



#### ■ Features :

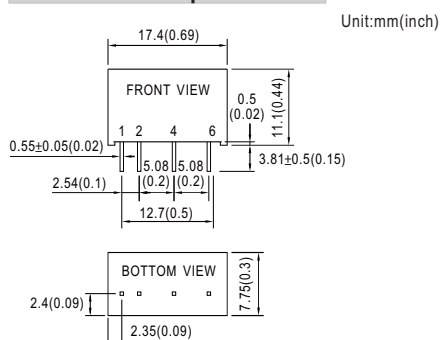
- Single in line package
- 2:1 wide input range
- 1500VDC I/O isolation
- Built-in EMI filter without external components
- Protections: Short circuit / Overload
- Cooling by free air convection
- 100% full load burn-in test
- Low cost / High reliability
- 2 years warranty



#### SPECIFICATION

| ORDER NO.               |                              | SPA01A-05 | SPA01B-05                                                                           | SPA01C-05 | SPA01A-12 | SPA01B-12 | SPA01C-12 | SPA01A-15 | SPA01B-15 | SPA01C-15 |     |
|-------------------------|------------------------------|-----------|-------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|
| OUTPUT                  | DC VOLTAGE                   |           | 5V                                                                                  |           |           | 12V       |           |           | 15V       |           |     |
|                         | CURRENT RANGE                |           | 20 ~ 200mA                                                                          |           |           | 8 ~ 83mA  |           |           | 6 ~ 67mA  |           |     |
|                         | RATED POWER                  |           | 1W                                                                                  |           |           |           |           |           |           |           |     |
|                         | RIPPLE & NOISE (max.) Note.2 |           | 60mVp-p                                                                             |           |           | 80mVp-p   |           |           | 80mVp-p   |           |     |
|                         | LINE REGULATION Note.3       |           | ±0.5%                                                                               |           |           |           |           |           |           |           |     |
|                         | LOAD REGULATION Note.4       |           | ±0.5%                                                                               |           |           |           |           |           |           |           |     |
|                         | VOLTAGE ACCURACY             |           | ±2.0%                                                                               |           |           |           |           |           |           |           |     |
|                         | SWITCHING FREQUENCY          |           | 100KHz min.                                                                         |           |           |           |           |           |           |           |     |
| INPUT                   | VOLTAGE RANGE                |           | A: 9 ~ 18VDC B: 18 ~ 36VDC C: 36 ~ 75VDC                                            |           |           |           |           |           |           |           |     |
|                         | EFFICIENCY (Typ.)            |           | 77%                                                                                 | 77%       | 77%       | 78%       | 78%       | 78%       | 79%       | 79%       | 79% |
|                         | DC CURRENT                   | Full load | A: 110mA B: 55mA C: 27mA                                                            |           |           |           |           |           |           |           |     |
|                         |                              | No load   | A: 20mA B: 10mA C: 7mA                                                              |           |           |           |           |           |           |           |     |
|                         | FILTER                       |           | Capacitor Type                                                                      |           |           |           |           |           |           |           |     |
|                         | PROTECTION                   |           | Fuse recommended                                                                    |           |           |           |           |           |           |           |     |
| PROTECTION<br>(Note. 5) | OVERLOAD                     |           | 130 ~ 200% rated output power                                                       |           |           |           |           |           |           |           |     |
|                         |                              |           | Protection type : Recovers automatically after fault condition is removed           |           |           |           |           |           |           |           |     |
|                         | SHORT CIRCUIT                |           | All output equipped with short circuit                                              |           |           |           |           |           |           |           |     |
|                         |                              |           | Protection type : Recovers automatically after fault condition is removed           |           |           |           |           |           |           |           |     |
| ENVIRONMENT             | WORKING TEMP.                |           | -40 ~ +90℃ (Refer to "Derating Curve")                                              |           |           |           |           |           |           |           |     |
|                         | WORKING HUMIDITY             |           | 20% ~ 90% RH non-condensing                                                         |           |           |           |           |           |           |           |     |
|                         | STORAGE TEMP., HUMIDITY      |           | -40 ~ +105℃, 10 ~ 95% RH                                                            |           |           |           |           |           |           |           |     |
|                         | TEMP. COEFFICIENT            |           | ±0.05% / °C (0 ~ 50℃)                                                               |           |           |           |           |           |           |           |     |
|                         | VIBRATION                    |           | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes            |           |           |           |           |           |           |           |     |
|                         | SAFETY STANDARDS             |           | EAC TP TC 004 approved                                                              |           |           |           |           |           |           |           |     |
| SAFETY                  | WITHSTAND VOLTAGE            |           | I/P-O/P: 1.5KVDC                                                                    |           |           |           |           |           |           |           |     |
|                         | ISOLATION RESISTANCE         |           | I/P-O/P: 100M Ohms / 500VDC / 25℃ / 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                         |           | 500Khrs min. MIL-HDBK-217F(25℃)                                                     |           |           |           |           |           |           |           |     |
|                         | DIMENSION                    |           | 17.4*7.75*11.1mm or 0.69**0.30**0.44" inch (L*W*H)                                  |           |           |           |           |           |           |           |     |
|                         | WEIGHT                       |           | 3g                                                                                  |           |           |           |           |           |           |           |     |

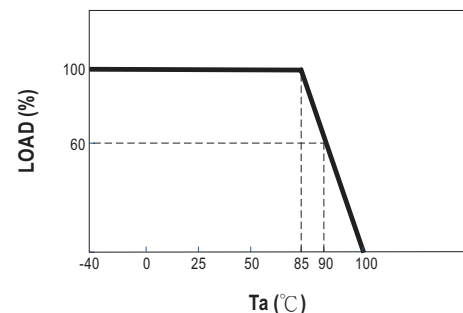
#### ■ Mechanical Specification



#### ■ 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.Line regulation is measured from low line to high line at rated load.
- 4.Load regulation is measured from 10% to 100% rated load.
- 5.Please prevent the converter from operating in overload or short circuit condition for more than 30 seconds.