

Corporate: www.cdtechno.com Product: www.cdpoweronline.com

HPR1XX 0.75 Watt Single Output DC/DC Converter



- Low Cost
- Multiple Package Styles
- Internal Input and Output
- Filtering
- Non-Conductive Case
- The HPR1XX Series uses advanced circuit design and packaging technology to deliver superior reliability and performance. A 170kHz push-pull oscillator is used in the input stage. Beat-frequency oscillation problems are reduced when using the HPR1XX Series with high frequency isolation amplifiers.

Reduced parts count and high efficiency add to the reliability of the HPR1XX Series. The high efficiency of the HPR1XX Series means less internal power dissipation, as low as 190mW. With reduced heat dissipation the HPR1XX Series can operate at higher temperatures with no degradation. In addition, the high efficiency of the HPR1XX Series means the series is able to offer greater than 10 W/inch³ of output power density. Operation down

- High Output Power Density: 10 Watts/Inch³
- Extended Temperature Range: -25°C to +85°C
- Efficiency to 79%

to no load will not impact the reliability of the series, although $a \ge 1$ mA minimum load is needed to realize published specifications.

The HPR1XX Series provides the user a low cost converter without sacrificing reliability. The use of surface mounted devices and advanced manufacturing technologies make it possible to offer premium performance <u>and</u> low cost.

SPECIFICATIONS	All specifications are typical	l at $T_{1} = +25^{\circ}C$ nominal int	out voltage unless otherwise specified.

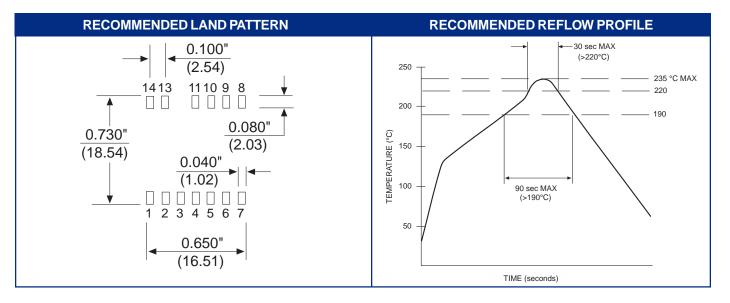
PRODUCT SELECTION CHART								
	NOMINAL INPUT	RATED OUTPUT	RATED OUTPUT			REFLECTED		
MODEL	VOLTAGE	VOLTAGE (VDC)	CURRENT (mA)	NO LOAD (mA)	RATED LOAD (mA)	CURRENT (mAp-p)	EFFICIENCY (%)	
HPR100	5	5	150	20	216	10	69	
HPR101	5	12	62	20	212	5	70	
HPR102	5	15	50	20	212	5	71	
HPR103	5	±5	±75	20	218	5	68	
HPR104	5	±12	±30	20	212	5	68	
HPR105	5	±15	±25	20	200	5	75	
HPR106	12	5	150	10	90	5	69	
HPR107	12	12	62	10	81	5	77	
HPR108	12	15	50	10	81	5	77	
HPR109	12	±5	±75	10	88	5	71	
HPR110	12	±12	±30	10	81	5	74	
HPR111	12	±15	±25	10	81	5	77	
HPR112	15	5	150	8	72	5	69	
HPR113	15	12	62	8	72	5	69	
HPR114	15	15	50	8	72	5	69	
HPR115	15	±5	±75	8	72	5	69	
HPR116	15	±12	±30	8	63	5	76	
HPR117	15	±15	±25	8	63	5	79	
HPR118	24	5	150	8	48	15	65	
HPR119	24	12	62	8	48	15	65	
HPR120	24	15	50	8	45	15	76	
HPR121	24	±5	±75	8	45	15	69	
HPR122	24	±12	±30	8	45	15	67	
HPR123	24	±15	±25	8	45	15	69	

Note: Other input to output voltages may be available. Please contact factory. **Product: www.cdpoweronline.com**

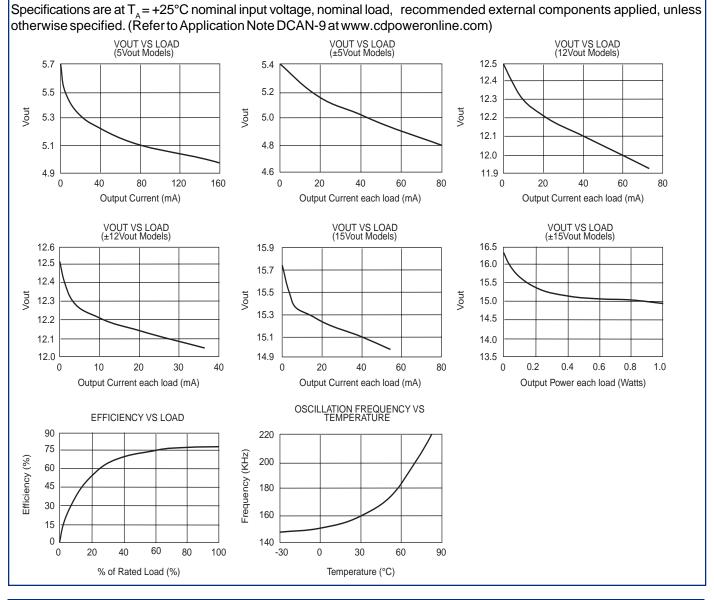
SPECIFICATIONS, ALL MODELS Specifications are at $T_A = +25^{\circ}$ C nominal input voltage unless otherwise specified.

