

Figure 1. Physical Photos of AHVR15V5KV2MAP

FEATURES

- Output Voltage Proportional to Input Voltage
• Output Voltage from 0 to 5000V
• Input Voltage from 0V to 15V
• Low Power Consumption
• High Efficiency
• High Stability
• Low Turn-on Voltage 0.7VDC
• Input to Output Isolation
• Small Output Ripple, Time Drift, and Temperature Drift
• Overload and Short Circuit Protection
• Metal Enclosure for Zero EMIS
• Easy Control and Installation

APPLICATIONS

This power module, AHVR15V5KV2MAP, is designed for achieving DC-DC conversion from low voltage to high voltage as a power supply source. It can be used for:

- X-ray Machine
• Spectral Analysis
• Nondestructive Inspection
• Semiconductor Manufacturing Equipment
• Capillary Electrophoresis
• Physical Vapor Phase Deposition
• Electrospinning Preparation of Nanofiber
• DC Reactive Magnetron Sputtering

Table 1. Pin Names, Functions and Specifications

Table with 7 columns: No., Name, Description, Type, Min., Typ., Max. and 5 rows of pin specifications.



DESCRIPTION

AHVR15V5KV2MAP comes with a quasi-sine wave oscillator, a fully enclosed transformer, an input and output filter, and a five-sided metal enclosure. These modules present low EMI/RFI, low noise, and low ripple. The input and output are galvanically isolated. Proportional to the input voltage, the output voltage has a typical turn-on voltage as low as 0.7V. It also comes with output short-circuit protection and a wide range of output voltage adjustments. This high voltage power supply also features ultra-small size, light weight, moisture proof, shockproof, metal enclosure, and zero EMIs.

USING AHVR15V5KV2MAP

This high voltage power supply must be mounted tightly onto a metal plate, ideally, thus expanding its heating sinking capacity of the metal enclosure. Sufficient ventilation must be provided to keep the power supply surface temperature under 55°C.

SAFETY PRECAUTIONS

Although AHVR15V5KV2MAP high voltage power supply comes with an over current protection circuit, a short circuit at the output should always be avoided. Make sure the high voltage wire for connecting V_{OUT} node has sufficient insulation capability with its surrounding objects.

