

1.5 WATT UNREGULATED DUAL-IN-LINE DC/DC CONVERTER

PWR11XX

FEATURES

- Low Cost
- Industry-Standard Package
- Single and Dual Outputs
- Internal Input and Output Filtering
- 24-Pin DIP Package
- Built-In Standoffs

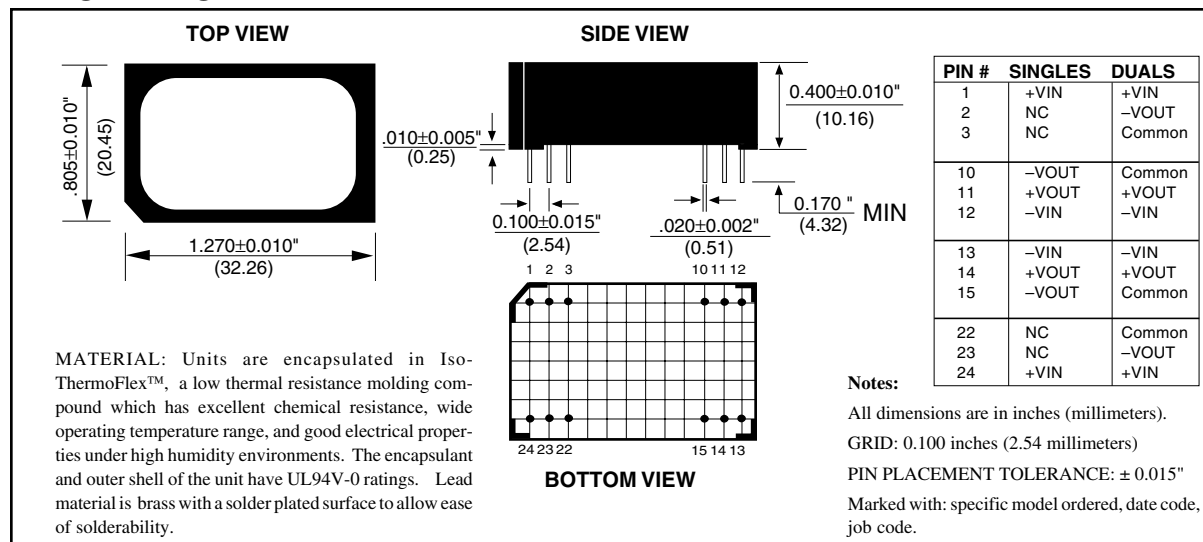
DESCRIPTION

The PWR11XX Series offers a broad line of low-cost, high-performance, unregulated, single and dual output DC/DC converters in a 24-pin DIP package. These miniature converters offer better performance and lower cost in industry-standard packages and pin-outs. The PWR11XX Series is internally filtered. No external parts are necessary.

Surface mounted components and a special encapsulant allow for superior reliability, excellent thermal dissipation, and an extended temperature range of -25°C to $+85^{\circ}\text{C}$ at no extra cost.

The PWR11XX Series is ideal for use on high-density PC boards where isolated, unregulated, power is needed. Stand-offs allow for PC board cleaning, helping preserve isolation. They also allow for visual inspection of solder joints.

MECHANICAL



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ELECTRICAL SPECIFICATIONS

Specifications typical at $T_A = +25^{\circ}\text{C}$, nominal input voltage, and rated output current unless otherwise noted.

MODEL	NOMINAL INPUT VOLTAGE	RATED OUTPUT VOLTAGE	RATED OUTPUT CURRENT	INPUT CURRENT		REFLECTED RIPPLE CURRENT
				NO LOAD	RATED LOAD	
Units	V _{DC}	V _{DC}	mA	mA	mA	mA _{p-p}
PWR1100	5	5	300	30	400	45
PWR1101	5	12	125	30	400	45
PWR1102	5	15	100	30	400	45
PWR1103	5	±5	±150	30	400	45
PWR1104	5	±12	±63	30	400	45
PWR1105	5	±15	±50	30	400	45
PWR1106	12	5	300	30	175	25
PWR1107	12	12	125	30	175	25
PWR1108	12	15	100	30	175	25
PWR1109	12	±5	±150	30	175	25
PWR1110	12	±12	±63	30	175	25
PWR1111	12	±15	±50	30	175	25
PWR1112	15	5	300	30	140	20
PWR1113	15	12	125	30	140	20
PWR1114	15	15	100	30	140	20
PWR1115	15	±5	±150	30	140	20
PWR1116	15	±12	±63	30	140	20
PWR1117	15	±15	±50	30	140	20
PWR1118	24	5	300	30	90	20
PWR1119	24	12	125	30	90	20
PWR1120	24	15	100	30	90	20
PWR1121	24	±5	±150	30	90	20
PWR1122	24	±12	±63	30	90	20
PWR1123	24	±15	±50	30	90	20
PWR1140	5	9	167	30	400	45
PWR1141	12	9	167	30	175	25
PWR1142	15	9	167	30	140	20

COMMON SPECIFICATIONS

Specifications typical at $T_A = +25^{\circ}\text{C}$, nominal input voltage, and rated output current unless otherwise noted.

