

## SERIES AV/SMV SURFACE MOUNT and PLUG-IN

Hi Voltage - Up to 500 VDC Output  
Hi Reliability  
Ultra-Miniature - Low Profile  
Isolated DC-DC Converters

### NEW DUAL OUTPUT MODULES ± 100 to ±250 VDC OUT

This series of unregulated high voltage DC-DC converters are produced in an ultra-miniature encapsulated package. 110 different models are available. These single and dual output isolated 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.

#### FEATURES

- 1.25 watt output at 70° ambient
- Ultra-miniature size 0.400" height, 4.0 grams weight, 0.1 cubic inches volume
- 5 input voltage ranges 5, 12, 15, 24 and 28 VDC
- 100 megohm @ 1000 VDC input/output isolation
- MIL-STD 883 options available
- No heat sink or electrical derating required
- New dual outputs: ± Vout 100 to 250 VDC

#### OPTIONS AVAILABLE

- Selected 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 (100% power, 125° C case temp)

#### TYPICAL CHARACTERISTICS:

- **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 loaded to minimum of 10% at all times.  
**Note:** For tighter output voltage tolerances, please consult factory.
- **Converter frequency:** 20 - 40 KHz
- **Output temperature coefficient:** 0.02%/°C for all models
- **Operating temperature:** -25° C to +70° C ambient. No heat sink is required.
- **Storage temperature:** -55° C to +125° C
- **Isolation:** 100 megohms min. @ 1000V DC

### SERIES AV/SMV - SINGLE OUTPUT

PICO Plug-in Part Number	PICO Surface Mount Part Number	Input Volt. (V DC)	Output Volt. (V DC)	Max. Load Current (mA)	Max. Output Power (watts)	Eff. @ Full Load Typical (%)	Input Current Full Load Typical (mA)	* Output Volt. Ripple @ Full Load (Vp-p max)	** Full Load Output Volt. Tolerance (± %)	Price (US \$)
5AV100	5SMV100	5	100	12.50	1.25	78	321	0.90	3	91.73
5AV150	5SMV150	5	150	8.30	1.25	76	329	0.90	3	91.73
5AV200	5SMV200	5	200	6.25	1.25	75	333	0.90	3	91.73
5AV250	5SMV250	5	250	5.00	1.25	75	333	0.90	3	91.73
5AV300	5SMV300	5	300	4.16	1.25	70	357	1.20	3	113.35
5AV350	5SMV350	5	350	3.57	1.25	70	357	1.20	3	113.35
5AV400	5SMV400	5	400	3.12	1.25	70	357	1.20	3	113.35
5AV450	5SMV450	5	450	2.77	1.25	70	357	1.50	3	113.35
5AV500	5SMV500	5	500	2.50	1.25	70	357	1.50	3	113.35

