



1 WATT SINGLE & DUAL OUTPUT

Unregulated
SIP Package

DC/DC Converters



FEATURES

- 1 Watt Unregulated Output Power
- Miniature Single – Inline Package (SIP)
- 3000Vdc Input/Output Isolation
- Single and Dual Output
- High Efficiency (Up to 80%)

SPU1 Series

Specifications

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

INPUT

Input Voltage Range

5V nominal input	4.5 - 5.5 Vdc
12V nominal input	10.8 - 13.2 Vdc
15V nominal input	13.5 - 16.5 Vdc
24V nominal input	21.6 - 26.4 Vdc

Input FilterCapacitor

OUTPUT

Output Power	1 Watt max.
Voltage Accuracy (Full Load and Nominal Vin)	±5%
Minimum Load *	10% fo FL
Line Regulation LL to HL at Full Load	1.3%/1% of Vin
Load Regulation (20% to 100% FL)	(5V output...±10%) Others...±8%
Ripple and Noise (20 MHz Bandwidth)	100mV p-p
Temperature Coefficient	±0.1%/°C, max.
Short Circuit Protection	Short term

GENERAL

Efficiency	See Table
Isolation Voltage (Input to Output) Standard	1000 Vdc min. Suffix-HI...3000 Vdc min.
Isolation Resistance	10 ⁹ Ohms, min.
Isolation Capacitance	30pF, max.
Switching Frequency	60KHz, min.
Safety Standard	IEC60950, UL60950, EN60950 (Built to meet)
Case Material	Non-Conductive Black Plastic
Base Material	None
Potting Material	Epoxy (UL94-V0)
Dimensions	0.77" x 0.24" x 0.40" inches (19.6 x 6.0 x 10.2 mm)
Weight	2.0 g. (0.071 oz.)
MTBF	1.471 x 10 ⁷ Hours

ENVIRONMENTAL

Operating Temperature Range	-25°C to +85°C (with derating)
Storage Temperature Range	-55°C to +105°C
Thermal Shock	MIL-STD-810D
Vibration	10~55Hz, 2G, 30minutes along X, Y and Z
Relative Humidity	5% to 95% RH

* The SPU1 Series requires a 10% minimum load on the output to maintain specified regulation. Operation under no-load condition will not damage these devices. However, they may not meet all listed specifications.

Selection Guide

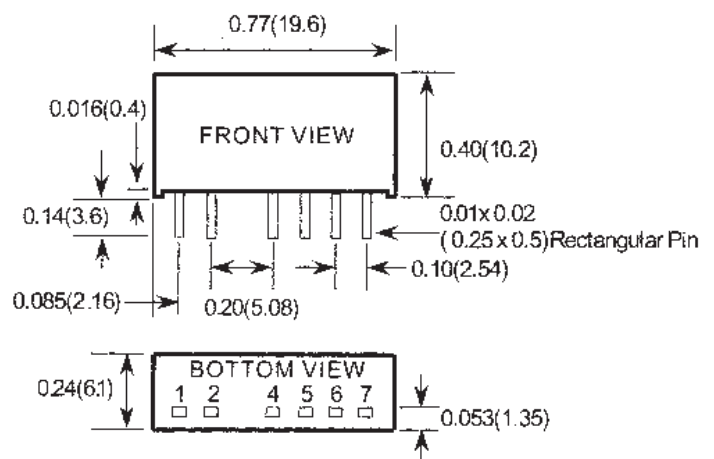
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	Input Voltage Nominal (Range) (Vdc)	Output Voltage (Vdc)	Output Current (mA)	Efficiency %	Model Number	Case
SINGLE OUTPUT	4.5 - 5.5	5	200	71	SPU1-5S5	SIP
	4.5 - 5.5	12	83	78	SPU1-5S12	SIP
	4.5 - 5.5	15	67	78	SPU1-5S15	SIP
	10.8 - 13.2	5	200	73	SPU1-12S5	SIP
	10.8 - 13.2	12	83	79	SPU1-12S12	SIP
	10.8 - 13.2	15	67	79	SPU1-12S15	SIP
	13.5 - 16.5	5	200	73	SPU1-15S5	SIP
	13.5 - 16.5	12	83	79	SPU1-15S12	SIP
	13.5 - 16.5	15	67	79	SPU1-15S15	SIP
	21.6 - 26.4	5	200	71	SPU1-24S5	SIP
	21.6 - 26.4	12	83	76	SPU1-24S12	SIP
	21.6 - 26.4	15	67	78	SPU1-24S15	SIP
DUAL OUTPUT	4.5 - 5.5	±5	±100	72	SPU1-5-5	SIP
	4.5 - 5.5	±12	±42	78	SPU1-5-12	SIP
	4.5 - 5.5	±15	±33	78	SPU1-5-15	SIP
	10.8 - 13.2	±5	±100	74	SPU1-12-5	SIP
	10.8 - 13.2	±12	±42	80	SPU1-12-12	SIP
	10.8 - 13.2	±15	±33	80	SPU1-12-15	SIP
	13.5 - 16.5	±5	±100	74	SPU1-15-5	SIP
	13.5 - 16.5	±12	±42	80	SPU1-15-12	SIP
	13.5 - 16.5	±15	±33	80	SPU1-15-15	SIP
	21.6 - 26.4	±5	±100	72	SPU1-24-5	SIP
	21.6 - 26.4	±12	±42	78	SPU1-24-12	SIP
	21.6 - 26.4	±15	±33	79	SPU1-24-15	SIP

Mechanical Specifications

STANDARD		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
4	-OUTPUT	-OUTPUT
5	NC	COMMON
6	+OUTPUT	+OUTPUT

Suffix HI Models (3000Vdc isolation)		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
5	-OUTPUT	-OUTPUT
6	NC	COMMON
7	+OUTPUT	+OUTPUT



1. All Dimensions are in inches (mm)
2. Pin pitch tolerance $\pm 0.014 (0.35)$