BLOCK DIAGRAM

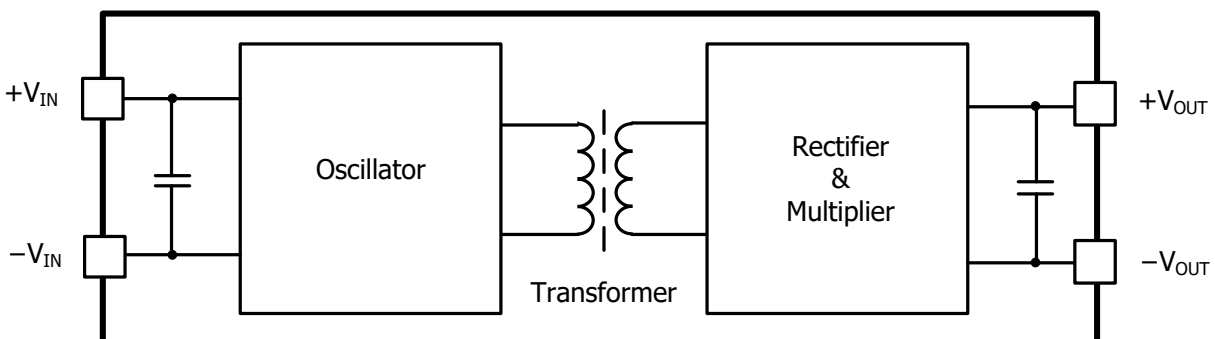


Figure 4. Block Diagram

APPLICATION NOTES

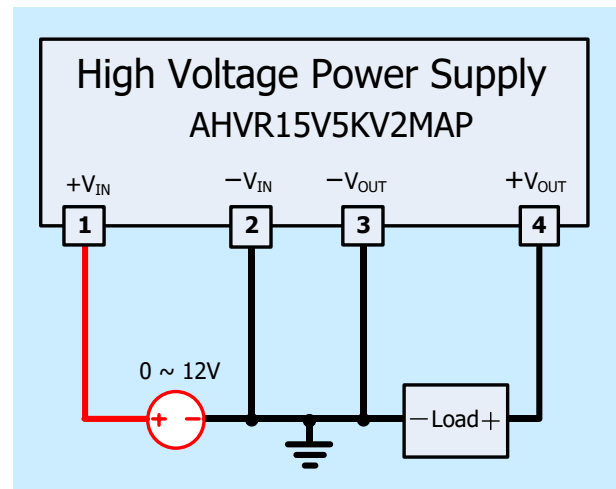


Figure 2. Positive Output

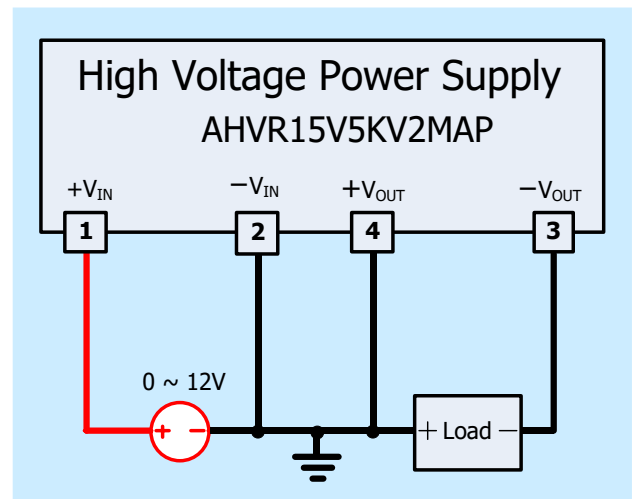


Figure 3. Negative Output



SPECIFICATIONS

Table 2. Characteristics. T_A = 25°C, unless otherwise noted.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit/Note
Input Power Supply Voltage	V _{IN}		0		15	V
Input Power Supply Quiescent Current	I _{VPS_QC}	I _{VOUT} = 0mA	300	400	500	mA
Input Power Supply Current at Full Load	I _{VPS_FL}	I _{VOUT} = 2mA	1.3	1.4	1.5	A
Output Voltage Range	V _{VOUT}	I _{VOUT} = 0 ~ 2mA	0		5000	V
Output Current Range	I _{VOUTMAX}	V _{IN} = 12V	0		2	mA
Output Load Resistance Range			$\frac{V_{VOUT}}{I_{VOUT}}$		∞	MΩ
Output Voltage Tolerance		At Max V _{OUT} , Full Load			±5	%
Output Voltage Ripple	V _{VOUT_RP}	R _{LOAD} = 2.5MΩ V _{VOUT} = 5000V	≤1			V _{P-P}
Response Time	t _{RESPONSE}	0 to Max V _{OUT} , Full Load		260		ms
Isolation Voltage: Input to Output				3500		V
Switching Frequency	F _{SW}		25		125	kHz
Full Load Efficiency	η	V _{VPS} = 12V V _{VOUT} = 5000V I _{VOUT} = 2mA		≥70		%
Output Voltage Temperature Stability		-20 ~ 50°C			±1	%
Operating Temperature Range	T _{opr}		-10		70	°C
Storage Temperature Range	T _{stg}		-25		90	°C
Humidity		Non-condensing		95		%RH
External Dimensions			71.1×43.2×21.6			mm
			2.80×1.70×0.85			inch
Weight				145		g
				0.32		lbs
				5.11		Oz



TESTING DATA

Test conditions: $V_{PS} = 12V$, $T_A = 25^\circ C$, $R_{LOAD} = 2.5M\Omega$

The measured output voltage, V_{OUT} , corresponding to the input voltage, V_{IN} , is shown in Figure 7.

