

FEATURES

- ▶ DIP-24 Plastic Package
- ▶ Ultra-wide 4:1 Input Ranges
- ▶ High Efficiency up to 84%
- ▶ Operating Temp. Range -40°C to +85°C
- ▶ Overload Protection
- ▶ I/O-isolation Voltage 1500VDC (opt. 3000VDC)
- ▶ Input Filter meets EN 55022,class A and FCC, level A
- ▶ 3 Years Product Warranty



PRODUCT OVERVIEW

The MINMAX MIWI06 series is a new range of high performance dc-dc converter modules with 6W output power, featuring ultra-wide 4:1 input voltage ranges and tight output voltage regulation. The product comes in a shielded DIP-24 metal package with industry standard footprint.

Excellent efficiency allows an operation temperature range of -40°C to +85°C (with derating). Standard features include overvoltage and overload protection. Typical applications for these cost optimized converters are battery powered equipment, instrumentation, datacom and industrial electronics.

Model Selection Guide

Model Number	Input Voltage	Output Voltage	Output Current		Input Current		Reflected Ripple Current	Capacitive Load	Efficiency
			Max.	Min.	@Max. Load	@No Load			
			mA	mA	mA(Typ.)	mA(Typ.)			
	VDC	VDC	mA	mA	mA(Typ.)	mA(Typ.)	mA(Typ.)	uF	% (Typ.)
MIWI06-24S033	24 (9 ~ 36)	3.3	1200	0	214	20	20	470	77
MIWI06-24S05		5	1200	0	313			470	80
MIWI06-24S12		12	500	0	298			100	84
MIWI06-24S15		15	400	0	298			100	84
MIWI06-24D05		±5	±500	0	260			100#	80
MIWI06-24D12		±12	±250	0	298			100#	84
MIWI06-24D15		±15	±200	0	298			100#	84
MIWI06-48S033	48 (18 ~ 75)	3.3	1200	0	107	10	15	470	77
MIWI06-48S05		5	1200	0	156			470	80
MIWI06-48S12		12	500	0	149			100	84
MIWI06-48S15		15	400	0	149			100	84
MIWI06-48D05		±5	±500	0	130			100#	80
MIWI06-48D12		±12	±250	0	149			100#	84
MIWI06-48D15		±15	±200	0	149			100#	84

For each output

Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Surge Voltage (1 sec. max.)	24V Input Models	-0.7	---	50	VDC
	48V Input Models	-0.7	---	100	
Start-Up Voltage	24V Input Models	7	8	9	
	48V Input Models	14	16	18	
Under Voltage Shutdown	24V Input Models	---	---	8.5	
	48V Input Models	---	---	16	
Short Circuit Input Power		---	---	3000	mW
Input Filter	All Models		Pi Filter		
Internal Power Dissipation		---	---	2500	mW

Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		---	±1.0	±2.0	%
Output Voltage Balance	Dual Output, Balanced Loads	---	±1.0	±2.0	%
Line Regulation	Vin=Min. to Max.	---	±0.1	±0.5	%
Load Regulation	Io=0% to 100%	---	±0.6	±1.2	%
Ripple & Noise (20MHz)		---	50	80	mV P-P
Ripple & Noise (20MHz)	Over Line, Load & Temp.	---	---	100	mV P-P
Transient Recovery Time	25% Load Step Change	---	300	600	uS
Transient Response Deviation		---	±3	---	%
Temperature Coefficient		---	±0.01	±0.02	%/°C
Over Load Protection	Current Limitation at 150% typ. of Iout max., foldback				
Output Short Circuit	Continuous				

