

SERIES:		
AV	AV-P	AV-N

Hi Voltage DC- DC CONVERTERS

1,500 to 5,000 VDC Output

PLUG-IN

Hi Reliability

Ultra-Miniature - Low Profile

ULTRA MINIATURE

0.500" x 0.500" x 0.500"

Up to 5,000 VDC output

- AV: For isolated applications, positive or negative outputs
- AV-P: For positive output, with common grounds
- AV-N: For negative output, with common grounds

This series of unregulated high voltage DC-DC converters are produced in an ultra-miniature encapsulated package. 114 different models are available. These single output units will operate over the temperature range of -25° C to +70° C with no heat sink or electrical derating. For military applications an operating temperature range of -55° C to +85° C is available. An optional environmental screening package per MIL-STD-883 is also available.

TYPICAL CHARACTERISTICS:

FEATURES

- 3 distinct series to maximize your design potential
- 1.25 watt output at 70° ambient
- Ultra-miniature size 0.500" height, 5.0 grams weight, 0.125 cubic inches volume
- 6 input voltage ranges 5, 12, 15, 24, 28, and 48 VDC
- MIL-STD 883 options available
- No heat sink or electrical derating required

OPTIONS AVAILABLE

- Per Mil. Std. 883
- Expanded operating temp (-55° C to +85° C)
- Stabilization Bake (+125° C ambient)
- Temperature Cycle (-55° C to +125° C)
- Hi Temp, full power burn in

- **Test conditions:** 25° C ambient and input voltage at nominal value unless otherwise specified.
- **LINE REGULATION:** OUTPUT IS DIRECTLY PROPORTIONAL TO THE INPUT.
- **Input voltage range:**±10% all models
- **Output voltage tolerance at full load (nom. input):** ±3%
Please keep load to minimum of 10% at all times.
Note: For tighter output voltage tolerances, please consult factory.
- **Converter frequency:** 20 - 40 KHz
- **Output temperature coefficient:** 0.05%/°C for all models
- **Operating temperature:** -25° C to +70° C ambient. No heat sink is required.
- **Storage temperature:** -55° C to +125° C

SERIES AV
FOR ISOLATED OPERATION

Input and output grounds floating

Output voltage can be positive or negative

PICO PART NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	MAX. LOAD CURRENT (uA)	MAX. OUTPUT POWER (W)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT @ FULL LOAD (mA)	TYPICAL OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p)**	FULL LOAD OUTPUT VOLTAGE TOLERANCE (±%)	PRICE (US \$)
5AV1500	5	1500	833	1.25	78	321	75	3	219.28
5AV2000	5	2000	625	1.25	77	325	75	3	219.28
5AV2500	5	2500	500	1.25	77	325	75	3	243.78
5AV3000	5	3000	417	1.25	76	329	75	3	243.78
5AV3500	5	3500	357	1.25	75	333	75	3	280.53
5AV4000	5	4000	313	1.25	73	342	100	3	280.53
5AV4500	5	4500	278	1.25	71	352	100	3	305.04
5AV5000	5	5000	250	1.25	71	352	125	3	305.04
12AV1500	12	1500	833	1.25	79	132	75	3	219.28
12AV2000	12	2000	625	1.25	79	132	75	3	219.28
12AV2500	12	2500	500	1.25	79	132	75	3	243.78
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12AV4500	12	4500	278	1.25	80	130	100	3	305.04
12AV5000	12	5000	250	1.25	80	130	125	3	305.04
15AV1500	15	1500	833	1.25	79	105	75	3	219.28
15AV2000	15	2000	625	1.25	79	105	75	3	219.28
15AV2500	15	2500	500	1.25	79	105	75	3	243.78
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15AV5000	15	5000	250	1.25	80	104	125	3	305.04