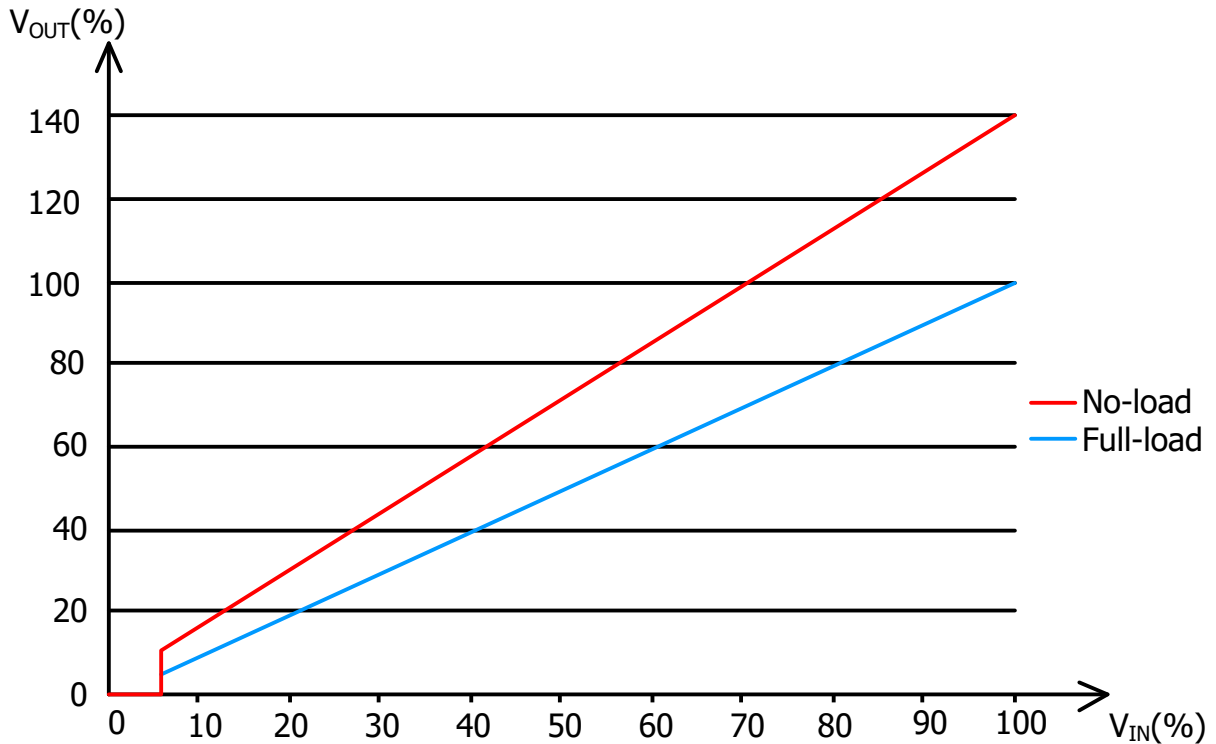


Figure 5. V_{IN} vs. V_{OUT}

NAMING PRINCIPLE

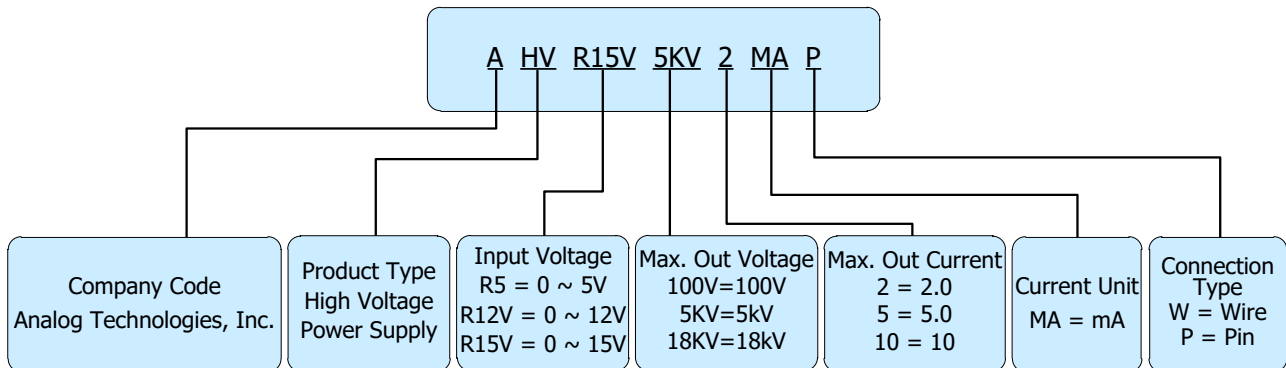


Figure 6. Naming Principle of AHVR15V5KV2MAP



DIMENSIONS

Pin Layout

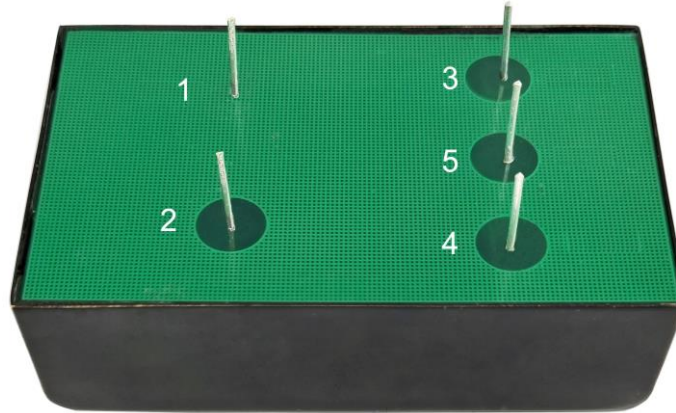


Figure 7. Pin Layout for AHVR15V5KV2MAP