General Specifications

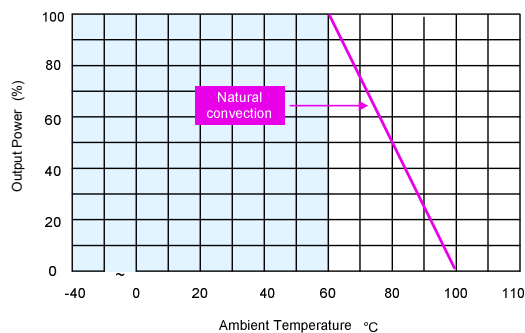
Parameter	Conditions	Min.	Typ.	Max.	Unit	
I/O Isolation Voltage Rated (note 8)	60 Seconds	Standard	1500	---	---	VDC
		Suffix H	3000	---	---	VDC
I/O Isolation Test Voltage (note 8)	Flash Tested For 1 Second	Standard	1650	---	---	VDC _{PK}
		Suffix H	3650	---	---	VDC _{PK}
I/O Isolation Resistance	500 VDC	1000	---	---	MΩ	
I/O Isolation Capacitance	100KHz, 1V	---	1000	---	pF	
Switching Frequency		---	330	---	KHz	

Input Fuse

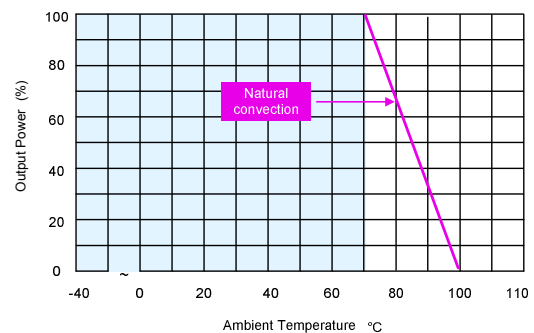
24V Input Models	48V Input Models
1500mA Slow-Blow Type	800mA Slow-Blow Type

Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Temperature Range With Derating	Ambient	-40	+85	°C
Case Temperature Range		-40	+100	°C
Storage Temperature Range		-40	+125	°C
Humidity (non condensing)		---	95	% rel. H
Cooling	Free-Air convection			
Conducted EMI	EN55022 Class A			
Lead Temperature (1.5mm from case for 10Sec.)		---	260	°C

Derating Curve


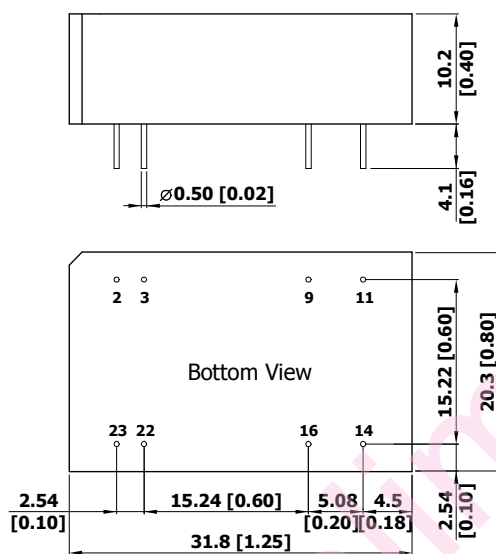
(3.3 & 5V Output)



(Other Output)

Notes

- 1 Specifications typical at Ta=+25°C, resistive load, nominal input voltage, rated output current unless otherwise noted.
- 2 Transient recovery time is measured to within 1% error band for a step change in output load of 75% to 100%
- 3 Ripple & Noise measurement bandwidth is 0-20MHz.
- 4 These power converters require a minimum output loading to maintain specified regulation.
- 5 Operation under no-load conditions will not damage these modules; however, they may not meet all specifications listed.
- 6 All DC/DC converters should be externally fused at the front end for protection.
- 7 Other input and output voltage may be available, please contact factory.
- 8 To order the converter at 3KVDC isolation, please add a suffix H (e.g. MIWI06-12S05H).
- 9 Specifications subject to change without notice.

Package Specifications
Mechanical Dimensions

Pin Connections

Pin	Single Output	Dual Output
2	-Vin	-Vin
3	-Vin	-Vin
9	No Pin	Common
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin	+Vin
23	+Vin	+Vin

NC: No Connection

- ▶ All dimensions in mm (inches)
- ▶ Tolerance: X.X±0.25 (X.XX±0.01)
X.XX±0.13 (X.XXX±0.005)
- ▶ Pin pitch tolerance: ±0.25 (0.01)

Physical Characteristics

Case Size	: 31.8X20.3X10.2mm (1.25X0.80X0.40 Inches)
Case Material	: Non-Conductive Black Plastic (flammability to UL 94V-0 rated)
Weight	: TBD