



- 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
  - 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%       |

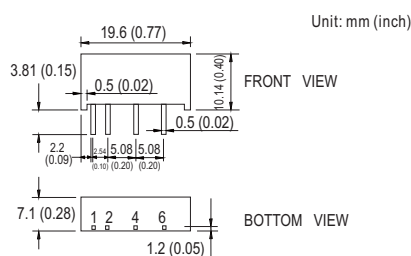
  

|                      |           |           |           |           |           |           |           |           |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| ORDER NO.            | SPR01L-12 | SPR01M-12 | SPR01N-12 | 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.) |              |              |              |      |
|                      | SWITCHING FREQUENCY          | 50KHz min.   |              |              |              |             |              |              |              |      |
| INPUT                | 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         | 35mA |
|                      |                              | No load  | 32mA         | 15mA         | 10mA         | 6mA         | 32mA         | 15mA         | 10mA         | 6mA  |
|                      | FILTER                       | Capacitor type   |              |              |              |             |              |              |              |      |
| PROTECTION           | Fuse recommended             |  |              |              |              |             |              |              |              |      |
| PROTECTION (Note. 4) | OVERLOAD                     | >110% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed               |              |              |              |             |              |              |              |      |
|                      | SHORT CIRCUIT                | All output equipped with short circuit<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |              |              |              |             |              |              |              |      |
| ENVIRONMENT          | WORKING TEMP.                | -25 ~ +71°C (Refer to "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)   |              |              |              |             |              |              |              |      |
|                      | VIBRATION                    | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes   |              |              |              |             |              |              |              |      |
| SAFETY & EMC         | SAFETY STANDARDS             | EAC TP TC 004 approved   |              |              |              |             |              |              |              |      |
|                      | WITHSTAND VOLTAGE            | I/P-O/P: 1KVDC   |              |              |              |             |              |              |              |      |
|                      | ISOLATION RESISTANCE         | I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH  |              |              |              |             |              |              |              |      |
|                      | ISOLATION CAPACITANCE        | 80pF max.  |              |              |              |             |              |              |              |      |
|                      | EMC EMISSION                 | Compliance to EN55032 Class B, FCC part 15 Class B, EAC TP TC 020  |              |              |              |             |              |              |              |      |
|                      | EMC IMMUNITY                 | Compliance to EN61000-4-2,3,4,5,6,8, light industry level, criteria A, EAC TP TC 020   |              |              |              |             |              |              |              |      |
| OTHERS               | 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   |              |              |              |             |              |              |              |      |

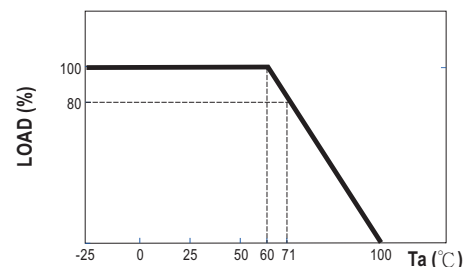
**Mechanical Specification**



**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.

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