input (2:1)

DC/DC Converters

FEATURES

- 30 Watts Output Power
- 1.5V, 1.8V, 2.5V, 3.3V, 5, 12, 15, +/-5, +/-12, +/-15Vdc Output
- UL 60950-1, EN-60950, IEC 60950-1
- -40°C to +85°C Operating Temp. Range (with derating)
- Low Profile Package (1.0" x 2.0" x 0.4")
- Input/Output Isolation (1500Vdc min.)
- High Efficiency to 89% @ FL
- Short Circuit & Over-Voltage Protection
- 6-Sided Continuous Metal Shielding
- Epoxy Encapsulated
- RoHS Compliant

LWA30 Series

Specifications

All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

INPUT SPECIFICATIONS

Input voltage range		
12V nominal input		9-18VDC
24V nominal input		18-36VDC
48V nominal input		36-72VDC
Input filter		Pi type
Input surge voltage	(12V input - 25VDC)	(24V input - 50VDC)
	100mS max.	(48V input - 100VDC)
Input reflected ripple current	Nominal Vin and full load	20mV p-p
Start up time.	Nominal Vin and.	Power up. 30mS, typ.
	constant resistive load	Remote ON/OFF 30ms, typ.
Start-up voltage	(12V input - 9VDC)	(24V input - 18VDC) (48V input - 36VDC)
Shutdown Voltage	(12V input - 8VDC)	(24V input - 18VDC) (48V input - 36VDC)
Remote ON/OFF (Note 6)		
(Positive logic)	(Standard)DC-DC ON	Open or 3V<Vr<12V
	DC-DC OFF	Short or OV<Vr<1.2V
(Negative logic)	(Option) DC-DC ON	Short or 0V<Vr<1.2V
	DC-DC OFF	Open or 3V<Vr<12V
Input current of Remote control pin	Nominal Vin	-0.5mA - +0.5mA
Remote off state input current	Nominal Vin	3mA

OUTPUT SPECIFICATIONS

Output power		30 Watts, max.
Voltage accuracy	Full load and nominal Vin	±1%
Voltage adjustability	Single output	±10%
	Minimum load	0%
Line regulation	LL to HL at Full Load	±0.2%
	Single	±0.5%
Load regulation	No Load to Full Load Dual	±1%
Cross regulation	(Dual) Asymmetrical load 25% /100% FL	±5%
Ripple and noise	20MHz bandwidth	1.5-5.1Vo 100mVp-p
	(Measured with a 1µF/50V MLCC)	12-15Vo 150mVp-p
Temperature coefficient		±0.02%/°C, max
Transient response recovery time	25% load step change	250µS
(1.5V Output 2.0V)	(2.5V Output 3.3V)	(3.3 V Output 3.9V)
Over voltage protection	5.0V & 5.1V & ±5V Output	6.2V
Zener diode clamp	12V & ±12V Output	15V
	15V & ±15VOutput	18V
Over load protection	% of FL at nominal input	150% typ.
Short circuit protection		Hiccup, automatic recovery

GENERAL SPECIFICATIONS

Efficiency		See table
	Input to Output	1600VDC, min
Isolation voltage	Input (Output) to Case	1600VDC , min
Case grounding		Connect case to -Vin with decoupling Y Cap
Isolation resistance		10 to the nine ohms, min
Isolation capacitance		1500pF, max.
Switching frequency		430KHz typ.
Design meets safety standard		IEC60950-1, UL60950-1 EN60950-1
Case material		Nickel-coated copper
Base material		FR4 PCB
Potting material		Epoxy (UL94-VO)
Dimensions	2.00x1.00x0.40Inch	(50.8x25.4x10.2mm)
Weight		30.5g(1.07oz)
	BELLCORE-TR-NWT-000332	3.173×10^6 hrs.
MTBF (Note 1)	MIL-HDBK-217F	5.548×10^5 hrs.

ENVIRONMENTAL SPECIFICATIONS

Operating ambient temperature		-40°C to +85°C (with derating)
Over temperature protection		115°C, typ.
Maximum case temperature		+105°C
Storage temperature range		-55°C to + 125°C
Thermal impedance (Note 7)	Nature convection	12°C/Watt
	Nature convection with heat –sink	10°C/Watt
Thermal shock		MIL-STD-810F
Vibration		MIL-STD-810F
Relative humidity		5% to 95% RH

EMC CHARACTERISTICS

EMI (Note 8)	EN55022		Class A
ESD	EN61000-4-2	Air	±8KV
		Contact	±6KV Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient (Note 9)	EN61000-4-4	±2KV	Perf. Criteria A
Surge (Note 9)	EN61000-4-5	±1KV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

