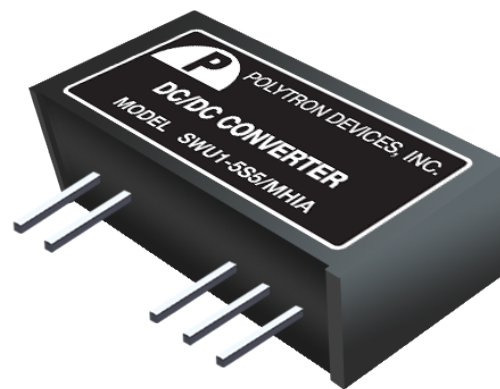


DC-DC CONVERTERS

SINGLE AND DUAL OUTPUT, UNREGULATED, SIP7 PACKAGE, UP TO 1 WATT

MEDICAL APPLICATIONS

SWU1/MHIA Series



FEATURES

- 7PIN SIP Package: 0.77" × 0.39" × 0.5"
- Industry Standard Pinout
- 4.2KVac / 6KVdc Isolation
- High Efficiency up to 81%
- Reinforced Insulation
- Patient Leakage Current: Max 2 μ A
- Unregulated Output Types
- 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.

Output Voltage Vdc	Output Current mA	Max. Capacitive Load* μ F	Efficiency %		Model Number
			Min.	Typ.	
5	200	1000	74	78	SWU1-5S5/MHIA
12	84	470	72	76	SWU1-5S12/MHIA
15	67	470	72	76	SWU1-5S15/MHIA
5	200	1000	73	77	SWU1-12S5/MHIA
12	84	470	77	81	SWU1-12S12/MHIA
15	67	470	77	81	SWU1-12S15/MHIA
5	200	1000	72	76	SWU1-24S5/MHIA
12	84	470	74	78	SWU1-24S12/MHIA
15	67	470	74	78	SWU1-24S15/MHIA
\pm 5	\pm 100	470	74	78	SWU1-5-5/MHIA
\pm 9	\pm 56	470	76	80	SWU1-5-9/MHIA
\pm 12	\pm 42	220	70	74	SWU1-5-12/MHIA
\pm 15	\pm 34	220	72	76	SWU1-5-15/MHIA
\pm 5	\pm 100	470	73	77	SWU1-12-5/MHIA
\pm 9	\pm 56	470	76	80	SWU1-12-9/MHIA
\pm 12	\pm 42	220	69	73	SWU1-12-12/MHIA
\pm 15	\pm 34	220	71	75	SWU1-12-15/MHIA
\pm 5	\pm 100	470	71	75	SWU1-24-5/MHIA
\pm 9	\pm 56	470	75	79	SWU1-24-9/MHIA
\pm 12	\pm 42	220	72	76	SWU1-24-12/MHIA
\pm 15	\pm 34	220	72	76	SWU1-24-15/MHIA

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

SWU1/MHIA SERIES

Input Specifications			Output Specifications		
Voltage type	±10 Max.	Vo, Io Nom	Voltage tolerance, %	±5 Max.	100% full load
Filter	Capacitor		Line regulation, %	1.2 Typ.	For 1% of Vin
			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	70 Typ., 120 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.

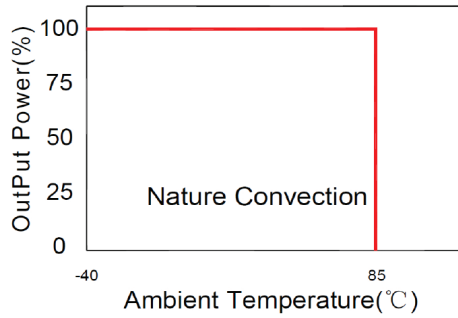
Note:

- SWU1/MHIA series meets reinforced insulation requirements. They are specially designed for applications that require compact size, high isolation, low isolation capacitor and low leakage current power. They are widely used in medical, electricity, IGBT driver, etc.
- They are suitable for the following applications:
 - The voltage of the input power supply is stable (voltage variation: ±10% Vin).
 - 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.

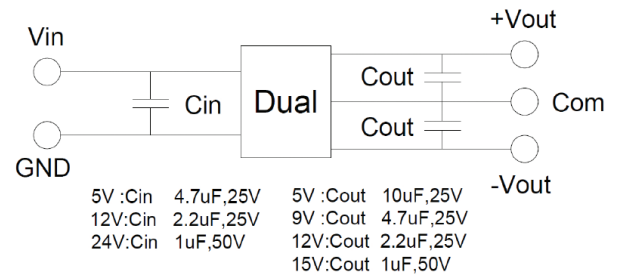
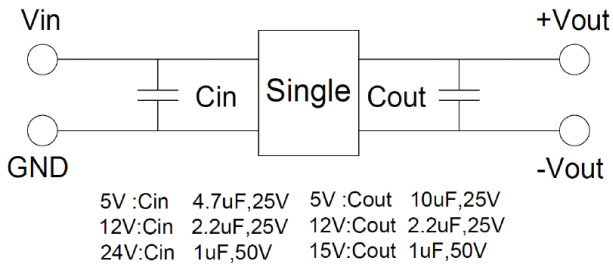
CAUTION: This power module is not internally fused. An input line fuse must always be used.

SWU1/MHIA SERIES

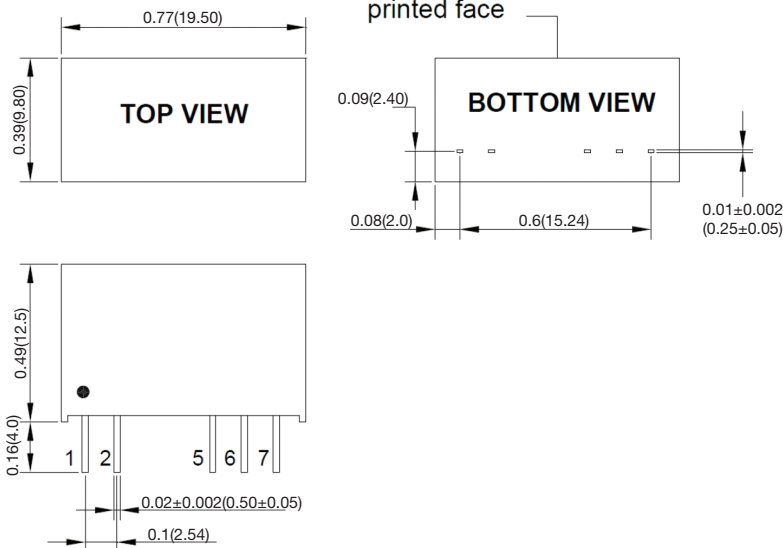
Derating Curve



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

- All dimensions in inches (mm)
- Tolerance: ±0.25
- Pin pitch tolerance: ±0.25
- Pin dimension tolerance: ±0.25