

FEATURES

- ▶ Compact SIP-6 Package
- ▶ Small Footprint: 17 x 11 mm (0.67"x0.43")
- ▶ Wide 2:1 Input Range
- ▶ Fully regulated Outputs
- ▶ Low Ripple and Noise
- ▶ Operating Temp. Range -40°C to +85°C
- ▶ I/O-isolation Voltage 1500VDC
- ▶ Continuous Short-circuit Protection
- ▶ Fully RoHS compliant
- ▶ 3 Years Product Warranty



PRODUCT OVERVIEW

The MINMAX MAW01 series is a range of isolated 1W dc/dc-converter modules featuring fully regulated output and wide 2:1 input voltage ranges. This product comes in a very small SIP-6 package occupying only 1.2cm² (0.2 square inch) on the PCB. A high efficiency allow operating an operating temperature range of -40°C to +85°C without Derating. The very compact dimensions makes these converters an ideal solution for many space critical applications in battery powered instrumentations.

Model Selection Guide

Model Number	Input Voltage (Range)	Output Voltage	Output Current		Input Current		Max. capacitive Load	Reflected Ripple current	Efficiency (typ.)
			Max.	@Max. Load	@No Load	@No Load			
	VDC	VDC	mA	mA(typ.)	mA(typ.)	mA(typ.)	μF	mA (typ.)	%
MAW01-05S05	5 (4.5 ~ 9)	5	200	263	40	1680	80	76	
MAW01-05S12		12	83	259					
MAW01-05S15		15	67	254					
MAW01-05D12		±12	±42	262					
MAW01-05D15		±15	±33	254					
MAW01-12S05	12 (9 ~ 18)	5	200	108	20	1680	40	77	
MAW01-12S12		12	83	108					
MAW01-12S15		15	67	105					
MAW01-12D12		±12	±42	106					
MAW01-12D15		±15	±33	106					
MAW01-24S05	24 (18 ~ 36)	5	200	54	10	1680	30	77	
MAW01-24S12		12	83	52					
MAW01-24S15		15	67	52					
MAW01-24D12		±12	±42	53					
MAW01-24D15		±15	±33	52					
MAW01-48S05	48 (36 ~ 75)	5	200	27	7	1680	20	77	
MAW01-48S12		12	83	27					
MAW01-48S15		15	67	27					
MAW01-48D12		±12	±42	27					
MAW01-48D15		±15	±33	26					

For each output

Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Surge Voltage (1 sec. max.)	5V Input Models	-0.7	---	15	VDC
	12V Input Models	-0.7	---	25	
	24V Input Models	-0.7	---	50	
	48V Input Models	-0.7	---	100	
Start-Up Threshold Voltage	5V Input Models	---	---	4.5	
	12V Input Models	---	---	9	
	24V Input Models	---	---	18	
	48V Input Models	---	---	36	
Internal Filter Type	All Models	Capacitor			

Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit	
Output Voltage Setting Accuracy	At 50% Load and Nominal Vin	---	---	±1.0	%Vnom.	
Line Regulation	Vin=Min. to Max.	---	---	±0.2	%	
Load Regulation	No Load to Full Load	Single Output Models	---	---	±1.0	%
		Dual Output Models	---	---	±1.0	%
	10% to 90% Load	Single Output Models	---	---	±0.5	%
		Dual Output Models	---	---	±0.8	%
Min.Load	No minimum Load Requirement					
Ripple & Noise (20MHz)		---	50	---	mV _{P-P}	
Transient Recovery Time	25% Load Step Change	---	250	---	µsec	
Temperature Coefficient		---	---	±0.02	%/°C	
Short Circuit Protection	Continuous					

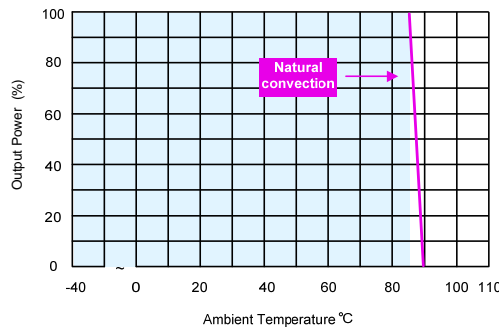
General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage (rated)	60 Seconds	1500	---	---	VDC
I/O Isolation Resistance	500 VDC	1000	---	---	MΩ
I/O Isolation Capacitance	100KHz, 1V	---	---	50	pF
Switching Frequency		---	220	---	KHz
MTBF(calculated)	MIL-HDBK-217F@25°C, Ground Benign	2,800,000	---	---	Hours

Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Ambient Temperature Range (See Power Derating Curve)	Natural Convection	-40	+85	°C
Case Temperature		---	+105	°C
Storage Temperature		-55	+125	°C
Humidity (non condensing)		---	95	% rel. H
Lead Temperature (1.5mm from case for 10Sec.)		---	260	°C

Power Derating Curve

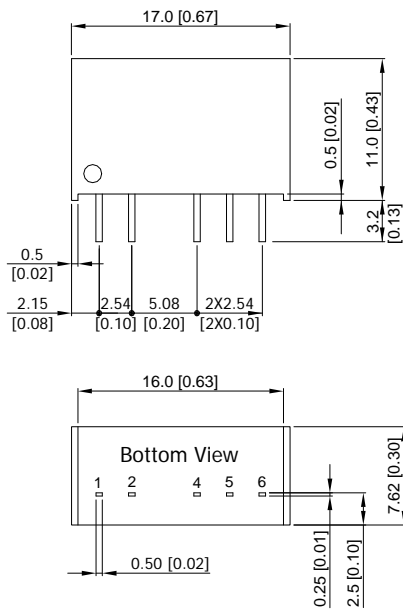


Notes

- 1 Specifications typical at Ta=+25°C, resistive load, nominal input voltage, rated output current unless otherwise noted.
- 2 Ripple & Noise measurement bandwidth is 0-20 MHz.
- 3 All DC/DC converters should be externally fused at the front end for protection.
- 4 Other input and output voltage may be available, please contact factory.
- 5 That "natural convection" is about 20LFM but is not equal to still air (0 LFM).
- 6 Specifications subject to change without notice.

Package Specifications

Mechanical Dimensions



Pin Connections

Pin	Single Output	Dual Output
1	-Vin	-Vin
2	+Vin	+Vin
4	+Vout	+Vout
5	No Pin	Common
6	-Vout	-Vout

- ▶ All dimensions in mm (inches)
- ▶ Tolerance: X.X±0.5 (X.XX±0.02)
X.XX±0.25 (X.XXX±0.01)
- ▶ Pins ±0.05(±0.002)

Physical Characteristics

- Case Size : 17.0x7.62x11.0mm (0.67x0.30x0.43 inches)
- Case Material : Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
- Pin Material : Alloy 42
- Weight : 12.9g