Outline Dimensions

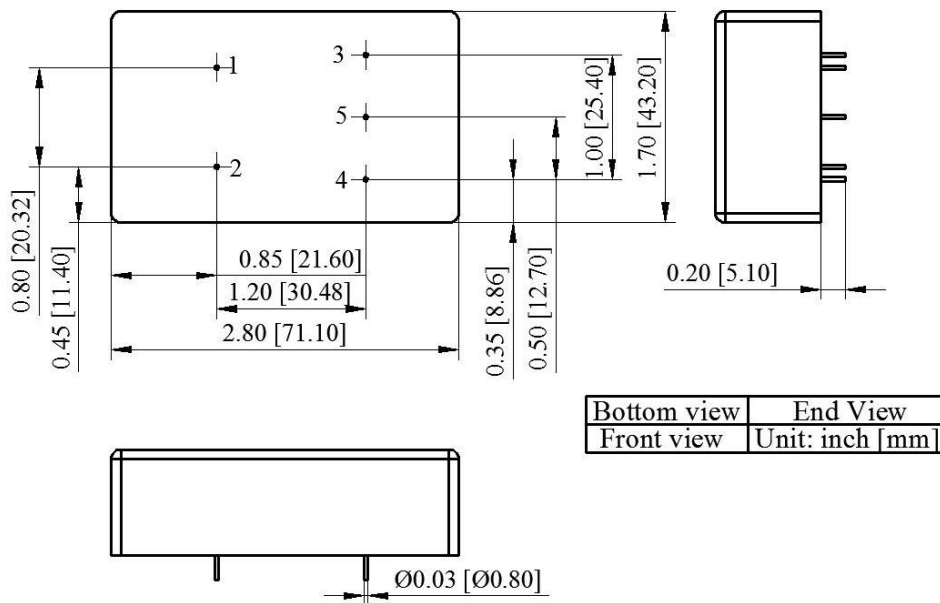


Figure 8. Outline Dimensions

ORDERING INFORMATION

Part Number	Buy Now
AHVR15V5KV2MAP	* *

*: both and are our online store icons. Our products can be ordered from either one of them with the same pricing and delivery time.



