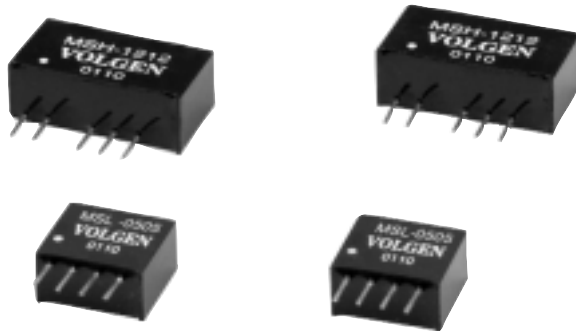




MSBH / MSH / MSL

2 WATT DC/DC CONVERTER, SIP PACKAGE



FEATURES

- ▶ **ECONOMY LINE**
- ▶ **7 PIN PACKAGE**
- ▶ **1000 VDC ISOLATION**
- ▶ **UNREGULATED OUTPUT**
- ▶ **UL 94V-0 PACKAGE MATERIAL**
- ▶ **5V ~ 24V INPUT MODELS**
- ▶ **ONE YEAR WARRANTY**

ELECTRICAL SPECIFICATIONS

All specifications are typical at nominal input, full load

INPUT SPECIFICATIONS

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

OUTPUT SPECIFICATIONS

Output Voltage Accuracy..... $\pm 5\%$
Efficiency..... 75% typ.
Ripple 200 mVp-p Single
 150 mVp-p Dual
Line Regulation..... 1.2%/1% of V in
Line Filter..... Built-in
Load Regulation..... 5V=15% max.
 9V, 12V, 15V=10% max.

GENERAL SPECIFICATIONS

Isolation Voltage..... 1000 VDC
MTBF..... >1,000,000 hours
Isolation Resistance..... 1000M-ohms min. @ 500 VDC

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Temperature Coefficient..... $\pm 0.05\% / ^{\circ}\text{C}$
Humidity..... 30%~95% RH
Storage Temperature..... $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$

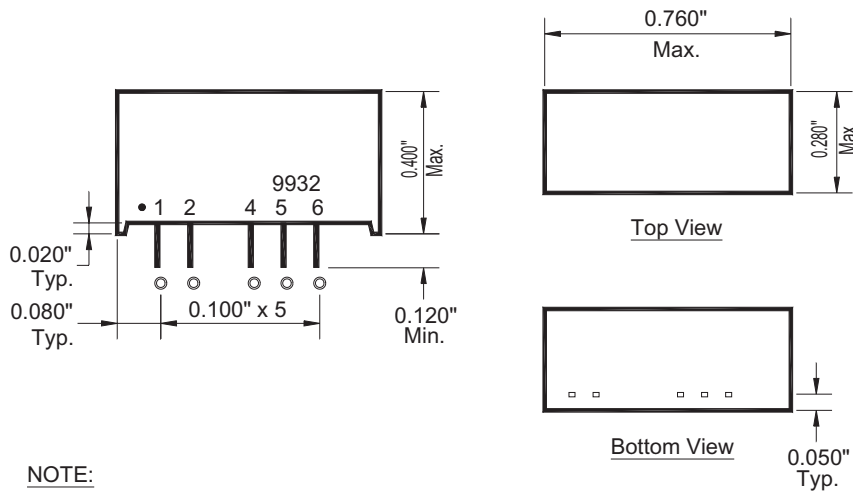
PHYSICAL SPECIFICATIONS

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

Series

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

MSBH= Single Output
MSH= Dual Output



NOTE:

*TERMINAL 0.020" x 0.010" FLAT PIN

MSH SERIES

Pin Connections

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

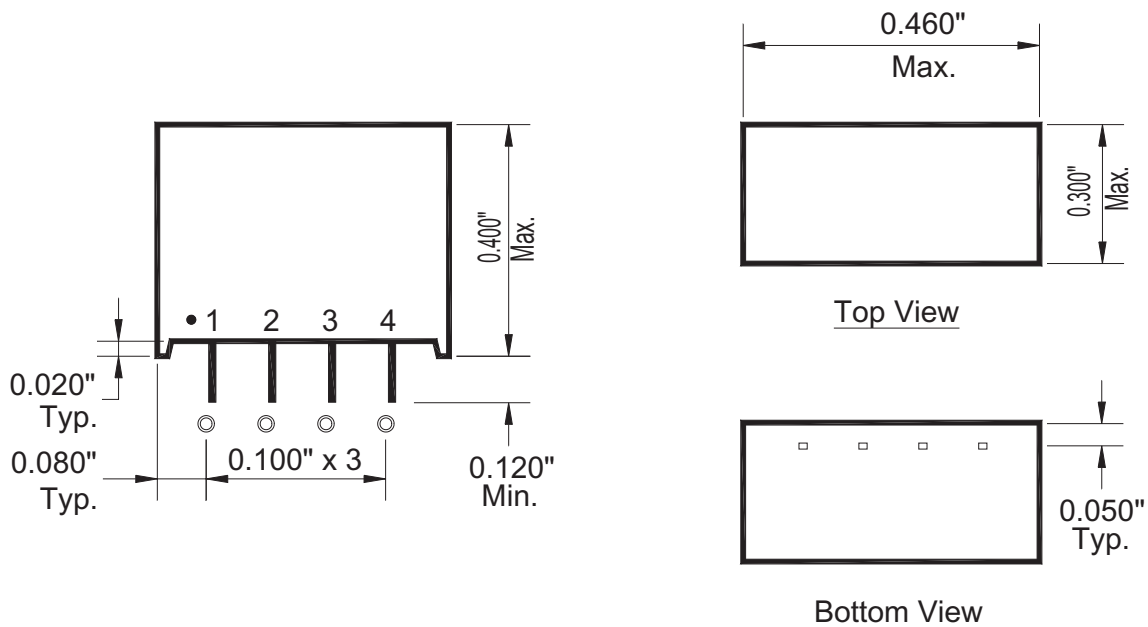
NOTE:

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.

Series

PART NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFFICIENCY
MSL - 0505	5 VDC	5 VDC	400 mA	70 %
MSL - 0509		9 VDC	222 mA	75 %
MSL - 0512		12 VDC	167 mA	78 %
MSL - 0515		15 VDC	133 mA	80 %
MSL - 1205	12VDC	5 VDC	400 mA	70 %
MSL - 1209		9 VDC	222 mA	75 %
MSL - 1212		12 VDC	167 mA	78 %
MSL - 1215		15 VDC	133 mA	80 %
MSL - 1505	15 VDC	5 VDC	400 mA	70 %
MSL - 1509		9 VDC	222 mA	75 %
MSL - 1512		12 VDC	167 mA	78 %
MSL - 1515		15 VDC	133 mA	80 %
MSL - 2405	24 VDC	5 VDC	400 mA	70 %
MSL - 2409		9 VDC	222 mA	75 %
MSL - 2412		12 VDC	167 mA	78 %
MSL - 2415		15 VDC	133 mA	80 %

MSL - Single Output



NOTE:

*TERMINAL 0.020" x 0.010" FLAT PIN

MSL SERIES

Pin Connections	
Pin#	Single
1	-INPUT
2	+INPUT
3	-OUTPUT
4	+OUTPUT

NOTE:

All specifications typical and nominal / full load and 25°C unless otherwise noted.
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 Specifications subject to changes without notice.