



Switchy 5W Medical

By Tech Power electronics

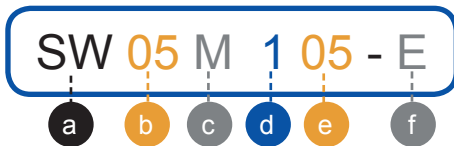
Features



- AC/DC power module for PCB mounting
- Universal input 85V~265Vac (on request 305Vac) or 120~370Vdc
- High efficiency
- Low ripple and noise
- No load power consumption < 300mW - Compliant IEC62301
- Protection for short circuit, overload and over temperature
- EMC and safety standards: IEC60950-1, IEC60601-1 approved
- Medical safety approved (2xMOPP between Primary to Secondary)
- Isolation class II
- 4kVac input / output dielectric
- No external components required
- Warranted 2 years
- MTBF > 300,000 hours at +25°C



Part number



- a** SWITCHY
- b** Power (W)
- c** Medical
- d** Number of outputs
- e** Output voltage (V)
- f** Extended Temperature

Electrical specifications

Model	SW05M105	SW05M109	SW05M112	SW05M115	SW05M124	
Output	DC Voltage	5V	9V	12V	15V	24V
	Rated Current	0 - 1A	0 - 0.55A	0 - 0.45A	0 - 0.34A	0 - 0.21A
	Peak Current (2)	1.6A max	0.8A max	0.6A max	0.5A max	0.25A max
	Rated Power (6)	5W	5W	5W	5W	5W
	Ripple & Noise	100mV	90mV	70mV	120mV	70mV
	Voltage Tolerance (6)	±5%	±5%	±2%	±2%	±2%
	No load Regulation	±1%	±1%	±1%	±1%	±1%
	Load Regulation	±1%	±1%	±1%	±1%	±1%
	Setup Time (4) / Falling Time	6ms	11ms	19ms	19ms	30ms
	Hold up time (3)	9ms	17ms	29ms	32ms	47ms
Input	Voltage Range	85V~265Vac (on request 305Vac) or 120~370Vdc				
	Frequency Range	47Hz - 440Hz				
	Efficiency (1)	73%	77%	79%	77%	78%
	Ac Current (typ): 115V 230V	<120mA <80mA				
	Inrush Current (typ) Cold Start	<20A / 230 Vac				
	No load power consumption (5)	<230mW	<160mW	<160mW	<170mW	<190mW
	Leakage Current	<100µA at 264V				
Protection	Over Current	1.75A	1A	0.7A	0.55A	0.3A
	Over Temperature	Thermal Shutdown 150°C detected by PWM control				

Note:

All parameters not specially mentioned are measured at 230Vac input, full load, 25°C ambient temperature and humidity <75%.

The output Ripple was measured with a 1µF electrolytic and a 0,1µF ceramic capacitor.

(1) Average value at full load on the input voltage range 85Vac to 305Vac.

(2) The Switchy can not deliver continuously over current. Permanent over current would cause permanent damages to the device.

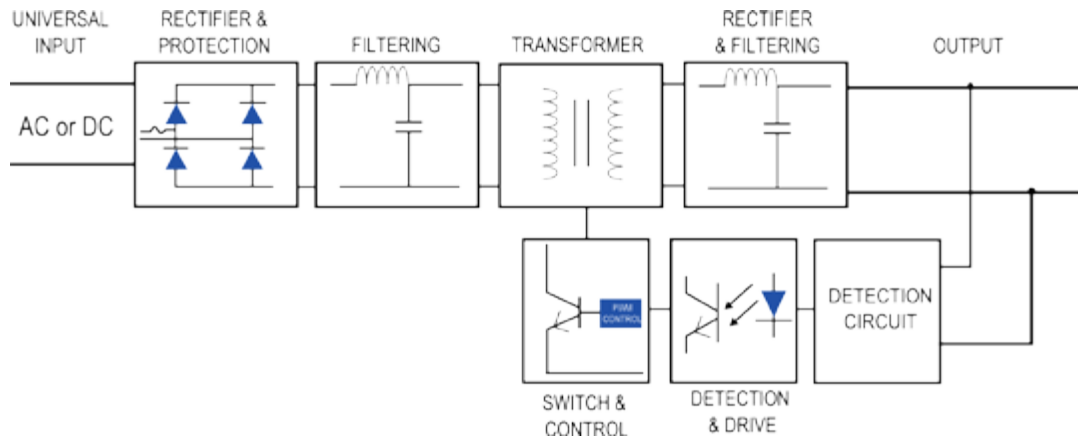
(3) Time for the output to reach 0V when input voltage (at 85Vac) is removed.

(4) Time for the output to reach 90% of its nominal value when input voltage is applied.

(5) Value measured at 230Vac

(6) On the temperature range -40°C to +85°C

Functional block diagram



Safety & EMC

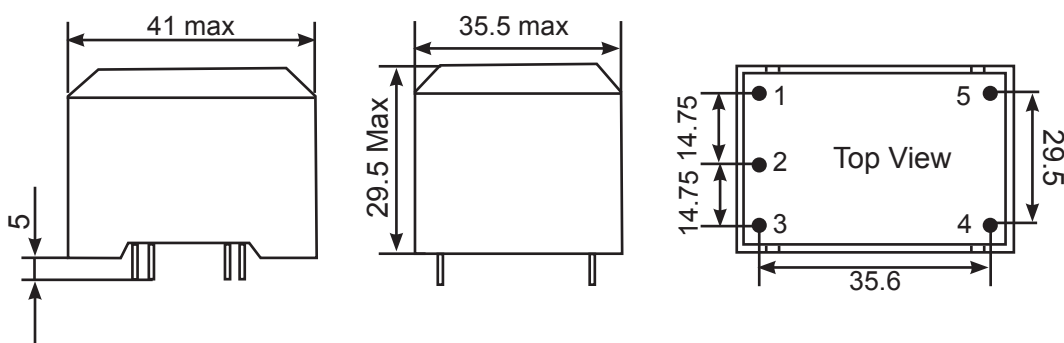
Safety Standards	IEC60950, IEC60601-1 approved
Withstand Voltage	Input / Output: 4kVAC
Insulation Resistance	Input / Output: 100M ohms / 500VDC
EMI Conduction & Radiation	EN55014-1, EN55014-2, IEC62301, EN55022 level B
Harmonic current	EN61000-3-2, 3
EMS Immunity	EN61000-4-2, level 3 Perf Criteria A EN61000-4-3, 10V/m 80% mod Perf Criteria A EN61000-4-4, level 3 Perf Criteria A EN61000-4-5, installation Class 3 Perf Criteria A EN61000-4-6, 10 Vrms Perf Criteria A EN61000-4-8, 10A/m Perf Criteria A EN61000-4-11, 30% for 10ms, 60% for 100ms, 100% for 5000ms, Perf Criteria A,B,B

Environment

Working Temperature	-25°C to +85°C (on request -40°C)
Cooling	Convection-cooled
Working Humidity	95% rel Hmax non condensing
Storage Temperature and Humidity	-45°C to +85°C, 95% rel Hmax
Operating Altitude	3048m, 10000ft

Mechanical Specifications & Pin Out

Weight: 60 g



Pin	Description
1	Line
2	Earth
3	Neutral
4	-Vout
5	+Vout

Unit: mm unless otherwise specified, all tolerances are ± 0.5
PCB drilling diameter: $\varnothing 1.3\text{mm}$