12AV100	12SMV100	12	100	12.50	1.25	80	130	0.90	3	91.73
12AV150	12SMV150	12	150	8.30	1.25	79	132	0.90	3	91.73
12AV200	12SMV200	12	200	6.25	1.25	78	134	0.90	3	91.73
12AV250	12SMV250	12	250	5.00	1.25	75	139	0.90	3	91.73
12AV300	12SMV300	12	300	4.16	1.25	75	139	1.20	3	113.35
12AV350	12SMV350	12	350	3.57	1.25	75	139	1.20	3	113.35
12AV400	12SMV400	12	400	3.12	1.25	75	139	1.20	3	113.35
12AV450	12SMV450	12	450	2.77	1.25	75	139	1.50	3	113.35
12AV500	12SMV500	12	500	2.50	1.25	75	139	1.50	3	113.35
15AV100	15SMV100	15	100	12.50	1.25	80	104	0.90	3	91.73
15AV150	15SMV150	15	150	8.30	1.25	79	105	0.90	3	91.73
15AV200	15SMV200	15	200	6.25	1.25	78	107	0.90	3	91.73
15AV250	15SMV250	15	250	5.00	1.25	75	111	0.90	3	91.73
15AV300	15SMV300	15	300	4.16	1.25	75	111	1.20	3	113.35
15AV350	15SMV350	15	350	3.57	1.25	75	111	1.20	3	113.35
15AV400	15SMV400	15	400	3.12	1.25	75	111	1.20	3	113.35
15AV450	15SMV450	15	450	2.77	1.25	75	111	1.50	3	113.35
15AV500	15SMV500	15	500	2.50	1.25	75	111	1.50	3	113.35
24AV100	24SMV100	24	100	12.50	1.25	76	69	0.90	3	91.73
24AV150	24SMV150	24	150	8.30	1.25	73	71	0.90	3	91.73
24AV200	24SMV200	24	200	6.25	1.25	73	71	0.90	3	91.73
24AV250	24SMV250	24	250	5.00	1.25	70	74	0.90	3	91.73
24AV300	24SMV300	24	300	4.16	1.25	73	71	1.20	3	113.35
24AV350	24SMV350	24	350	3.57	1.25	73	71	1.20	3	113.35
24AV400	24SMV400	24	400	3.12	1.25	73	71	1.20	3	113.35
24AV450	24SMV450	24	450	2.77	1.25	73	71	1.50	3	113.35
24AV500	24SMV500	24	500	2.50	1.25	73	71	1.50	3	113.35
28AV100	28SMV100	28	100	12.50	1.25	75	60	0.90	3	91.73
28AV150	28SMV150	28	150	8.30	1.25	76	59	0.90	3	91.73
28AV200	28SMV200	28	200	6.25	1.25	75	60	0.90	3	91.73
28AV250	28SMV250	28	250	5.00	1.25	70	64	0.90	3	91.73
28AV300	28SMV300	28	300	4.16	1.25	73	61	1.20	3	113.35
28AV350	28SMV350	28	350	3.57	1.25	73	61	1.20	3	113.35
28AV400	28SMV400	28	400	3.12	1.25	73	61	1.20	3	113.35
28AV450	28SMV450	28	450	2.77	1.25	73	61	1.50	3	113.35
28AV500	28SMV500	28	500	2.50	1.25	73	61	1.50	3	113.35

\* Measured using 0.1 $\mu$ f, 1000 volt DC capacitor which is required across the output and maintain at least 10% of load at all times to prevent voltage surge.

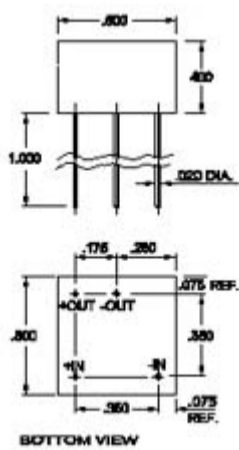
\*\*For tighter tolerances consult factory.

Ordering Instructions: No minimum. Net 30 days F.O.B. Pelham, New York

**Delivery--stock to one week for sample orders.**

### Series AV/SMV Single Output

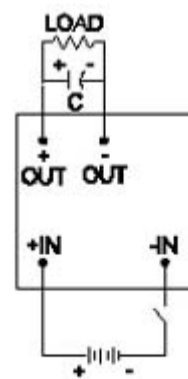
#### AV Single



Typical Weight: 4 grams  
Dimensions are in Inches

[Larger Size Drawing \[1\]](#)

#### Typical Weight: 4 Grams

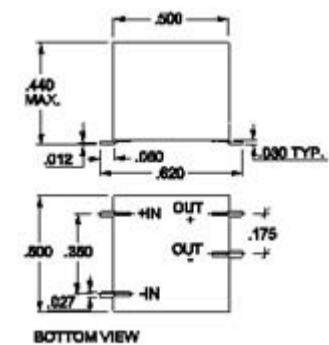


C = 0.1  $\mu$ F, 1000 VDC

Note: White dot on top indicates + input

[Larger Size Schematic \[2\]](#)

