

### Features :

- 1500VDC I/O isolation
- 3000VDC I/O isolation(optional)
- Operating temperature range of -40 ~ +85°C without derating
- Internal SMD technology
- Built-in EMI filter
- Cooling by free air convection
- Non-conductive plastic case
- Dual in line package
- Industry standard pinout
- 100% burn-in test
- Low cost / High reliability
- 2 years warranty



### SELECTION GUIDE

| ORDER NO.            | SMA01L-05 | SMA01M-05 | SMA01N-05 | SMA01L-09 | SMA01M-09 | SMA01N-09 |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| DC OUTPUT VOLTAGE    | 5V        |           |           | 9V        |           |           |
| OUTPUT CURRENT RANGE | 0 ~ 200mA |           |           | 0 ~ 110mA |           |           |
| EFFICIENCY(Typ.)     | 77%       | 79%       | 77%       | 77%       | 78%       | 75%       |

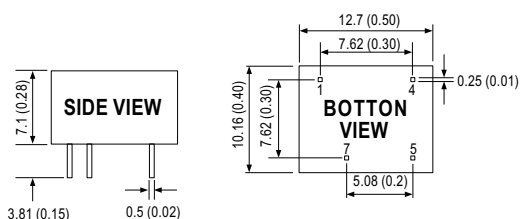
| ORDER NO.            | SMA01L-12 | SMA01M-12 | SMA01N-12 | SMA01L-15 | SMA01M-15 | SMA01N-15 |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| DC OUTPUT VOLTAGE    | 12V       |           |           | 15V       |           |           |
| OUTPUT CURRENT RANGE | 0 ~ 84mA  |           |           | 0 ~ 67mA  |           |           |
| EFFICIENCY(Typ.)     | 78%       | 80%       | 78%       | 79%       | 79%       | 77%       |

### SPECIFICATION

|              |                               |                                                                                                                     |              |              |            |              |              |
|--------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------|--------------|------------|--------------|--------------|
| OUTPUT       | RATED POWER                   | 1W                                                                                                                  |              |              |            |              |              |
|              | 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%                                                                                                               |              |              |            |              |              |
|              | SWITCHING FREQUENCY(Typ.)     | 100KHz                                                                                                              |              |              |            |              |              |
| INPUT        | 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 |
|              | NORMAL VOLTAGE                | 5V                                                                                                                  | 12V          | 24V          | 5V         | 12V          | 24V          |
|              | INPUT CURRENT                 | Full load                                                                                                           | 265mA        | 110mA        | 57mA       | 265mA        | 110mA        |
|              |                               | No load                                                                                                             | 32mA         | 15mA         | 11mA       | 32mA         | 15mA         |
|              | PROTECTION (FUSE RECOMMENDED) | 500mA                                                                                                               | 250mA        | 150mA        | 500mA      | 250mA        | 150mA        |
| PROTECTION   | FILTER                        | Capacitor type                                                                                                      |              |              |            |              |              |
|              | OVERLOAD                      | Momentary                                                                                                           |              |              |            |              |              |
|              |                               | Protection type : Broken                                                                                            |              |              |            |              |              |
|              | SHORT CIRCUIT                 | Momentary                                                                                                           |              |              |            |              |              |
|              |                               | Protection type : Broken                                                                                            |              |              |            |              |              |
| ENVIRONMENT  | WORKING TEMP.                 | -40 ~ +90°C (Refer to output load derating curve)                                                                   |              |              |            |              |              |
|              | WORKING HUMIDITY              | 20% ~ 90% RH non-condensing                                                                                         |              |              |            |              |              |
|              | STORAGE TEMP., HUMIDITY       | -55 ~ +125°C, 10 ~ 95% RH                                                                                           |              |              |            |              |              |
|              | TEMP. COEFFICIENT             | ±0.05% / °C (0 ~ 50°C)                                                                                              |              |              |            |              |              |
|              | VIBRATION                     | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes                                            |              |              |            |              |              |
| SAFETY & EMC | WITHSTAND VOLTAGE             | I/P-O/P: 1.5KVDC                                                                                                    |              |              |            |              |              |
|              | ISOLATION RESISTANCE          | I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH                                                                         |              |              |            |              |              |
|              | ISOLATION CAPACITANCE         | 80pF max.                                                                                                           |              |              |            |              |              |
|              | EMI 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                                                |              |              |            |              |              |
| OTHERS       | MTBF                          | 700khrs min. MIL-HDBK-217F(25°C)                                                                                    |              |              |            |              |              |
|              | DIMENSION (L*W*H)             | 12.7*10.16*7.1mm or 0.50*0.40*0.28" inch for 5V,12V input ; 12.7*10.16*7.62mm or 0.50*0.40*0.30" inch for 24V input |              |              |            |              |              |
|              | WEIGHT                        | 1.7g                                                                                                                |              |              |            |              |              |

### Mechanical Specification

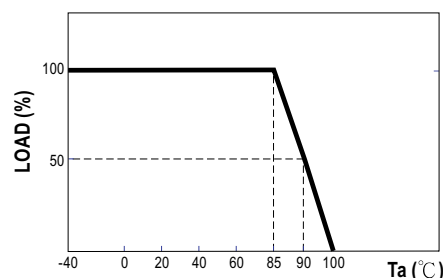
Unit: mm (inch)



### Pin Configuration

| Pin No. | Output |
|---------|--------|
| 1       | -Vin   |
| 4       | +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 20% to 100% rated load.