

## 1 AND 2 WATT DC/DC CONVERTERS SINGLE & MULTIPLE OUTPUTS



All specifications are typical at nominal input, full load

Input Voltage Range.....  $\pm 10\%$   
Input Filter..... Capacitor

|                              |                         |
|------------------------------|-------------------------|
| Output Voltage Accuracy..... | ±5%                     |
| Efficiency.....              | 75% typ.                |
| Ripple .....                 | MSV (Single) 100 mVp-p  |
|                              | (Dual) 75 mVp-p         |
|                              | MSVH (Single) 200 mVp-p |
|                              | (Dual) 150 mVp-p        |
| Line Regulation.....         | 1.2%/1% of V in         |
| Line Filter.....             | Built-in                |
| Load Regulation.....         | 5V=15% max.             |
|                              | 9V, 12V, 15V=10% max.   |

|                                                                 |                           |
|-----------------------------------------------------------------|---------------------------|
| *Isolation Voltage.....                                         | 3000 VDC                  |
| MTBF.....                                                       | >1,000,000 hours          |
| Isolation Resistance.....                                       | 1000M-ohms min. @ 500 VDC |
| *Isolation Voltage of 4,000 & 5,000 VDC available upon request. |                           |

Operating Temperature ..... -25°C ~ +85°C

Temperature Coefficient..... ±0.05%/ °C

Humidity..... 30%~95% RH

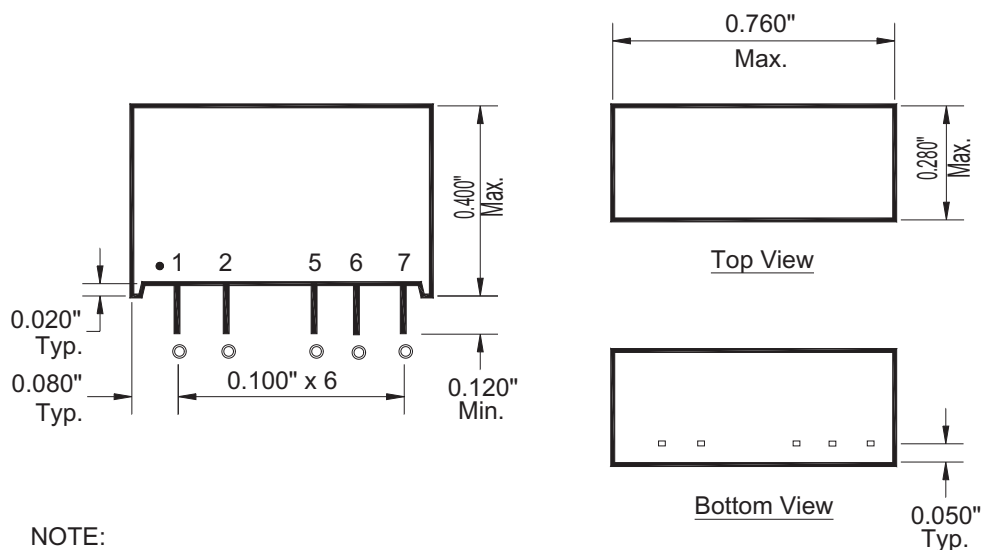
Storage Temperature..... -55°C ~ +125°C

Case Material.....UL 94V-0 Plastic  
Single In-Line Pin Configuration

- 36

| PART NUMBER | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFFICIENCY |
|-------------|---------------|----------------|----------------|------------|
| MSV - 0505  | 5 VDC         | 5 VDC          | 200 mA         | 70 %       |
| MSV - 0509  |               | 9 VDC          | 111 mA         | 75 %       |
| MSV - 0512  |               | 12 VDC         | 84 mA          | 80 %       |
| MSV - 0515  |               | 15 VDC         | 66 mA          | 82 %       |
| MSV - 0505D |               | ±5 VDC         | ±100 mA        | 70 %       |
| MSV - 0509D |               | ±9 VDC         | ±56 mA         | 75 %       |
| MSV - 0512D |               | ±12 VDC        | ±42 mA         | 78 %       |
| MSV - 0515D |               | ±15 VDC        | ±33 mA         | 80 %       |