24AV1500	24	1500	833	1.25	79	66	75	3	219.28
24AV2000	24	2000	625	1.25	79	66	75	3	219.28
24AV2500	24	2500	500	1.25	79	66	75	3	243.78
24AV3000	24	3000	417	1.25	79	66	75	3	243.78
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24AV5000	24	5000	250	1.25	80	65	125	3	305.04
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28AV2000	28	2000	625	1.25	79	57	75	3	219.28
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28AV4500	28	4500	278	1.25	80	56	100	3	305.04
28AV5000	28	5000	250	1.25	80	56	125	3	305.04
48AV1500	48	1500	833	1.25	79	33	75	3	219.28
48AV2000	48	2000	625	1.25	79	33	75	3	219.28
48AV2500	48	2500	500	1.25	79	33	75	3	243.78
48AV3000	48	3000	417	1.25	79	33	75	3	243.78
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48AV4500	48	4500	278	1.25	80	33	100	3	305.04
48AV5000	48	5000	250	1.25	80	33	125	3	305.04

** NOTE: Output ripple measured with 470pF, 6 KV Capacitor across the output. Add additional capacitor across output terminals for further ripple reduction.
Ordering Instructions: No minimum. Net 30 days F.O.B. Pelham, New York

SAFETY NOTE:The high voltage power supplies described in this datasheet generate voltages which can be lethal. They should only be installed and used by personnel who have received the appropriate training and who are fully aware of the hazards that exist.

Series AV

For use when input and output grounds are floating - Isolated from each other
Either a Positive or Negative Output can be obtained

AV

SERIES AV: 1,500 TO 5,000 VDC ISOLATED OUTPUT

Notes: All dimensions are in inches
White dot on top of the unit indicates + Input
Typical Weight: 5 Grams

Typical Weight: 5 grams

[Larger Size Drawing](#) [1]