RELATED PRODUCTS

Part #	Datasheet	Output Type	Output Voltage (V)	Output Current (mA)	Input Voltage (V)	Ripple (%)	Buy Now*
AHVR12V100V100MAP	Contact Us	Single Output	0 ~ 100 or 0 ~ -100	100	0 ~ 12	<0.6	Contact Us
AHVR12V100V50MAP2	Contact Us	Dual Output	0 ~ ±100	50	0 ~ 12	<1.0	Contact Us
AHVR12V200V50MAP	Contact Us	Single Output	0 ~ 200 or 0 ~ -200	50	0 ~ 12	<1.0	Contact Us
AHVR12V300V33R3MAP	Contact Us	Single Output	0 ~ 300 or 0 ~ -300	33.3	0 ~ 12	<1.0	Contact Us
AHVR12V150V33R3MAP2	Contact Us	Dual Output	0 ~ ±150	33.3	0 ~ 12	<1.0	Contact Us
AHVR12V400V25MAP	Contact Us	Single Output	0 ~ 400 or 0 ~ -400	25	0 ~ 12	<1.0	Contact Us
AHVR12V200V25MAP2	Contact Us	Dual Output	0 ~ ±200	25	0 ~ 12	<1.0	Contact Us
AHVR12V500V20MAP		Single Output	0 ~ 500 or 0 ~ -500	20	0 ~ 12	<1.0	*
AHVR12V600V16MAP	Contact Us	Single Output	0 ~ 600 or 0 ~ -600	16	0 ~ 12	<1.0	Contact Us
AHVR12V300V25MAP2	Contact Us	Dual Output	0 ~ ±300	16	0 ~ 12	<1.0	Contact Us
AHVR12V800V12R5MAP	Contact Us	Single Output	0 ~ 800 or 0 ~ -800	12.5	0 ~ 12	<1.0	Contact Us
AHVR12V1KV10MAP		Single Output	0 ~ 1000 or 0 ~ -1000	12.5	0 ~ 12	<1.0	*
AHVR12V500V10MAP2	Contact Us	Dual Output	0 ~ ±500	10	0 ~ 12	<1.0	Contact Us
AHVR12V1200V8R3MAP	Contact Us	Single Output	0 ~ 1200 or 0 ~ -1200	8.3	0 ~ 12	<1.0	Contact Us
AHVR12V600V8R3MAP2	Contact Us	Dual Output	0 ~ ±600	8.3	0 ~ 12	<1.0	Contact Us
AHVR12V1500V6R6MAP	Contact Us	Single Output	0 ~ 1500 or 0 ~ -1500	6.6	0 ~ 12	<1.0	Contact Us
AHVR12V750V6R6MAP2	Contact Us	Dual Output	0 ~ ±750	6.6	0 ~ 12	<1.0	Contact Us
AHVR12V2KV5MAP		Single Output	0 ~ 2000 or 0 ~ -2000	5	0 ~ 12	<1.0	*
AHVR15V3KV3R3MAP		Single Output	0 ~ 3000 or 0 ~ -3000	3.3	0 ~ 15	<1.0	*
AHVR15V1500V3R3MAP2	Contact Us	Dual Output	0 ~ ±1500	3.3	0 ~ 15	<1.0	Contact Us
AHVR15V4KV2R5MAP		Single Output	0 ~ 4000 or 0 ~ -4000	2.5	0 ~ 15	<1.0	*
AHVR15V2KV2R5MAP2	Contact Us	Dual Output	0 ~ ±2000	2.5	0 ~ 15	<1.0	Contact Us
AHVR15V5KV2MAP		Single Output	0 ~ 5000 or 0 ~ -5000	2.0	0 ~ 15	<1.0	*
AHVR15V2500V2MAP2	Contact Us	Dual Output	0 ~ ±2500	2.0	0 ~ 15	<1.0	Contact Us
AHVR15V6KV1R66MAP	Contact Us	Single Output	0 ~ 6000 or 0 ~ -6000	1.66	0 ~ 15	<1.0	Contact Us
AHVR15V3KV2MAP2	Contact Us	Dual Output	0 ~ ±3000	1.66	0 ~ 15	<1.0	Contact Us
AHVR15V8KV1R25MAP	Contact Us	Single Output	0 ~ 8000 or 0 ~ -8000	1.25	0 ~ 15	<2.5	Contact Us
AHVR15V4KV1R25MAP2	Contact Us	Dual Output	0 ~ ±4000	1.25	0 ~ 15	<2.5	Contact Us
AHVR15V10KV1MAP	Contact Us	Single Output	0 ~ 10000 or 0 ~ -10000	1.25	0 ~ 15	<2.5	Contact Us
AHVR15V12KVR83MAP	Contact Us	Single Output	0 ~ 12000 or 0 ~ -12000	0.83	0 ~ 15	<2.5	Contact Us
AHVR15V6KV83MAP2	Contact Us	Dual Output	0 ~ ±6000	0.83	0 ~ 15	<2.5	Contact Us



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