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT					
Voltage Range		4.5	5	5.5	V _{DC}
		10.8	12	13.2	V _{DC}
		13.5	15	16.5	V _{DC}
		21.6	24	26.4	V _{DC}
ISOLATION					
Rated Voltage		500			V _{DC}
Test Voltage	60 Hz, 10 Seconds	500			V _{pk}
Resistance			10		GΩ
Capacitance			90		pF
Leakage Current	V _{ISO} = 240VAC, 60Hz		10		μArms
OUTPUT					
Rated Power			1.5		W
Voltage Setpoint Accuracy	Rated Load, Nominal V _{in}		±3	±5	%
Temperature Coefficient			±0.02		%/%°C
Ripple and Noise					
(BW = DC to 20MHz)	No External Components		150		mVp-p
	10μF Across Each Output		10		mVrms
	10μF Across Each Output		30		mVp-p
Voltage	No Load, V _{OUT} = +5V			7	V _{DC}
	No Load, V _{OUT} = ±12V			±15	V _{DC}
	No Load, V _{OUT} = ±15V			±18	V _{DC}
Line Regulation			1.2		%/%V _{IN}
Load	No Load To Rated Load		6		%
GENERAL					
Switching Frequency			150		kHz
Package Weight			12		g
MTTF per MIL-HDBK-217 Rev. E*	Circuit Stress Method		800		kHr
Efficiency			75		%
TEMPERATURE					
Specification		-25	+25	+85	°C
Operation		-40		+100	°C
Storage		-40		+110	°C

* For demonstrated MTTF results reference Burr-Brown Reliability Report PWR1205 (Literature Number PA647)

ABSOLUTE MAXIMUM RATINGS

Output Short-Circuit Duration	Momentary
Internal Power Dissipation	750mW
Lead Soldering Temperature (10 seconds max)	+300°C

ORDERING INFORMATION

	PWR	11XX	/H
Device Family			
PWR Indicates DC/DC Converter			
Model Number			
Selected from Table of Electrical Characteristics			
Screening Option			

APPLICATION NOTE

UNBALANCED LOADS

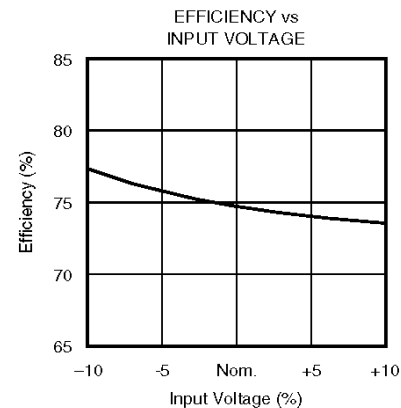
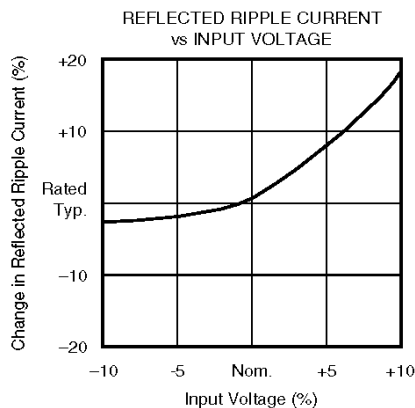
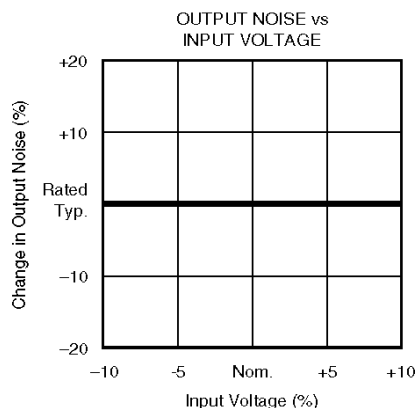
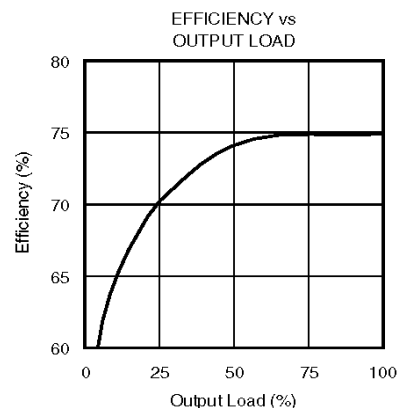
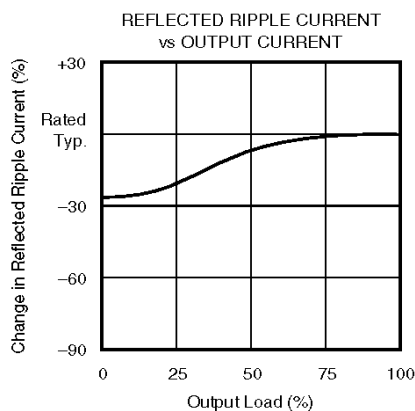
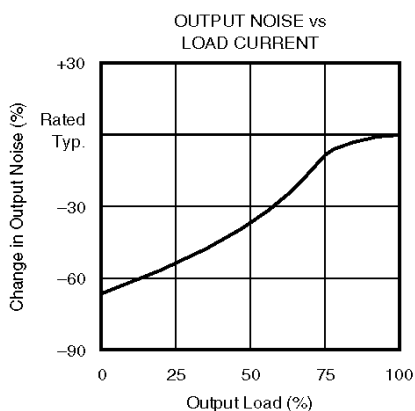
Unbalanced loads may be used on dual output models with either side providing up to its rated current. Output voltages, by design, will track each other in an unbalanced state within $\pm 10\%$ of one another.

