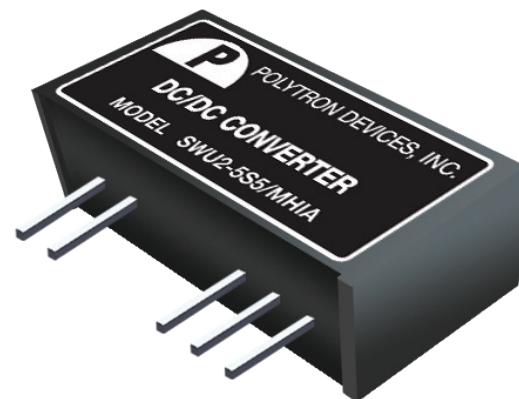


DC-DC CONVERTERS

SINGLE AND DUAL OUTPUT, UNREGULATED, SIP PACKAGE, UP TO 2 WATTS

MEDICAL APPLICATIONS

SWU2/MHIA Series



FEATURES

- 7PIN SIP Package: 0.77" × 0.39" × 0.5"
- Industry Standard Pinout
- High Isolation: 4.2KVac (6KVdc)
- High Efficiency up to 84%
- Reinforced Insulation
- Patient Leakage Current: Max 2 μ A
- Internal SMD Construction
- Operating Temperature: -40°C to +85°C
- Design Meets EN60601-1, ANSI/AAMI ES60601-1
- RoHS Compliant

SELECTION GUIDE

Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

Input Voltage Vdc	Output Voltage Vdc	Output Current mA	Max. Capacitive Load* μ F	Efficiency %	Model Number
5	5	400	1000	77	SWU2-5S5/MHIA
5	12	167	470	79	SWU2-5S12/MHIA
5	15	133	470	79	SWU2-5S15/MHIA
12	5	400	1000	77	SWU2-12S5/MHIA
12	12	167	470	80	SWU2-12S12/MHIA
12	15	133	470	82	SWU2-12S15/MHIA
24	5	400	1000	79	SWU2-24S5/MHIA
24	12	167	470	82	SWU2-24S12/MHIA
24	15	133	470	84	SWU2-24S15/MHIA
5	\pm 5	\pm 200	470	78	SWU2-5-5/MHIA
5	\pm 9	\pm 111	470	78	SWU2-5-9/MHIA
5	\pm 12	\pm 84	220	78	SWU2-5-12/MHIA
5	\pm 15	\pm 67	220	80	SWU2-5-15/MHIA
12	\pm 5	\pm 200	470	78	SWU2-12-5/MHIA
12	\pm 9	\pm 111	470	82	SWU2-12-9/MHIA
12	\pm 12	\pm 84	220	82	SWU2-12-12/MHIA
12	\pm 15	\pm 67	220	80	SWU2-12-15/MHIA
24	\pm 5	\pm 200	470	79	SWU2-24-5/MHIA
24	\pm 9	\pm 111	470	81	SWU2-24-9/MHIA
24	\pm 12	\pm 84	220	82	SWU2-24-12/MHIA
24	\pm 15	\pm 67	220	81	SWU2-24-15/MHIA

* The capacitive loads of positive and negative outputs are identical.

SWU2/MHIA SERIES

Input Specifications		Output Specifications	
Voltage type	5 Min. 12 Typ. 24 Max.	$V_o, I_o \text{ Nom}$	
Filter	Capacitor		
		Voltage tolerance, %	±5 Max. 100% full load
		Line regulation, %	1.2 Typ. For 1% of V_{in}
		Load regulation, %	20 Max. 5V (10% - 100% F.L.)
			15 Max. 9V (10% - 100% F.L.)
			15 Max. 12V (10% - 100% F.L.)
			15 Max. 15V (10% - 100% F.L.)
		Ripple and noise, mVp-p	100 Typ., 150 Max. 20MHz bandwidth
		Output short circuit, S	3 Max. Supply voltage must be discontinued at the end of short circuit duration.

General Specifications			
Isolation resistance, MΩ	500Vdc		1000 Min.
Isolation capacitance, pF	Input-output	100KHz/0.1V	5 Typ.
Switching frequency, kHz	Full load, nominal input		100 Typ.