_	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
	INPUT					
F	Voltage Range		4.5	5	5.5	VDC
			10.8	12	13.2	VDC
INPUT			13.5	15	16.5	VDC
Z			21.6	24	26.4	VDC
	Voltage Rise Time See Typical Perf	ormance Curves & Application	Notes: "Capacitive	Loading Effects or	Start-Up of D	C/DC Converters"
ουτρυτ	OUTPUT		·			
	Rated Power			750		mW
	Voltage Setpoint Accuracy	Rated Load, Nominal V			±5	%
	Ripple & Noise	BW = DC to 10MHz		45		mVp-p
		BW =10Hz to 2MHz		30		mVrms
	HPR103	BW = DC to 10MHz		90		mVp-p
б	Voltage (Over Input Voltage Range)	1mA Load, V _{out} = 5V			7	VDC
		1mA Load, V _{OUT} = 12V			15	VDC
		1mA Load, V _{OUT} = 15V			18	VDC
	Temperature Coefficent			.01		%/°C
	REGULATION					
	Line Regulation	High Line to Low Line		1		%/%Vin
	GENERAL					
	ISOLATION					
	Rated Voltage		750			VDC
	Test Voltage	60 Hz, 10 Seconds	750			Vrms (1060pk)
	Resistance			10		GΩ
	Capacitance			25	100	pF
	Leakage Current	V _{ISO} = 240VAC, 60Hz		2	8.5	μArms
A	Switching Frequency			170		kHz
Ш	Frequency Change	Over Line and Load		24		%
GENERAL	Package Weight			2		g
G	MTTF per MIL-HDBK-217, Rev. E*	Circuit Stress Method				
	Ground Benign	T _A =+25°C		7.9		MHr
	Fixed Ground	T _A =+35°C		1.9		MHr
	Naval Sheltered	T _A =+35°C		1.2		MHr
	Airborne Uninhabited Fighter	T _A =+35°C		300		kHr
	TEMPERATURE					
	Specification		-25	+25	+85	°C
	Operation		-40		+100	C
	Storage		-40		+110	°C

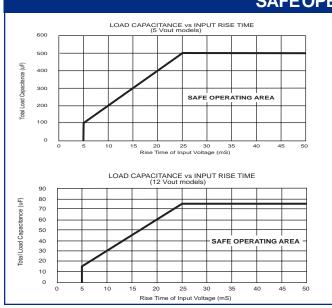
* For demonstrated MTTF results reference: Power Convertibles Reliability Report HPR105.

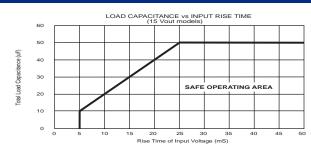


TYPICAL PERFORMANCE CURVES



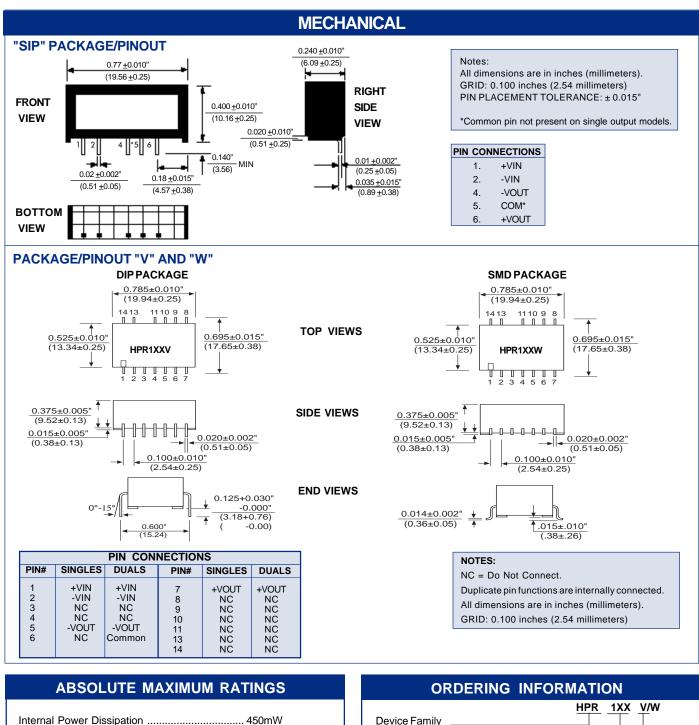
SAFEOPERATINGAREA





NOTES:

- When operated within the SAFE OPERATING AREA as defined by the above curves, the output voltage of HPR1XX devices is guaranteed to be within 95% of its steady-state value within 100 milliseconds after the input voltage has reached 95% of its steadystate value.
- 2.) For dual output models, total load capacitance is the sum of the capacitances on the plus and minus outputs.



* NOTE: Refer to Reflow Profile for SMD Models.



- Package Option
- There is "no" package designator for the SIP package V = DIP Package
- W = SMD Package

C&D Technologies, EMEA/AP Milton Keynes MK14 5BU UK Tel: +44 (0)1908 615232 Fax: +44 (0)1908 617545

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