* LAST TIME BUY: AUGUST 31, 2014. CLICK HERE FOR OBSOLESCENCE NOTICE OF FEBRUARY 2014.

Murata Power Solutions

HPR1XXWC Series

0.75 Watt Single Output DC/DC Converter

OBSOLETE PRODUCT

Last time buy: August 31, 2014.

Click Here For Obsolescence Notice of February 2014.

FEATURES

- Low Cost
- Multiple Package Styles
- Internal Input and Output
- Filtering
- Non-Conductive Case
- High Output Power Density: 10 Watts/Inch3
- Extended Temperature Range: -25°C to +85°C
- Efficiency to 79%
- RoHS Compliant

The ...or reliability and ...cillation problems are reduced when using the HPR1XXWC Series with high frequency isolation amplifiers.

Reduced parts count and high efficiency add to the reliability of the HPR1XXWC Series. The high efficiency of the HPR1XXWC Series means less internal power dissipation, as low as 190mW.

With reduced heat dissipation the HPR1XXWC Series can operate at higher temperatures with no degradation. In addition, the high efficiency of the HPR1XXWC Series means the series is able to offer greater than 10 W/inch3 of output power density. Operation down to no load will not impact the reliability of the series, although a >1mA minimum load is needed to realize published specifications.

The HPR1XXWC 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 and low cost.

All specifications are typical at TA = +25°C nominal input voltage unless otherwise specified.

* LAST TIME BUY FOR HPR100WC AND HPR109WC ONLY: AUGUST 31, 2014. CLICK HERE FOR OBSOLESCENCE NOTICE OF FEBRUARY 2014.

PRODUCT SELECTION CHART

	Model		Nominal Input Voltage	Rated Output Voltage	Rated Output Current	Input Current		Reflected Ripple Current	Efficiency	Recommended Alternatives
						No Load	Rated Load Typ.			
			V_{DC}	V_{DC}	mA	mA		mAp-p	%	
OBSOLETE *	OBSOLETE	HPR100WC	5	5	150	20	216	10	69	NTE0505MC
	OBSOLETE	HPR105WC	5	±15	±25	20	200	5	75	NTA0515MC
OBSOLETE *	OBSOLETE	HPR109WC	12	±5	±75	10	88	5	71	NTA1205MC
	OBSOLETE	HPR101WC	5	12	62	20	212	5	70	NTE0512MC
	OBSOLETE	HPR102WC	5	15	50	20	212	5	71	NTE0515MC
	OBSOLETE	HPR103WC	5	±5	±75	20	218	5	68	NTA0505MC
	OBSOLETE	HPR104WC	5	±12	±30	20	212	5	68	NTA0512MC
	OBSOLETE	HPR106WC	12	5	150	10	90	5	69	NTE1205MC
	OBSOLETE	HPR107WC	12	12	62	10	81	5	77	NTE1212MC
	OBSOLETE	HPR108WC	12	15	50	10	81	5	77	NTE1215MC
	OBSOLETE	HPR110WC	12	±12	±30	10	81	5	74	NTA1212MC
	OBSOLETE	HPR111WC	12	±15	±25	10	81	5	77	NTA1215MC
	OBSOLETE	HPR112WC	15	5	150	8	72	5	69	-
	OBSOLETE	HPR113WC	15	12	62	8	72	5	69	-
	OBSOLETE	HPR114WC	15	15	50	8	72	5	69	-
	OBSOLETE	HPR115WC	15	±5	±75	8	72	5	69	-
	OBSOLETE	HPR116WC	15	±12	±30	8	63	5	76	-
	OBSOLETE	HPR117WC	15	±15	±25	8	63	5	79	-
	OBSOLETE	HPR118WC	24	5	150	8	48	15	65	-
	OBSOLETE	HPR119WC	24	12	62	8	48	15	65	-
	OBSOLETE	HPR120WC	24	15	50	8	45	15	76	-
	OBSOLETE	HPR121WC	24	±5	±75	8	45	15	69	-
	OBSOLETE	HPR122WC	24	±12	±30	8	45	15	67	-
	OBSOLETE	HPR123WC	24	±15	±25	8	45	15	69	-

RoHS COMPLIANT

For full details go to www.murata-ps.com/rohs

*Not Recommended for New Designs

SPECIFICATIONS, ALL MODELS

Specifications are at T_A = +25℃ nominal input voltage unless otherwise specifi ed.