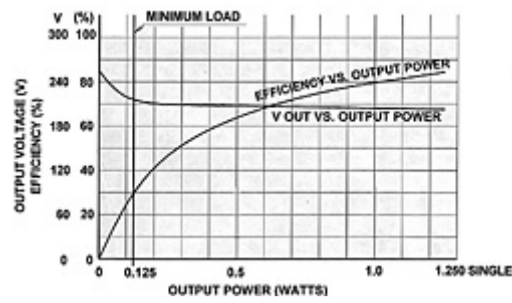
#### SMV Single



Dimensions are in Inches

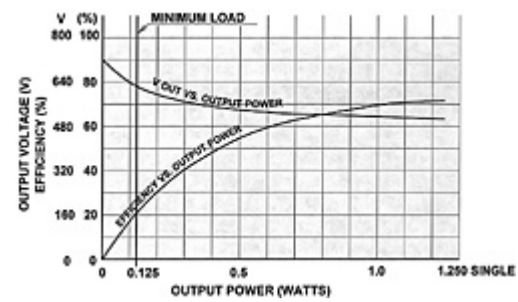
[Larger Size Drawing \[3\]](#)

**24 AV/SMV 200**



Larger Size Graph [4]

**5 AV/SMV 500**



Larger Size Graph [5]

**SERIES AV/SMV - DUAL OUTPUT**

PICO Plug-in Part Number	PICO Surface Mount Part Number	Input Voltage (V DC)	Output Voltage (V DC)	Max Current Per O/P (mA)	Max Power Per O/P (Watts)	Typical Full Load Efficiency (%)	Full Load Input Current Typical (mA)	* Max Output Voltage Ripple at Full Load (V p-p)	** Full Load Output Voltage Tolerance (± %)	Price (US \$)
5AV100D	5SMV100D	5	±100	6.25	0.625	78	320	0.4	3	137.59
5AV150D	5SMV150D	5	±150	4.17	0.625	78	320	0.4	3	137.59
5AV200D	5SMV200D	5	±200	3.13	0.625	78	320	0.4	3	160.53
5AV250D	5SMV250D	5	±250	2.5	0.625	76	329	0.4	3	160.53
12AV100D	12SMV100D	12	±100	6.25	0.625	80	130	0.4	3	137.59
12AV150D	12SMV150D	12	±150	4.17	0.625	80	130	0.4	3	137.59
12AV200D	12SMV200D	12	±200	3.13	0.625	80	130	0.4	3	160.53
12AV250D	12SMV250D	12	±250	2.5	0.625	80	130	0.4	3	160.53
15AV100D	15SMV100D	15	±100	6.25	0.625	81	103	0.4	3	137.59
15AV150D	15SMV150D	15	±150	4.17	0.625	81	103	0.4	3	137.59
15AV200D	15SMV200D	15	±200	3.13	0.625	79	106	0.4	3	160.53
15AV250D	15SMV250D	15	±250	2.5	0.625	78	107	0.8	3	160.53
24AV100D	24SMV100D	24	±100	6.25	0.625	80	66	0.8	3	137.59
24AV150D	24SMV150D	24	±150	4.17	0.625	80	66	0.8	3	137.59
24AV200D	24SMV200D	24	±200	3.13	0.625	79	66	0.8	3	160.53
24AV250D	24SMV250D	24	±250	2.5	0.625	79	66	0.8	3	160.53
28AV100D	28SMV100D	28	±100	6.25	0.625	79	57	0.8	3	137.59
28AV150D	28SMV150D	28	±150	4.17	0.625	79	57	0.8	3	137.59
28AV200D	28SMV200D	28	±200	3.13	0.625	78	58	0.8	3	160.53
28AV250D	28SMV250D	28	±250	2.5	0.625	76	59	0.8	3	160.53

\* Measured using 0.1µf, 1000 volt DC capacitor which is REQUIRED across each output and maintain at least 10% load at all times to prevent voltage surge.