| MSV - 1205  | 12 VDC        | 5 VDC          | 200 mA         | 70 %       |
| MSV - 1209  |               | 9 VDC          | 111 mA         | 75 %       |
| MSV - 1212  |               | 12 VDC         | 84 mA          | 80 %       |
| MSV - 1215  |               | 15 VDC         | 66 mA          | 82 %       |
| MSV - 1205D |               | ±5 VDC         | ±100 mA        | 70 %       |
| MSV - 1209D |               | ±9 VDC         | ±56 mA         | 75 %       |
| MSV - 1212D |               | ±12 VDC        | ±42 mA         | 78 %       |
| MSV - 1215D |               | ±15 VDC        | ±33 mA         | 80 %       |
| MSV - 1505  | 15 VDC        | 5 VDC          | 200 mA         | 70 %       |
| MSV - 1509  |               | 9 VDC          | 111 mA         | 75 %       |
| MSV - 1512  |               | 12 VDC         | 84 mA          | 80 %       |
| MSV - 1515  |               | 15 VDC         | 66 mA          | 82 %       |
| MSV - 1505D |               | ±5 VDC         | ±100 mA        | 70 %       |
| MSV - 1509D |               | ±9 VDC         | ±56 mA         | 75 %       |
| MSV - 1512D |               | ±12 VDC        | ±42 mA         | 78 %       |
| MSV - 1515D |               | ±15 VDC        | ±33 mA         | 80 %       |
| MSV - 2405  | 24 VDC        | 5 VDC          | 200 mA         | 70 %       |
| MSV - 2409  |               | 9 VDC          | 111 mA         | 75 %       |
| MSV - 2412  |               | 12 VDC         | 84 mA          | 80 %       |
| MSV - 2415  |               | 15 VDC         | 66 mA          | 82 %       |
| MSV - 2405D |               | ±5 VDC         | ±100 mA        | 70 %       |
| MSV - 2409D |               | ±9 VDC         | ±56 mA         | 75 %       |
| MSV - 2412D |               | ±12 VDC        | ±42 mA         | 78 %       |
| MSV - 2415D |               | ±15 VDC        | ±33 mA         | 80 %       |

## MSV - 1 WATT



### NOTE:

\*TERMINAL 0.020" x 0.010" FLAT PIN

### NOTE:

All specifications typical and nominal / full load and 25°C unless otherwise noted.  
Avoid sustained operation in overload or dead short conditions.  
Specifications subject to changes without notice.

### MSV - 1 WATT

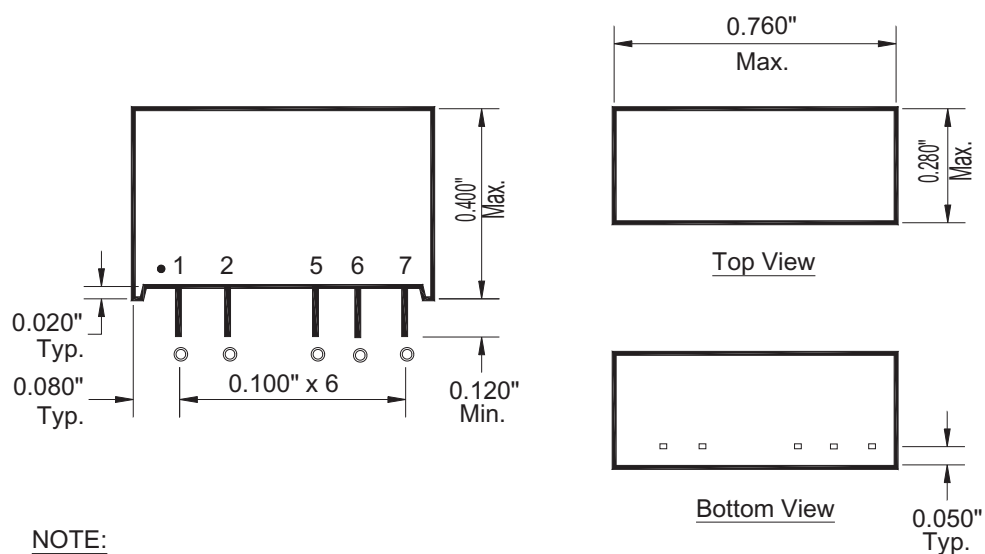
#### Pin Connections

| PIN | SINGLE   | DUAL    |
|-----|----------|---------|
| 1   | +INPUT   | +INPUT  |
| 2   | -INPUT   | -INPUT  |
| 5   | -OUTPUT- | -OUTPUT |
| 6   | NO PIN   | COMMON  |
| 7   | +OUTPUT  | +OUTPUT |

