



Features

- Wide 2 : 1 Input Voltage Range(9~18V,18~36V,36~75V)
- Input / Output Isolation Voltage: 1.5K Vdc
- High Efficiency
- High Power Density
- Extended Operating Temperature Range: **-55°C** to+95°C
- Output Short Circuit Protection:
Continuous & Auto Recovery
- Over Voltage Protection: Clamp Mode
- Fixed Switching Frequency
- Input/ Output Isolation 1.5 KVdc
- Shielded Metal Case with Insulated Baseplate
- Lead Free Design, RoHS Compliant
- Industry Standard Pinout
- Customer Design Available



Description

The MUA5 Series are isolated 5W DC/DC converters. Designed with highly efficiency, allow the operating temperature range of these units to be -55°C to +95°C in a DIP package with industry-standard footprint. Further features include wide 2 : 1 input voltage range, remote on/off control, short-circuit protection and over voltage protection.

Applications

These converters are well suitable for battery operated equipment, measurement equipment, telecom, wireless network, Industry control system, everywhere where isolated, tightly regulated voltages and compact size are required.

Technical Specification All specifications are typical at nominal input, full load and 25°C unless otherwise stated.

Model Number	Input Voltage Range	Output Voltage (Vdc)	Output Current (mA)		Input Current (mA)		Eff. (2) (%)	Capacitive Load, max. (3) (uF)
			Min. Load (1)	Full. Load	No Load	Full Load		
MUA5-12S0	9~18V Nominal:12Vdc	3.3	20	1500	7	558	78	4700
MUA5-12S1		5	0	1000	7	549	80	2200
MUA5-12S2		12	0	416	18	514	85	330
MUA5-12S3		15	0	333	22	514	85	220
MUA5-12D1		±5	57	±500	6	535	82	1100
MUA5-12D2		±12	0	±208	27	520	84	100
MUA5-12D3		±15	0	±167	30	516	85	69
MUA5-24S0	18~36V Nominal:24Vdc	3.3	20	1500	4	275	79	3200
MUA5-24S1		5	0	1000	4	268	82	2200
MUA5-24S2		12	0	416	10	254	86	330
MUA5-24S3		15	0	333	12	251	87	220
MUA5-24D1		±5	57	±500	4	264	83	990
MUA5-24D2		±12	0	±208	15	254	86	122
MUA5-24D3		±15	0	±167	15	252	87	147
MUA5-48S0	36~75V Nominal:48Vdc	3.3	20	1500	1.6	142	77	3300
MUA5-48S1		5	0	1000	1.7	134	82	2200
MUA5-48S2		12	0	416	6	129	85	220
MUA5-48S3		15	0	333	7	127	86	147
MUA5-48D1		±5	57	±500	22	134	82	1000
MUA5-48D2		±12	0	±208	8	127	86	220
MUA5-48D3		±15	0	±167	8	127	86	13

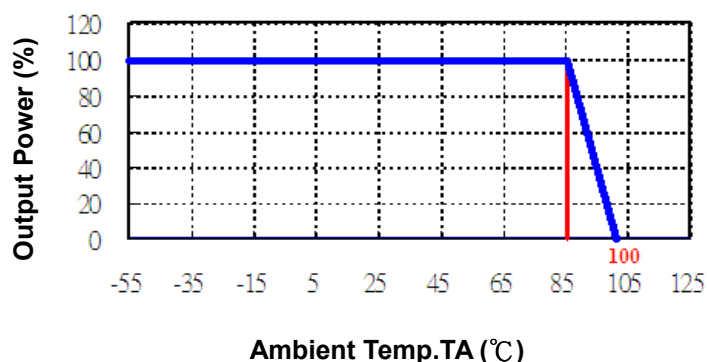


Input Specifications			
Input Voltage	12V nominal input	9-18Vdc	
	24V nominal input	18-36Vdc	
	48V nominal input	36-75Vdc	
Input filter		Pi Type	
Input surge voltage (100ms max.)	12V nominal input	25Vdc	
	24V nominal input	50Vdc	
	48V nominal input	100Vdc	
Input reflected ripple current	Nominal Vin and full load	250mA _{p-p} typ.	
Start up time	Nominal Vin and constant resistive load	400ms typ.	
Sourcing current of remote control pin	Nominal Vin	<0.2 mA	
Idle input current (at Remote OFF state)	Nominal Vin	<3 mA	
Reverse voltage protection		1.0A max	
Environmental Specifications			
Operating ambient temperature		-55°C to +95°C (with derating)	
Maximum case temperature		+100°C	
Storage temperature range		-55°C to +125°C	
Relative humidity		5% to 95% RH	
Temperature coefficient		±0.02% / °C max.	
Output Specifications			
Output power		5 Watts max.	
Voltage accuracy	Full load and nominal Vin	±1%	
Minimum load		See table	
Line regulation	LL to HL at full load	±0.5%	
	25% load to full load	Single	±0.5%
	Balanced load	Dual	±0.5%
Load Regulation	Unbalanced load 25% to 100% full load		±5%
Ripple and Noise	20MHz bandwidth	75mV _{p-p} max.	
Over voltage protection (Zener Diode Clamp)	3.3V _{out} models		3.9V
	5V _{out} models		6.2V
	12V _{out} models		15V
	15V _{out} models		18V
	24V _{out} models		27V
Capacitive load		See table	
Over load protection	% of full load at nominal input	150% typ.	
Short circuit protection		Continuous, automatic recovery	
Transient response settling time	50% load step change	300us typ.	
Transient response over shoot	di/dt=0.8A/μs	≤ ±5% of Vo	



General Specifications		
Efficiency	Nominal input	See table
Isolation voltage	Input to output	1500Vdc
Isolation resistance	500Vdc	10^9 Ohms min.
Isolation capacitance	24V nominal input	580pF typ.
Switching frequency		300kHz typ.
Reliability, calculated MTBF		1.96×10^6 Hrs
Physical Specifications		
Case material		Nickel-coated copper
Base material		Non-conductive black plastic
Potting material		Silicon rubber (UL94V-0)
Dimensions		2.0 × 1.0 × 0.4 Inch (50.8 × 25.4 × 10.2 mm)
Weight		30g (1.06oz) typ.

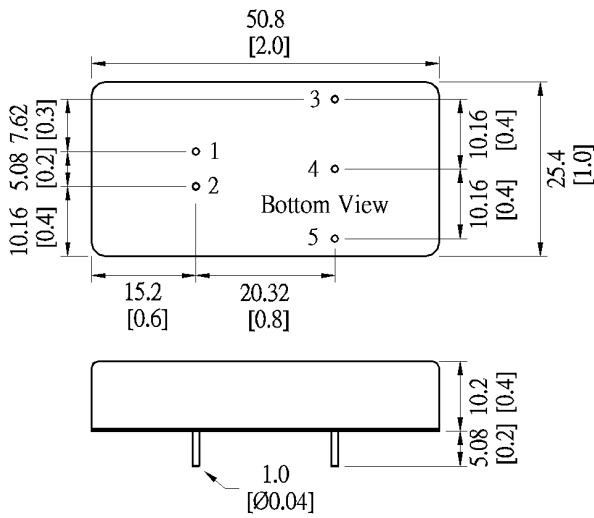
Power Derating Curve

**Note**

1. Io below this value will not damage these converters, however, they may not meet all listed specifications.
2. Typical value, tested at nominal input and full load.
3. For each output.



Mechanical Dimensions



Unit: mm [inch]
Tolerance: ±0.5 [0.02]

Pin Assignment		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout

Specifications subject to change without notice.