	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT	**INPUT**					
	Voltage Range		4.5	5	5.5	VDC
			10.8	12	13.2	VDC
			13.5	15	16.5	VDC
			21.6	24	26.4	VDC
	Voltage Rise Time See Typical Performance Curves & Application Notes: “Capacitive Loading Effects on Start-Up of DC/DC Converters”					
OUTPUT	**OUTPUT**					
	Rated Power				750	mW
	Voltage Setpoint Accuracy	Rated Load, Nominal V_{IN}			±5	%
	Ripple & Noise	BW = DC to 10MHz		150	200	mVp-p
		BW =10Hz to 2MHz		30	40	mVrms
	Voltage (Over Input Voltage Range)	1mA to Rated Current, V_{OUT} = 5V	4.75		7	VDC
		1mA to Rated Current, V_{OUT} = 12V	11.40		15	VDC
		1mA to Rated Current, V_{OUT} = 15V	14.25		18	VDC
	Temperature Coefficent			.01	.05	%/ ℃
	REGULATION					
	Load Regulation (All other modes)	Rated Load to 1mA Load		3		%
GENERAL	**GENERAL**					
	ISOLATION					
	Rated Voltage		750			VDC
	Test Voltage	60 Hz, 10 Seconds	750			Vrms
	Resistance		10			GΩ
	Capacitance			25	100	pF
	Leakage Current	V_{ISO}= 240VAC, 60Hz		2	8.5	µArms
	Switching Frequency			170		kHz
	Frequency Change	Over Line and Load		24		%
	Package Weight				3	g
	MTTF per MIL-HDBK-217, Rev. F*	Circuit Stress Method				
	Ground Benign	T_A = +25℃	7.9			MHr
	Fixed Ground	T_A = +35℃	1.9			MHr
	Naval Sheltered	T_A = +35℃	1.2			MHr
	Airborne Uninhabited Fighter	T_A = +35℃	300			kHr
	TEMPERATURE					
	Specification		-25	+25	+85	℃
	Operation		-40		+100	℃
	Storage		-40		+110	℃

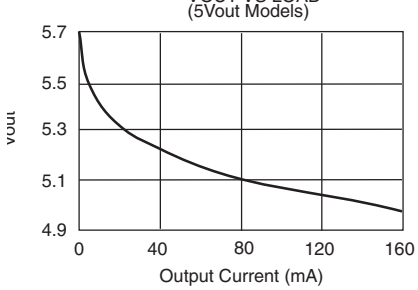
SOLDERING INFORMATION

The surface mount versions of the HPR1XXWC series are designed for SMT reflow soldering. During this standard process devices should be heated at a rate not to exceed 3 degrees C per second. The peak reflow temperature is 260 degrees C. The device should not be exposed to the peak temperature ±10 degrees C for more than 12 seconds. The cool down rate for this device should not exceed 3 degrees C per second.

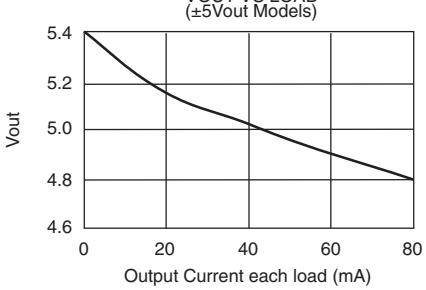
TYPICAL PERFORMANCE CURVES

Specifications are at T_A = +25℃ nominal input voltage and nominal load.

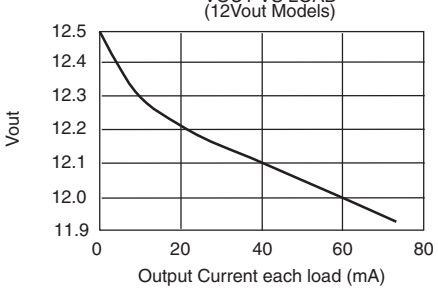
VOUT VS LOAD (5Vout Models)



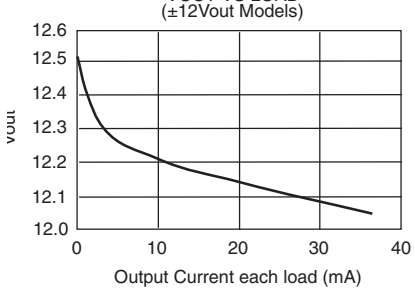
VOUT VS LOAD (±5Vout Models)



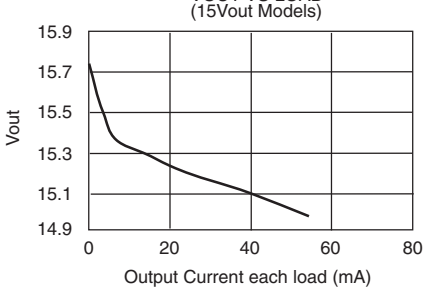
VOUT VS LOAD (12Vout Models)



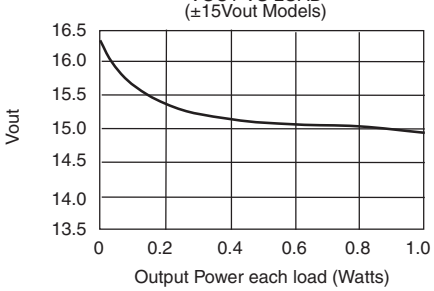
VOUT VS LOAD (±12Vout Models)



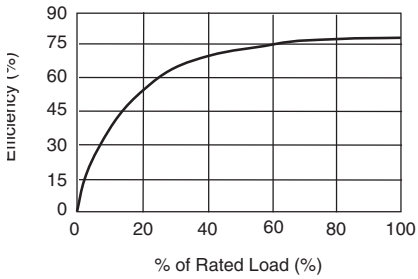
VOUT VS LOAD (15Vout Models)