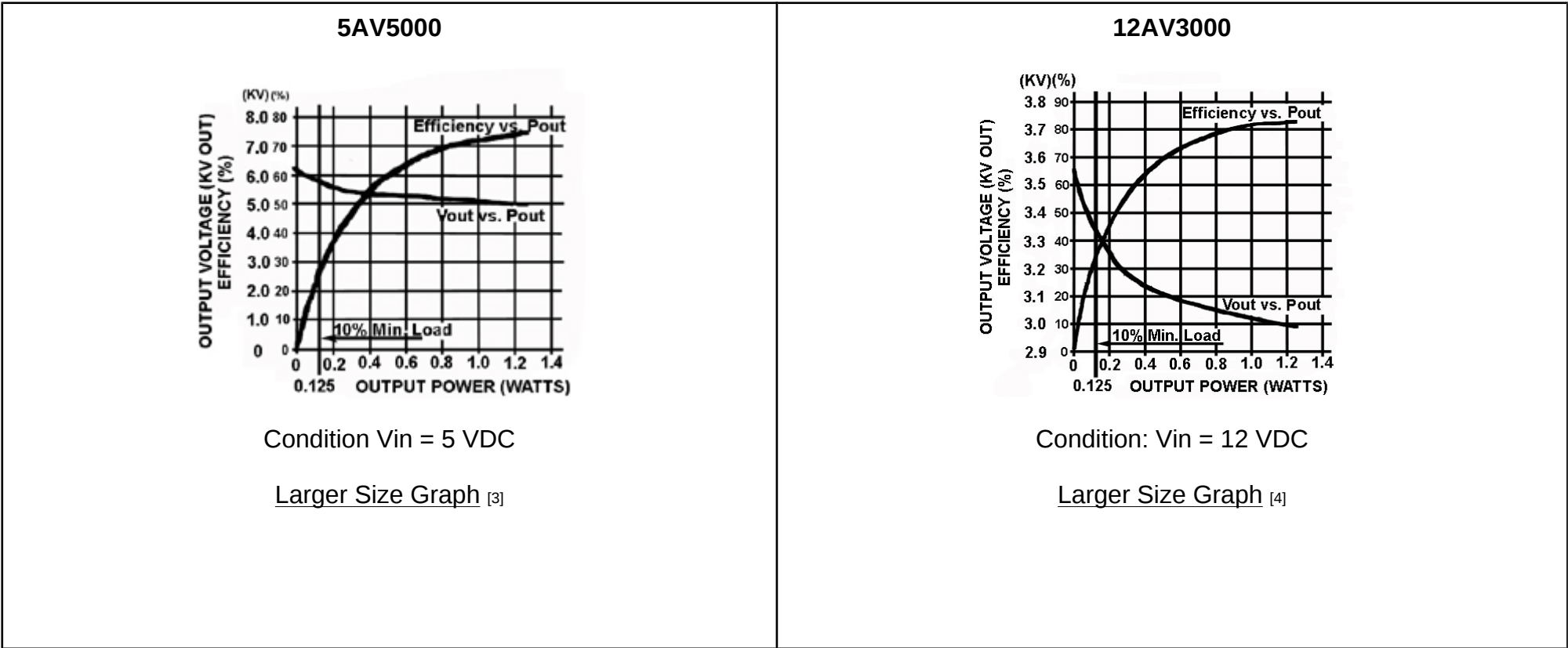
Typical Weight: 5 Grams

SERIES AV: 1,500 TO 5,000 VDC ISOLATED OUTPUT

C1 = REQUIRED OUTPUT CAPACITOR
RECOMMENDED VALUE 470pF, 6KV

Note: White dot on top indicates + input

Bottom View
[Larger Size Schematic](#) [2]



SERIES AV-P Common Ground Positive Output For use when input and output grounds are connected and a positive output voltage is required									
PICO PART NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	MAX. LOAD CURRENT (uA)	MAX. OUTPUT POWER (W)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT @ FULL LOAD (mA)	TYPICAL OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p)**	FULL LOAD OUTPUT VOLTAGE TOLERANCE (±%)	PRICE (US \$)
5AV1500-P	5	+1500	833	1.25	78	321	75	3	219.28
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15AV4500-P	15	+4500	278	1.25	80	104	100	3	305.04
15AV5000-P	15	+5000	250	1.25	80	104	125	3	305.04
24AV1500-P	24	+1500	833	1.25	79	66	75	3	219.28
24AV2000-P	24	+2000	625	1.25	79	66	75	3	219.28
24AV2500-P	24	+2500	500	1.25	79	66	75	3	243.78
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24AV4000-P	24	+4000	313	1.25	80	65	100	3	280.53
24AV4500-P	24	+4500	278	1.25	80	65	100	3	305.04
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**** NOTE:** Output ripple measured with 470pF, 6 KV Capacitor across the output. Add additional capacitor across output terminals for further ripple reduction.
Ordering Instructions: No minimum. Net 30 days F.O.B. Pelham, New York

Series AV-P

For use when input and output grounds are connected and a positive output voltage is required

AV-P

For Positive Output Voltage

SERIES AV: 1,500 TO 5,000 VDC POSITIVE OUTPUT

The top view shows a square component with a width of 0.500 inches and a height of 0.500 inches. It has four pins extending from the bottom, with a distance of 1.000 inches from the top edge to the base of the pins. The bottom view shows the pin layout with dimensions: 0.400 inches between the top pins, 0.375 inches between the bottom pins, and 0.350 inches between the inner pins. The total width is 0.500 inches. A note indicates a white dot on top indicates + Input. Typical Weight: 5 Grams.

