POLYTRON DEVICES, Inc.

30 WATT

TRIPLE OUTPUT DC/DC Converters

Ultra Wide Input Voltage (4:1)

FEATURES

- Triple Outut Voltage 3.3/+/-12, 3.3/+/-15, 5/+/-12, 5/+/-15
- UL 60950-1, EN60950-1, IEC 60950-1
- -40° to +85°C Operating Temperature Range (with Derating)
- Low Profile Package (1" X 2.0" X 0.40")
- Input/Output Isolation (1600Vdc Min)
- High Efficiency to 88% @ FL
- Six Sided Continuous Metal Shielding
- RoHS Compliant

LWB30 Series Triple Output

Specifications

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

INPUT SPECIFICATIONS

Input voltage range	24V nominal input	9-36VDC
	48V nominal input	18-75VDC
See Table		
Input filter		Pi type
Input surge voltage	24V input	50VDC
100mS max	48V input	100VDC
Input reflected ripple current	Nominal Vin and full load	20mAp-p
Start up time	Nominal Vin and Power up	30mS, typ.
	constant resistive load Remote ON/OFF	30mS, typ.
Start-up voltage	24V input	9VDC
	48V input	18VDC
Shutdown Voltage	24V input	8VDC
	48V input	16VDC
Remote ON/OFF (Note 6)	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 pi	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	Main ±1%
Minimum load (Note 7)		See Table
Line regulation	LL to HL at Full Load	Main ±1%
		Auxiliary ±.5%
Ripple and noise	20MHz bandwidth	See table
	(Measured with a 0.1µF/50V MLCC)	
Temperature coefficient		±0.02%/°C, max
Transient response recovery time	25% load step change	250µS
	3V. Output	3.9V
Over voltage protection	5V. Output	6.2V
Zener diode clamp	12V. Output	15V
	15V. Output	18V
Over load protection	% of FL at nominal input	150% typ
Short circuit protection		Hiccup, automatic recovery

GENERAL SPECIFICATIONS

Efficiency		See table
	Input to Outpu	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		400KHz. 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	2.00 x 1.00 x 0.40 Inch	(50.8x25.4x10.2mm)
Weight		30.5g (1.07oz)
	BELLCORE-TR-NWT-000332	2.904×10^6 hrs.
MTBF (Note 1)	MIL-HDBK-217F	3.184×10^5 hrs.

ENVIRONMENTAL SPECIFICATIONS

Operating ambient temperature	-40°C to +85°C	(without derating)
Over temperature protection		115°C, typ.
Maximum case temperature		105°C
Storage temperature range		-55°C to + 125°C
Thermal impedance (Note 8)	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 9)	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 10)	EN61000-4-4	±2KV		Perf. Criteria A
Surge (Note 10)	EN61000-4-5	±1KV		Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s		Perf. Criteria A

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Selection Guide *(Continued)*

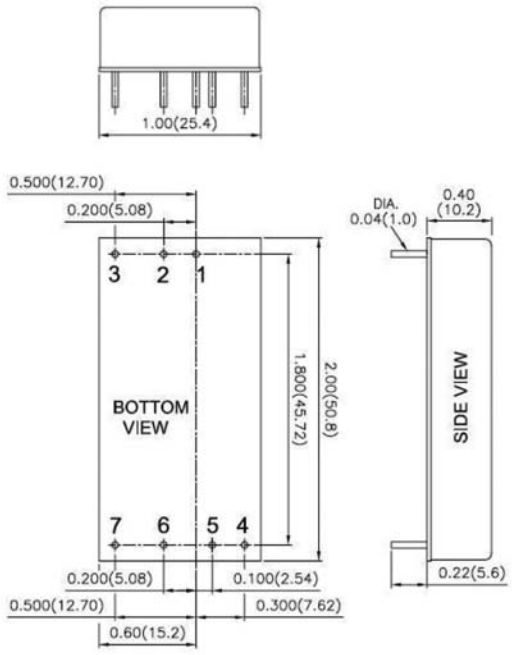
Model Number	Input Voltage Range (VDC)	Output Voltage (VDC)	Output Current Min. Load (mA)	Output Current Max. Load (mA)	Output Ripple & Noise (mVp-p)	Input Current No Load (3) (mA)	Input Current Full Load (2) (mA)	Efficiency (4)%	Capacitor(5) Load Max °(μF)
LWB30-24S33-12	9 – 36	3.3 / ±12	500 / ±42	5000 / ±416	50 / 75	105	1330	87	15000 / ±340
LWB30-24S33-15	9 – 36	3.3 / ±15	500 / ±33	5000 / ±333	50 / 75	105	1330	87	15000 / ±220
LWB30-24S5-12	9 – 36	5 / ±12	400 / ±42	4000 / ±416	50 / 75	105	1488	88	8000 / ±340
LWB30-24S5-15	9 – 36	5 / ±15	400 / ±33	4000 / ±333	50 / 75	105	1488	88	8000 / ±220
LWB30-48S33-12	18 – 75	3.3 / ±12	500 / ±42	5000 / ±416	50 / 75	55	665	87	15000 / ±340
LWB30-48S33-15	18 – 75	3.3 / ±15	500 / ±33	5000 / ±333	50 / 75	55	665	87	15000 / ±220
LWB30-48S5-12	18 – 75	5 / ±12	400 / ±42	4000 / ±416	50 / 75	55	744	88	8000 / ±340
LWB30-48S5-15	18 – 75	5 / ±15	400 / ±33	4000 / ±333	50 / 75	55	744	88	8000 / ±220

NOTES:

1. Bellcore TR-NWT-000332, Case1: 50% Stress, Temperature at 40°C. (Ground, fixed and controlled environment)
MIL-STD-217F Notice 2 @ Ta = 25°C, Full load (Ground, Benign, controlled environment).
2. Maximum value at normal 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. The output requires minimum loading on the output to maintain specified regulation. Operation in no-load condition will not damage these devices, however they may not meet all listed specification.
7. Heat sink is optional and P/N: 7G-0020C-F
8. The LWB30 series can meet EN55022 Class A with parallel an external capacitor to the input pins.
Recommend: 24 Vin : 4.7μF/50V X7R 1812 MLCC
48 Vin : 2.2μF/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 Polytron Devices: 24Vin Nippon chemi-con KY series, 330μ F/50V, ESR55mΩ
48Vin Nippon chemi-con KY series, 220μ F/100V, ESR48mΩ

Mechanical Specifications

PIN CONNECTION	
PIN	**TRIPLE**
1	+INPUT
2	–INPUT
3	CTRL
4	+AUX
5	–AUX
6	COMMON
7	+OUTPUT



1. All dimensions in Inches (mm)
Tolerance: X.XX±0.02 (X.X±0.5)
X.XXX±0.01 (X.XX±0.25)
2. Pin pitch tolerance ±0.01(0.25)
3. Pin dimension tolerance ±0.004 (0.1)

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