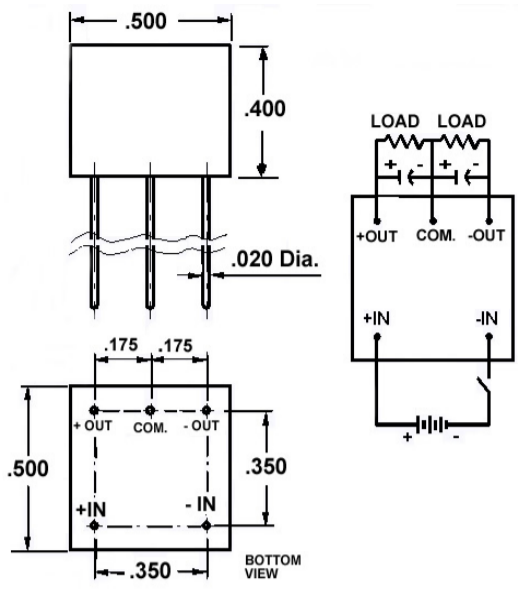
\*\* For tighter tolerances, consult factory

Ordering Instructions: No minimum. Net 30 days, F.O.B. Pelham, N.Y.

**Delivery: Stock to one week for sample orders**

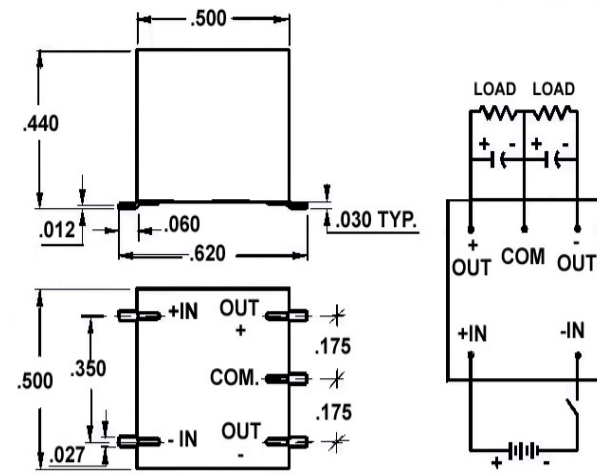
**AV DUAL SERIES**

**SMV DUAL SURFACE MOUNT**



Dimensions are in Inches

[Click Here for Larger Schematic \[6\]](#)



BOTTOM VIEW

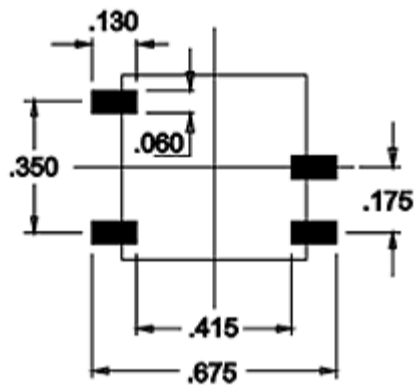
Typical weight: 3.5 Grams

NOTE: WHITE DOT ON TOP OF UNITS INDICATES + INPUT

Dimensions are in Inches

[Click Here for Larger Schematic \[7\]](#)

**RECOMMENDED LAND PATTERN DIMENSIONS  
SERIES SMV SINGLE OUTPUT  
PICO SMV SERIES**

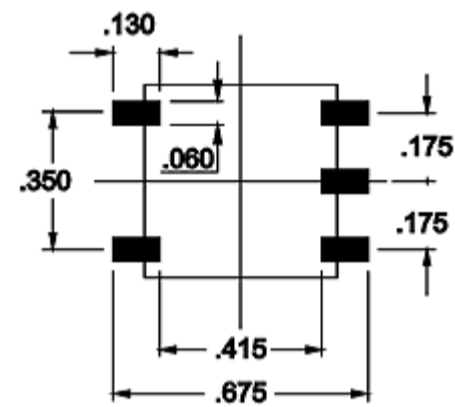


Dimensions are in Inches

[Click Here for Larger Schematic \[8\]](#)

**RECOMMENDED LAND PATTERN  
DIMENSIONS  
SERIES SMV DUAL OUTPUT**

**PICO SM SERIES.**



Dimensions are in Inches

[Click Here for Larger Schematic \[9\]](#)

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

**PICO Electronics, Inc.**

143 Sparks Ave. Pelham, NY 10803-1810  
Tel: 914-738-1400 or Fax: 914-738-8225