OUTPUT NOISE

Output noise can be reduced to 30mVp-p, typically, by adding a 10 μ F tantalum capacitor with an equivalent series resistance (ESR) of less than 150m Ω at 10kHz across each output.

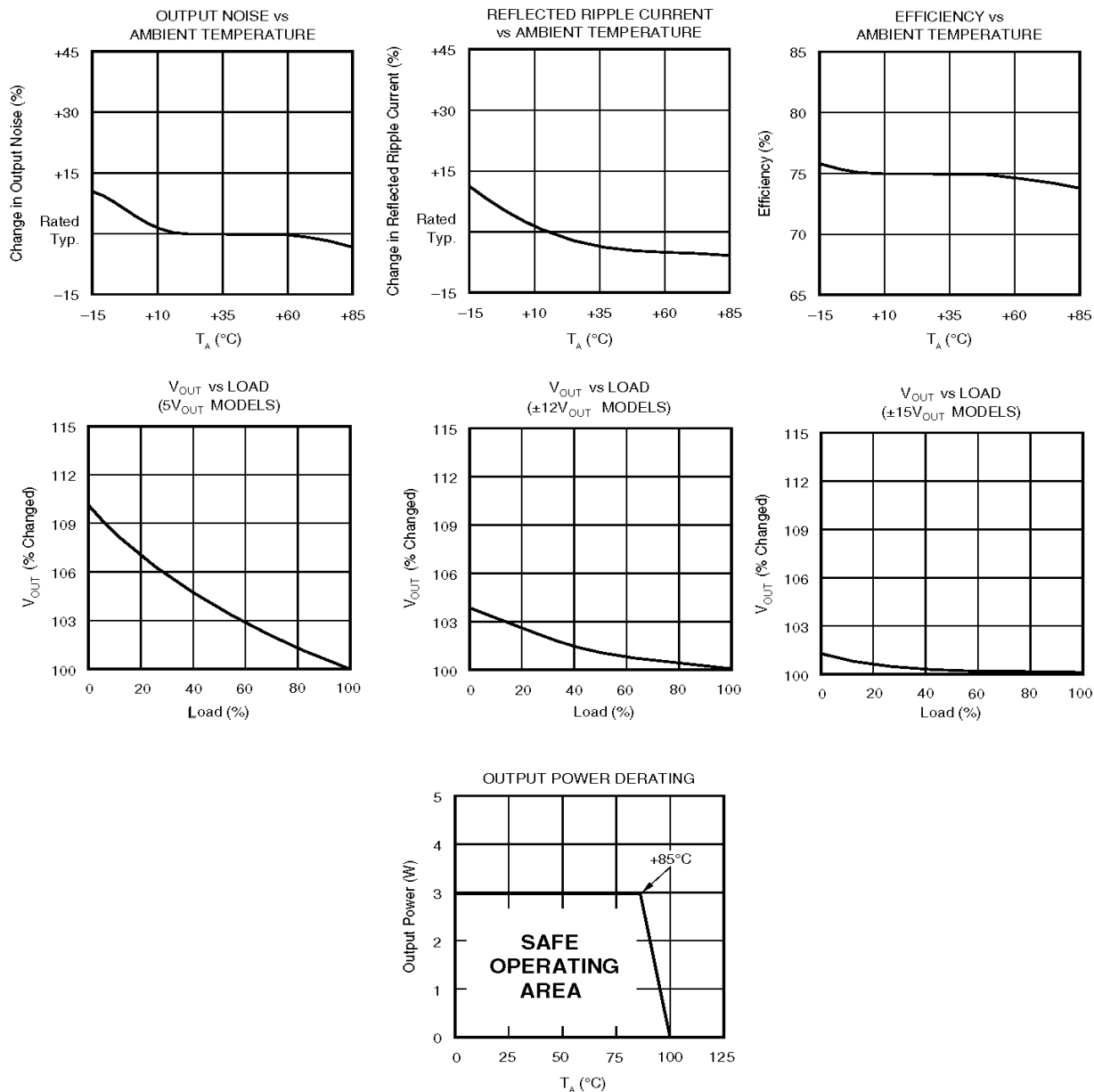
TYPICAL PERFORMANCE CURVES

$T_A = +25^\circ\text{C}$, Rated Input Voltage, Rated Output Current unless otherwise noted.



TYPICAL PERFORMANCE CURVES (CONT)

$T_A = +25^\circ\text{C}$, Rated Input Voltage, Rated Output Current unless otherwise noted.



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