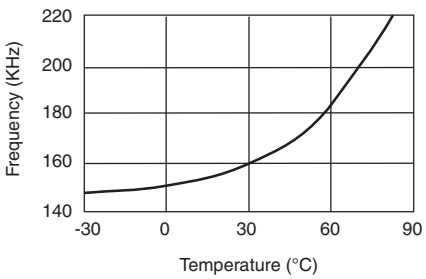
VOUT VS LOAD (±15Vout Models)



EFFICIENCY VS LOAD

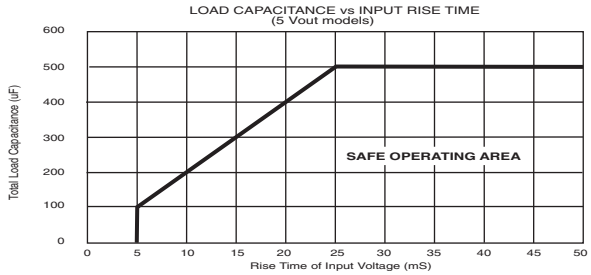


OSCILLATION FREQUENCY VS TEMPERATURE

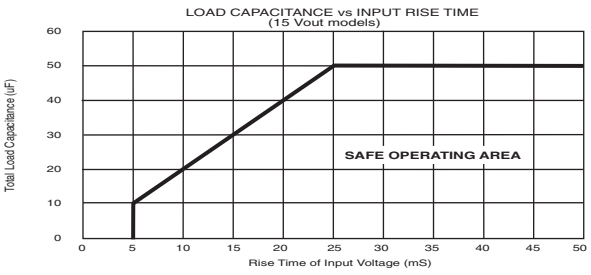


SAFE OPERATING AREA

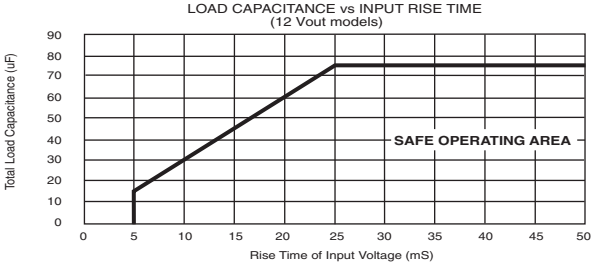
LOAD CAPACITANCE vs INPUT RISE TIME (5 Vout models)



LOAD CAPACITANCE vs INPUT RISE TIME (15 Vout models)



LOAD CAPACITANCE vs INPUT RISE TIME (12 Vout models)



NOTES:

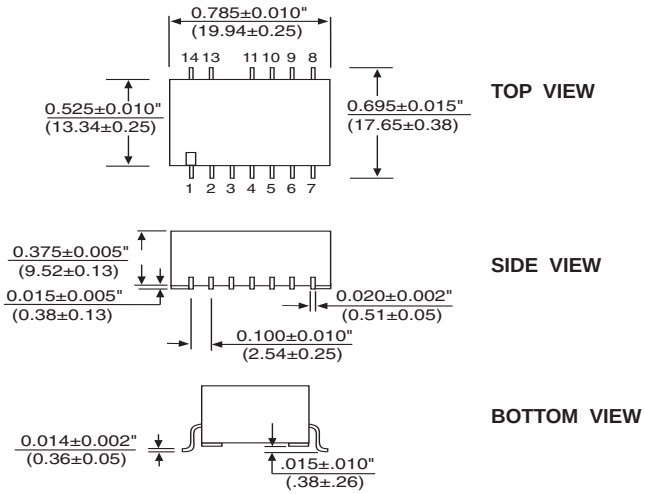
1.) When operated within the SAFE OPERATING AREA as defined by the above curves, the output voltage of HPR1XXC devices is guaranteed to be within 95% of its steady-state value within 100 milliseconds after the input voltage has reached 95% of its steady-state value.

2.) For dual output models, total load capacitance is the sum of the capacitances on the plus and minus outputs.

MECHANICAL

PACKAGE/PINOUT "W"

SMD PACKAGE



PIN CONNECTIONS					
PIN#	SINGLES	DUALS	PIN#	SINGLES	DUALS
1	+VIN	+VIN	7	+VOUT	+VOUT
2	-VIN	-VIN	8	NC	NC
3	NC	NC	9	NC	NC
4	NC	NC	10	NC	NC
5	-VOUT	-VOUT	11	NC	NC
6	NC	Common	13	NC	NC
			14	NC	NC

NOTES:

NC = Do Not Connect.

Duplicate pin functions are internally connected.

All dimensions are in inches (millimeters).

GRID: 0.100 inches (2.54 millimeters)

MATERIAL: Lead material is phosphor bronze; lead finish is 100-300 microinches of matte tin over a nickel barrier layer of 5-40 microinches.

ABSOLUTE MAXIMUM RATINGS

Internal Power Dissipation 450mW
Short Circuit Duration..... Momentary

ORDERING INFORMATION

HPR 1XX W C

Device Family
HPR Indicates DC/DC Converter

Model Number
Selected from Table of Electrical Characteristics

Package Option
W = SMD Package

RoHS Compliant Version

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ISO 9001 and 14001 REGISTERED