



■ Features :

- 1000VDC I/O isolation
- Internal SMD technology
- Built-in EMI filter
- Cooling by free air convection
- Non-conductive plastic case
- Single in line package
- DIP package is available
- 100% burn-in test
- Low cost / High reliability
- Approvals: FCC / CE
- 2 years warranty



SELECTION GUIDE

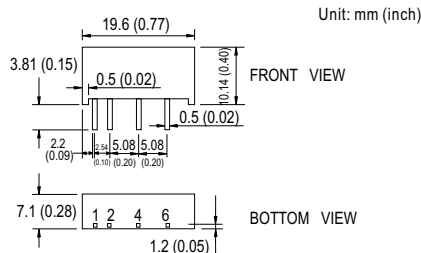
ORDER NO.	SPR01L-05	SPR01M-05	SPR01N-05	SPR01O-05	SPR01L-09	SPR01M-09	SPR01N-09	SPR01O-09
DC OUTPUT VOLTAGE	5V				9V			
OUTPUT CURRENT RANGE	0 ~ 200mA				0 ~ 100mA			
EFFICIENCY	57%	65%	62%	62%	57%	60%	60%	56%

ORDER NO.	SPR01L-12	SPR01M-12	SPR01N-12	SPR01O-12	SPR01L-15	SPR01M-15	SPR01N-15	SPR01O-15
DC OUTPUT VOLTAGE	12V				15V			
OUTPUT CURRENT RANGE	0 ~ 84mA				0 ~ 67mA			
EFFICIENCY	58%	60%	60%	58%	60%	62%	60%	58%

SPECIFICATION

OUTPUT	RATED POWER	1W							
	RIPPLE & NOISE (max.) Note.2	100mVp-p							
	LINE REGULATION	±1.0%							
	LOAD REGULATION Note.3	±1.0%							
	VOLTAGE ACCURACY	±2.0%(Typ.) ±3.0%(max.)							
INPUT	SWITCHING FREQUENCY	50KHz min.							
	VOLTAGE RANGE	4.5 ~ 5.5V	10.8 ~ 13.2V	21.6 ~ 26.4V	43.2 ~ 52.8V	4.5 ~ 5.5V	10.8 ~ 13.2V	21.6 ~ 26.4V	43.2 ~ 52.8V
	NORMAL VOLTAGE	5V	12V	24V	48V	5V	12V	24V	48V
	INPUT CURRENT	Full load	350mA	141mA	67mA	35mA	350mA	141mA	67mA
		No load	32mA	15mA	10mA	6mA	32mA	15mA	6mA
PROTECTION (Note. 4)	FILTER	Capacitor type							
	PROTECTION	Fuse recommended							
	OVERLOAD	Momentary Protection type : Broken							
ENVIRONMENT	SHORT CIRCUIT	Momentary Protection type : Broken							
	WORKING TEMP.	-25 ~ +71°C (Refer to output load derating curve)							
	WORKING HUMIDITY	20% ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-25 ~ +105°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03% / °C (0 ~ 50°C)							
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes							
	WITHSTAND VOLTAGE	I/P-O/P:1KVDC							
	ISOLATION RESISTANCE	I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH							
	ISOLATION CAPACITANCE	80pF max.							
	EMI CONDUCTION & RADIATION	Compliance to EN55022 Class B, FCC part 15 Class B							
OTHERS	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8, light industry level, criteria A							
	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							

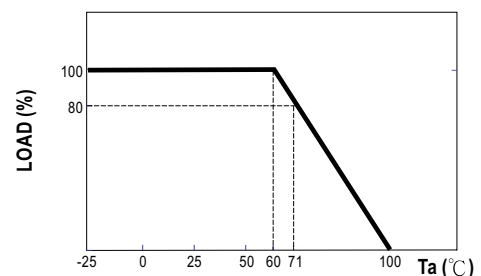
■ Mechanical Specification



■ Pin Configuration

Pin No.	Output
1	+Vin
2	-Vin
4	-Vout
6	+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.Load regulation is measured from 10% to 100% rated load.
- 4.Please prevent the converter from operating in overload or short circuit condition for more than 30 seconds.

Model : SPR01N-15 1W DC-DC Single Output Converter
V1 : 15V / 0~67mA

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE ACCURACY	-2%~+2% (Max)	I/P:24VDC O/P:50% LOAD Ta:25°C	+0.4%	P
2	RIPPLE & NOISE	100mVp-p (Max)	I/P:24VDC O/P:FULL LOAD Ta:25°C	10mV	P
3	LINE REGULATION	-1%~+1% (Max)	I/P:21.6VDC~26.4VDC O/P:FULL LOAD Ta:25°C	-0.2%~+0.2%	P
4	LOAD REGULATION	-1%~+1% (Max)	I/P:24VDC O/P:MIN~FULL LOAD Ta:25°C	-0.1%~+0.1%	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	DC VOLTAGE RANGE	21.6VDC~26.4VDC (Typ)	I/P:TESTING O/P:FULL LOAD Ta:25°C	20.1V~26.4V	P
2	EFFICIENCY	63% (Typ)	I/P:24 VDC O/P:FULL LOAD Ta:25°C	63.5%	P
3	DC CURRENT	67mA (Max)	I/P:24VDC O/P:FULL LOAD Ta:25°C	66mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	YES	I/P:24VDC O/P:TESTING Ta:25°C	191% Hiccup Mode Reset Auto Recovery	P
2	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P:24VDC O/P:FULL LOAD Ta:25°C	NO DAMAGE Hiccup Mode Reset Auto Recovery	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
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1	TEMPERATURE RISE TEST	1. ROOM AMBIENT BURN-IN : 14HRS I/P:24VDC O/P:FULL LOAD Ta=25°C	<table><tr><td>Position</td><td>P/N</td><td>TEMP Ta=25°C</td></tr><tr><td>CASE</td><td>SPR01N-15</td><td>40.3°C</td></tr></table>	Position	P/N	TEMP Ta=25°C	CASE	SPR01N-15	40.3°C	P
Position	P/N	TEMP Ta=25°C								
CASE	SPR01N-15	40.3°C								

SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P:1KVDC/min	I/P-O/P:1KVDC/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:30GΩ NO DAMAGE	P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2003.8.28	SPR01N-15	PASS	FRANK.CHEN	MAX LIN