European Stocking Distributor
Phone: +41 44 730 33 53
Email: sales@hvps-condatas.com / www.hvps-condatas.com
Rietbachstrasse 7, 8952 Schlieren (ZH), Switzerland

Selection Guide

(Continued)

Model Number	Input Range (VDC)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Full Load (mA)	Output Ripple & Noise (mVp-p)	Input Current No Load (3) (mA)	Input Current Full Load (2) (mA)	Efficiency(4) %	Capacitor(5) Load Max
LWA30-12S1.5	9 – 18	1.5	0	8500	100	70	1416	79	20000µF
LWA30-12S2.5	9 – 18	2.5	0	8000	100	100	2083	84	20000µF
LWA30-12S3.3	9 – 18	3.3	0	8000	100	90	2716	85	20000µF
LWA30-12S5	9 – 18	5.0	0	6000	100	130	3012	87	14400µF
LWA30-12S5.1	9 – 18	5.1	0	6000	100	130	3072	87	14400µF
LWA30-12S12	9 – 18	12	0	2500	150	90	2941	89	3000µF
LWA30-12S15	9 – 18	15	0	2000	150	80	2941	89	2000µF
LWA30-24S1.5	18 – 36	1.5	0	8500	100	50	700	85	20000µF
LWA30-24S2.5	18 – 36	2.5	0	8000	100	50	1028	87	20000µF
LWA30-24S3.3	18 – 36	3.3	0	8000	100	50	1325	88	20000µF
LWA30-24S5	18 – 36	5.0	0	6000	100	75	1453	90	14400µF
LWA30-24S5.1	18 – 36	5.1	0	6000	100	75	1482	90	14400µF
LWA30-24S12	18 – 36	12	0	2500	150	40	1437	91	3000µF
LWA30-24S15	18 – 36	15	0	2000	150	30	1437	91	2000µF
LWA30-48S1.5	36 – 75	1.5	0	8500	100	45	350	80	20000µF
LWA30-48S2.5	36 – 75	2.5	0	8000	100	45	514	85	20000µF
LWA30-48S3.3	36 – 75	3.3	0	8000	100	30	663	87	20000µF
LWA30-48S5	36 – 75	5.0	0	6000	100	45	727	90	14400µF
LWA30-48S5.1	36 – 75	5.1	0	6000	100	45	750	89	14400µF
LWA30-48S12	36 – 75	12	0	2500	150	40	718	91	3000µF
LWA30-48S15	36 – 75	15	0	2000	150	40	718	91	2000µF
LWA30-12-5	9 – 18	±5	0	±3000	100	90	3012	87	±3000µF
LWA30-12-12	9 – 18	±12	0	±1250	150	50	3012	87	±2000µF
LWA30-12-15	9 – 18	±15	0	±1000	150	40	3012	87	±1300µF
LWA30-24-5	18 – 36	±5	0	±3000	100	70	1453	90	±3000µF
LWA30-24-12	18 – 36	±12	0	±1250	150	30	1471	89	±2000µF
LWA30-24-15	18 – 36	±15	0	±1000	150	30	1453	90	±1300µF
LWA30-24-5	36 – 75	±5	0	±3000	100	35	727	90	±3000µF
LWA30-24-12	36 – 75	±12	0	±1250	150	30	744	88	±2000µF
LWA30-24-15	36 – 75	±15	0	±1000	150	20	735	89	±1300ßµF

NOTES:

1. Bellcore TR-NWT-00032, Case: 50% Stress, Temperature at 40°C.
   MIL-STD-217F Notice 2 @ Ta = 25°C, Full load (Ground, Benign, controlled environment).
2. Maximum value at nominal input voltage.
3. Typical value at nominal input voltage and no load.
4. Typical value at nominal input voltage and full load.
5. Test by minimum Vin and constant resistive load.
6. The ON/OFF control pin voltage is referenced to-Input.
7. Heat sink is optional and P/N: 7G-0020A-F
8. The LWA30 series can meet EN55022 Class A with parallel an external capacitor to the input pins.
   Recommend: 12 Vin : 10µF/25V X7R 1812 MLCC. 24 Vin : 4.7µF/50V X7R 1812 MLCC.
   48 Vin : 2.2µ /100V X7R 1812 MLCC.
9. An external input filter capacitor is required if the module has to meet EN61000-4-4. EN61000-4-5.
   The filter capacitor suggested: Nippon chemi-con KY series, 220µ F/100V, ESR48mΩ

Mechanical Specifications

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	–INPUT	–INPUT
3	CTRL	CTRL
4	+OUTPUT	+OUTPUT
5	–OUTPUT	–OUTPUT
6	TRIM	–OUTPUT