# Series

| PART NUMBER  | INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFFICIENCY |
|--------------|---------------|----------------|----------------|------------|
| MSVH - 0505  | 5 VDC         | 5 VDC          | 400 mA         | 75 %       |
| MSVH - 0509  |               | 9 VDC          | 222 mA         | 75 %       |
| MSVH - 0512  |               | 12 VDC         | 167 mA         | 78 %       |
| MSVH - 0515  |               | 15 VDC         | 133 mA         | 80 %       |
| MSVH - 0505D |               | ±5 VDC         | ±200 mA        | 70 %       |
| MSVH - 0509D |               | ±9 VDC         | ±111 mA        | 75 %       |
| MSVH - 0512D |               | ±12 VDC        | ±84 mA         | 78 %       |
| MSVH - 0515D |               | ±15 VDC        | ±66 mA         | 80 %       |
| MSVH - 1205  | 12 VDC        | 5 VDC          | 400 mA         | 82 %       |
| MSVH - 1209  |               | 9 VDC          | 222 mA         | 78 %       |
| MSVH - 1212  |               | 12 VDC         | 167 mA         | 80 %       |
| MSVH - 1215  |               | 15 VDC         | 133 mA         | 85 %       |
| MSVH - 1205D |               | ±5 VDC         | ±200 mA        | 74 %       |
| MSVH - 1209D |               | ±9 VDC         | ±111 mA        | 75 %       |
| MSVH - 1212D |               | ±12 VDC        | ±84 mA         | 80 %       |
| MSVH - 1215D |               | ±15 VDC        | ±66 mA         | 82 %       |
| MSVH - 1505  | 15 VDC        | 5 VDC          | 400 mA         | 78 %       |
| MSVH - 1509  |               | 9 VDC          | 222 mA         | 78 %       |
| MSVH - 1512  |               | 12 VDC         | 167 mA         | 80 %       |
| MSVH - 1515  |               | 15 VDC         | 133 mA         | 80 %       |
| MSVH - 1505D |               | ±5 VDC         | ±200 mA        | 70 %       |
| MSVH - 1509D |               | ±9 VDC         | ±111 mA        | 75 %       |
| MSVH - 1512D |               | ±12 VDC        | ±84 mA         | 80 %       |
| MSVH - 1515D |               | ±15 VDC        | ±66 mA         | 82 %       |
| MSVH - 2405  | 24 VDC        | 5 VDC          | 400 mA         | 80 %       |
| MSVH - 2409  |               | 9 VDC          | 222 mA         | 80 %       |
| MSVH - 2412  |               | 12 VDC         | 167 mA         | 84 %       |
| MSVH - 2415  |               | 15 VDC         | 133 mA         | 85 %       |
| MSVH - 2405D |               | ±5 VDC         | ±200 mA        | 75 %       |
| MSVH - 2409D |               | ±9 VDC         | ±111 mA        | 78 %       |
| MSVH - 2412D |               | ±12 VDC        | ±84 mA         | 80 %       |
| MSVH - 2415D |               | ±15 VDC        | ±66 mA         | 82 %       |

## 2 WATT



### NOTE:

\*TERMINAL 0.020" x 0.010" FLAT PIN

### NOTE:

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### MSVH - 2 WATTS

#### Pin Connections

| PIN | SINGLE   | DUAL    |
|-----|----------|---------|
| 1   | +INPUT   | +INPUT  |
| 2   | -INPUT   | -INPUT  |
| 5   | -OUTPUT- | -OUTPUT |
| 6   | NO PIN   | COMMON  |
| 7   | +OUTPUT  | +OUTPUT |