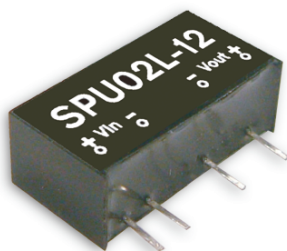




2W DC-DC Unregulated Single Output Converter

SPU02 series



■ Features :

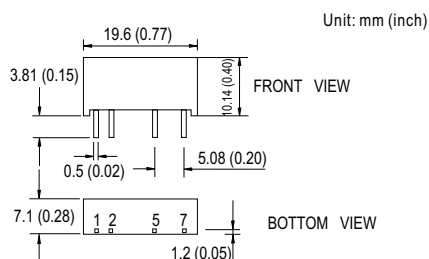
- 3000VDC I/O isolation
- Internal SMD technology
- Built-in EMI filter
- Protection: Short circuit
- Cooling by free air convection
- Non-conductive plastic case
- Single in line package
- 100% full load burn-in test
- Low cost / High reliability
- 2 years warranty



SPECIFICATION

ORDER NO.	SPU02L-05	SPU02M-05	SPU02N-05	SPU02L-12	SPU02M-12	SPU02N-12	SPU02L-15	SPU02M-15	SPU02N-15
OUTPUT	DC OUTPUT VOLTAGE	5V			12V			15V	
	CURRENT RANGE	0 ~ 400mA			0 ~ 167mA			0 ~ 133mA	
	EFFICIENCY (Typ.)	77%	79%	77%	80%	81%	80%	81%	82%
	RATED POWER	2W							
	RIPPLE & NOISE (max.) Note.2	100mVp-p							
	LINE REGULATION Note.3	±1.2% for 1% input variation							
	LOAD REGULATION Note.4	±8.0%							
	VOLTAGE ACCURACY	±2.0%							
INPUT	SWITCHING FREQUENCY	100KHz min.							
	VOLTAGE RANGE	4.5 ~ 5.5V	10.8 ~ 13.2V	21.6 ~ 26.4V	4.5 ~ 5.5V	10.8 ~ 13.2V	21.6 ~ 26.4V	4.5 ~ 5.5V	10.8 ~ 13.2V
	NORMAL VOLTAGE	5V	12V	24V	5V	12V	24V	5V	12V
	INPUT CURRENT	Full load	520mA	214mA	107mA	520mA	214mA	107mA	520mA
		No load	60mA	20mA	15mA	60mA	20mA	15mA	60mA
PROTECTION	FILTER	Capacitor type							
	PROTECTION	Fuse recommended							
	OVERLOAD	Momentary Protection type : Broken							
ENVIRONMENT	WORKING TEMP.	-25 ~ +71°C (Refer to output load derating curve)							
	WORKING HUMIDITY	20% ~ 90% RH non-condensing							
SAFETY & EMC	STORAGE TEMP., HUMIDITY	-25 ~ +105°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)							
	VIBRATION	10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes							
	WITHSTAND VOLTAGE	I/P-O/P: 3KVDC							
	ISOLATION RESISTANCE	I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH							
OTHERS	ISOLATION CAPACITANCE	80pF max.							
	EMI CONDUCTION & RADIATION	Compliance to EN55022 Class B, FCC part 15 Class B							
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8, light industry level, criteria A							
MTBF	MTBF	700khrs min. MIL-HDBK-217F(25°C)							
	DIMENSION	19.6*7.1*10.2mm or 0.77**0.28**0.40" inch (L*W*H)							
	WEIGHT	2.3g							

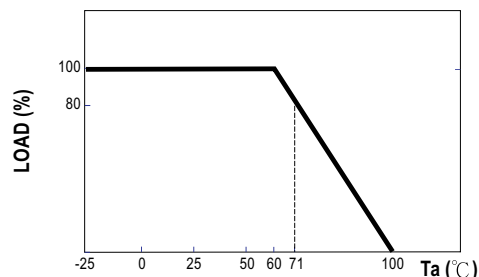
■ Mechanical Specification



■ Pin Configuration

Pin No.	Output
1	+Vin
2	-Vin
5	-Vout
7	+Vout

■ Derating Curve



NOTE

1. All parameters are specified at normal input, rated load, 25°C 70% RH ambient.
2. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uF & 47uF capacitor.
3. Line regulation is measured from low line to high line at rated load.
4. Load regulation is measured from 10% to 100% rated load.

Model : SPU02N-05 2W
5V / 400mA

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE ACCURACY	-2%~+2%	I/P:24VDC O/P:FULL LOAD Ta:25°C	1.48%	P
2	RIPPLE & NOISE	100mVp-p	I/P:24VDC O/P:FULL LOAD Ta:25°C	91mV	P
3	LINE REGULATION	-12%~+12%	I/P:21.6VDC~26.4VDC O/P:FULL LOAD Ta:25°C	-11.2%~+11.6%	P
4	LOAD REGULATION	-8%~+8%	I/P:24VDC O/P:20%~FULL LOAD Ta:25°C	-2.9%~+2.43%	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	EFFICIENCY	78% (Typ)	I/P:24VDC O/P:FULL LOAD Ta:25°C	82.3%	P
2	DC CURRENT	107mA FULL LOAD 10mA NO LOAD	I/P:24VDC O/P:FULL LOAD Ta:25°C	102.6 mA / FULL LOAD 8.4 mA / NO LOAD	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT								
1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 3HRS I/P:24VDC O/P:FULL LOAD Ta=24.2℃ 2. ROOM AMBIENT BURN-IN : 21HRS I/P:24VDC O/P:FULL LOAD Ta=77℃ <table><tr><td>Position</td><td>CENTER</td><td>1</td><td>2</td></tr><tr><td>CASE</td><td>SPU02N-05</td><td>50.3℃</td><td>103.3℃</td></tr></table>			Position	CENTER	1	2	CASE	SPU02N-05	50.3℃	103.3℃	P
Position	CENTER	1	2										
CASE	SPU02N-05	50.3℃	103.3℃										



SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:1KVDC/min	I/P-O/P:3KVDC/min Ta:25°C	I/P-O/P:0.02mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P:500VDC Ta:25°C	I/P-O/P:>100MΩ NO DAMAGE	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2007.3.7	SPU02N-05	PASS	PETER CHENG	MAX LIN