Notes: All dimensions are in inches
White dot on top of the unit indicates + Input
Typical Weight: 5 Grams

Typical Weight: 5 grams

[Larger Size Drawing](#) [5]

Typical Weight: 5 Grams

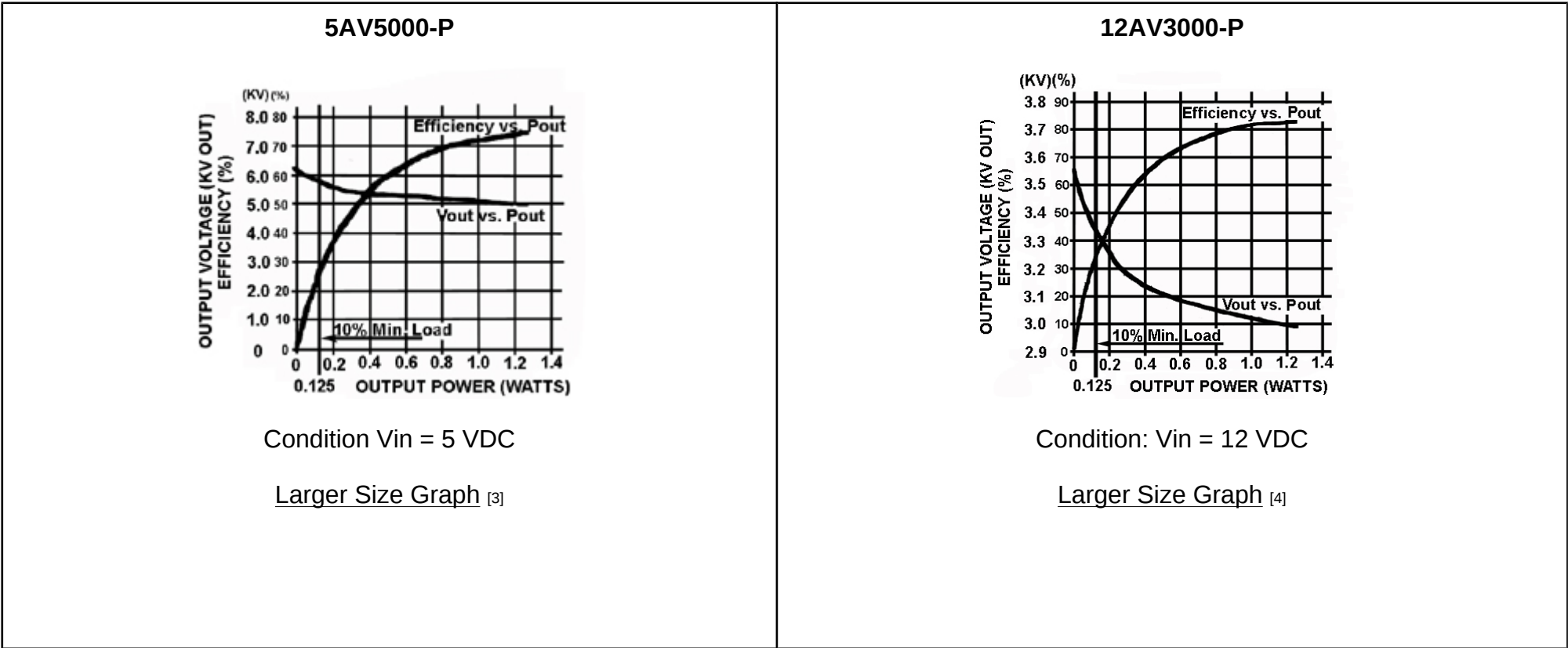
SERIES AV: 1,500 TO 5,000 VDC POSITIVE OUTPUT

The schematic shows a power source connected to the +IN and -IN terminals. The output terminals are +OUT and COM, connected to a load and a capacitor C1. A ground symbol is shown. A note specifies C1 = REQUIRED OUTPUT CAPACITOR, RECOMMENDED VALUE 470pF, 6KV.