Environmental Specifications			
Operating temperature, °C		-40 Min.	+85 Max.
Storage temperature, °C		-55 Min.	+125 Max.
Humidity, %	Non-condensing		95 Max.
Cooling	Free air convection		

Physical Specifications	
Design meet safety standard	IEC/UL/EN60950-1, UL:E193009, CB:UL(Demko)
Transformer creepage, mm	5 Min.
Transformer clearance, mm	5 Min.
PCB creepage and clearance, mm	5.5 Min.
Case material	DAP
Weight, g	4.0 Typ.
Dimensions, inch (mm)	0.77 × 0.39 × 0.5 (19.5 × 9.8 × 12.5)
MTBF, hours	MIL-HDBK-217F@25°C, 3500000 Min.

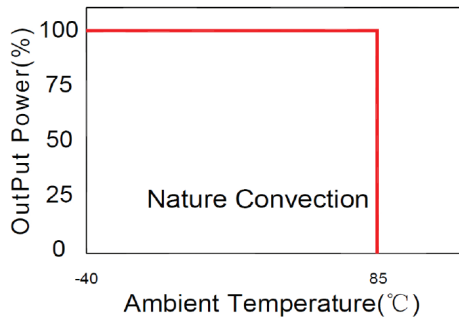
Note:

- SWU2/MHIA series meets reinforced insulation requirements. This series is specially designed for applications that require compact size, high isolation and low leakage current power. They are widely used in medical, electricity, IGBT driver, etc.
- This series is ideally suited for the following applications:
 - The voltage of the input power supply is stable (voltage variation: ±10% V_{in}).
 - The isolation is necessary between input and output (isolation voltage ≤4200Vac or 6000Vdc).
 - The output voltage requirement of line regulation and ripple & noise is not as high.
- For further information, please contact Polytron Devices.

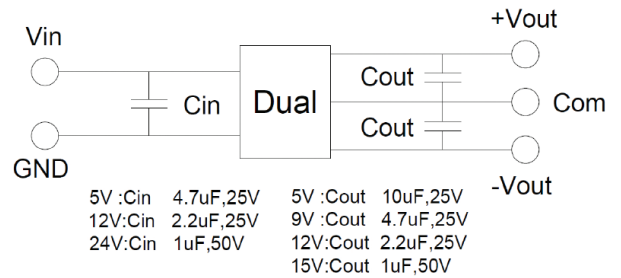
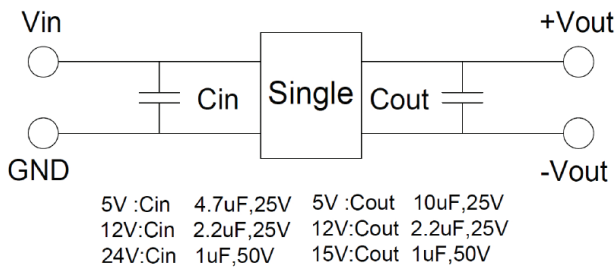
CAUTION: This power module is not internally fused. An input line fuse must always be used.

SWU2/MHIA SERIES

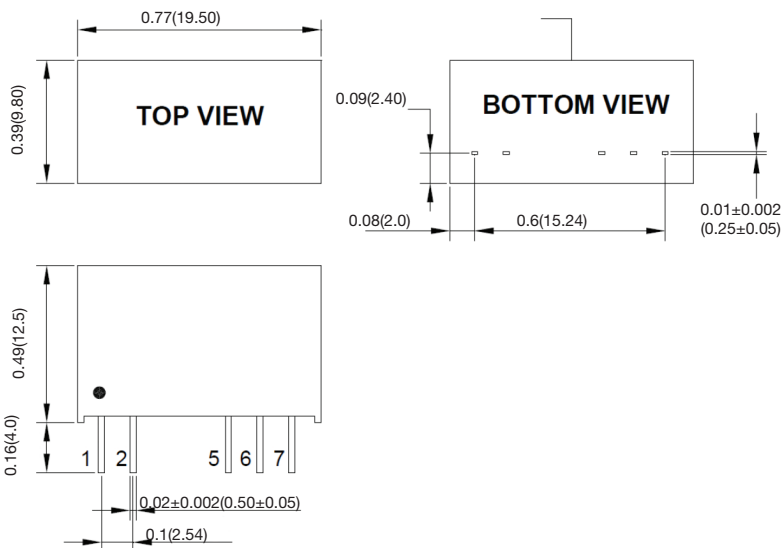
Temperature Derating Curve



Recommended Test Circuit



Mechanical Drawing



PIN CONNECTION

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Com
7	+Vout	+Vout

1. All dimensions in inches (mm)
2. Tolerance: ±0.25
3. Pin pitch tolerance: ±0.25
4. Pin dimension tolerance: ±0.25