Note: White dot on top indicates + input

Bottom View

[Larger Size Schematic](#) [6]



SERIES AV-N

Common Ground Negative Output

For use when input and output grounds are connected and a negative output voltage is required

PICO PART NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	MAX. LOAD CURRENT (uA)	MAX. OUTPUT POWER (W)	EFF. @ FULL LOAD TYPICAL (%)	INPUT CURRENT @ FULL LOAD (mA)	TYPICAL OUTPUT VOLTAGE RIPPLE @ FULL LOAD (Vp-p)**	FULL LOAD OUTPUT VOLTAGE TOLERANCE (±%)	PRICE (US \$)
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15AV4500-N	15	-4500	278	1.25	80	104	100	3	305.04
15AV5000-N	15	-5000	250	1.25	80	104	125	3	305.04
24AV1500-N	24	-1500	833	1.25	79	66	75	3	219.28
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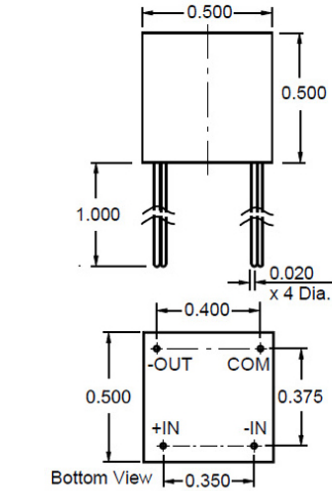
Series AV-N

For use when input and output grounds are connected and a negative output voltage is required

AV-N

For Negative Output Voltage

SERIES AV-1,500 TO 5,000 VDC NEGATIVE OUTPUT



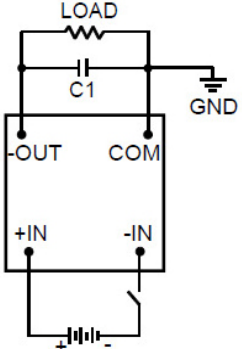
Notes: All dimensions are in inches
White dot on top of the unit indicates + Input
Typical Weight: 5 Grams

Typical Weight: 5 grams

Larger Size Drawing [7]

Typical Weight: 5 Grams

SERIES AV: 1,500 TO 5,000 VDC NEGATIVE OUTPUT



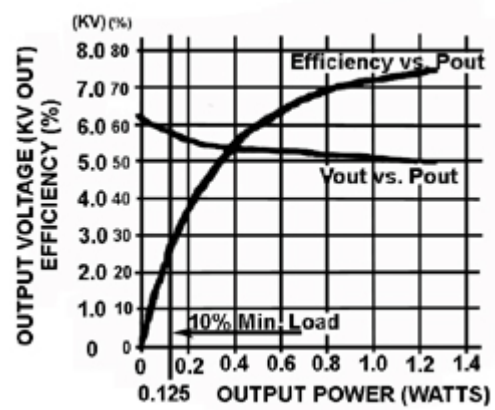
C1 = REQUIRED OUTPUT CAPACITOR
RECOMMENDED VALUE 470pF, 6KV

Note: White dot on top indicates + input

Bottom View

Larger Size Schematic [8]

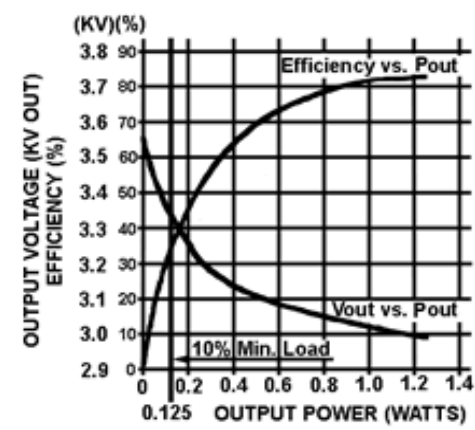
5AV5000-N



Condition $V_{in} = 5$ VDC

[Larger Size Graph](#) ^[3]

12AV3000-N



Condition: $V_{in} = 12$ VDC

[Larger Size Graph](#) ^[4]

For immediate engineering assistance or to place an order:
Call Toll Free: 800-431-1064

PICO Electronics, Inc.

143 Sparks Ave. Pelham, NY 10803
Tel: 914-738-1400 or Fax: 914-738-8225