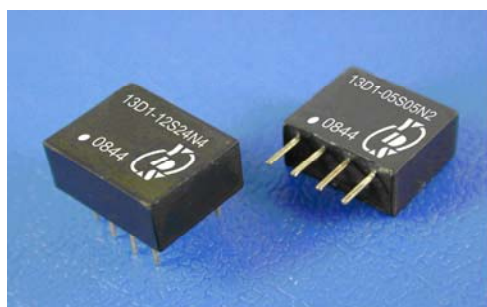




## 3000Vdc Isolation Single Output 1 Watt Dc-Dc Converter



## FEATURES:

- 4 PIN SIP and 8 PIN DIL Package.
- High insulation 3000Vdc.
- High Efficiency up to 85%.
- Unregulated Output Types.
- Internal SMD Construction    ● No External Component Required
- Operating Temperature: -40°C TO +85°C    ● Industry Standard Pinout



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

| Part Number  | Output Voltage | Output Current | Efficiency | Package Style |
|--------------|----------------|----------------|------------|---------------|
|              | Vdc            | mA             | %TYP       | "X"           |
| 13D1-XXS03NX | 3.3            | 303            | 70         | 1/2/3/4       |
| 13D1-XXS05NX | 5              | 200            | 70         | 1/2/3/4       |
| 13D1-XXS09NX | 9              | 112            | 75         | 1/2/3/4       |
| 13D1-XXS12NX | 12             | 84             | 78         | 1/2/3/4       |
| 13D1-XXS15NX | 15             | 67             | 80         | 2/3/4         |
| 13D1-XXS24NX | 24             | 42             | 82         | 2/3/4         |

Note: 1. "XX" Is Input Voltage: 03=3.3Vdc, 05=05Vdc, 09=09Vdc, 12=12Vdc, 15=15Vdc, 24=24Vdc.    2. Over 24Vdc input voltage, using the 3 package  
 3. The input voltage increases, there will be an increase in efficiency.

## Input Specifications

| Parameters        | Conditions | Min | Typ | Max | Units |
|-------------------|------------|-----|-----|-----|-------|
| Voltage Tolerance | Vo, Io Nom |     |     | ±10 | %     |
| Filter            | Capacitor  |     |     |     |       |

## Output Specifications

| Parameters                      | Conditions                            | Min | Typ | Max   | Units |
|---------------------------------|---------------------------------------|-----|-----|-------|-------|
| Voltage Tolerance               | 100% full load                        |     |     | ±5    | %     |
| Short Circuit Protection        | Short Term                            |     |     | 1 Sec |       |
| Line Regulation                 | For 1.0% OF Vin                       |     | 1.2 |       | %     |
| Load Regulation                 | 3.3V & 5V (10% To 100% F.L.)          |     |     | 15    | %     |
| Load Regulation                 | 9V, 12V, 15V & 24V (10% To 100% F.L.) |     |     | 10    | %     |
| Ripple & Noise                  | BW=DC To 20MHz (Package 1)            |     |     | 150   | mVp-p |
| Ripple & Noise                  | BW=DC To 20MHz (Package 2/3/4)        |     |     | 100   | mVp-p |
| Transient response setting time | 50% load step change                  |     | 350 |       | us    |

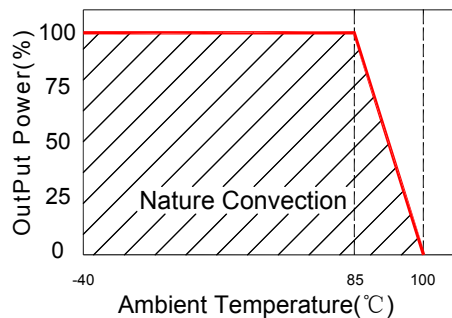
## General Specifications

| Parameters            | Conditions               | Min     | Typ             | Max | Units |
|-----------------------|--------------------------|---------|-----------------|-----|-------|
| Isolation Resistance  | 500Vdc                   | 1000    |                 |     | MΩ    |
| Switching Frequency   | Full load, nominal input |         | 100             |     | KHz   |
| Operating Temperature |                          | -40     |                 | +85 | °C    |
| Humidity              | Non Condensing           |         |                 | 95  | %     |
| Cooling               | Free air Convection      |         |                 |     |       |
| Case material         | DAP                      |         |                 |     |       |
| MTBF                  | MIL-HDBK-217F@25°C       | 3500000 |                 |     | Hours |
| Weight                | Package 1/2/3/4          |         | 1.1/1.5/1.9/1.9 |     | g     |
| Dimensions            | Package 1                |         | 11.50x6.00x7.5  |     | mm    |
| Dimensions            | Package 2                |         | 11.50x6.00x10.0 |     | mm    |
| Dimensions            | Package 3                |         | 11.50x7.50x10.0 |     | mm    |
| Dimensions            | Package 4                |         | 12.7x10.16x7.50 |     | mm    |

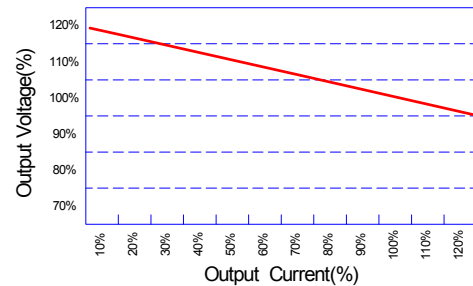


## 3000Vdc Isolation Single Output 1 Watt Dc-Dc Converter

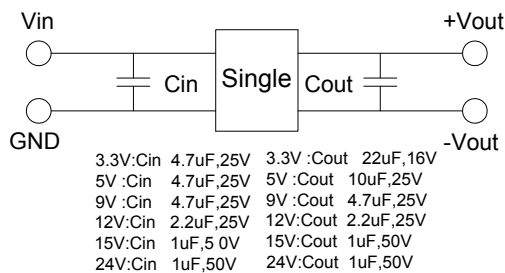
Temperature Derating Graph



Tolerance Envelope Graph



Recommended Test Circuit

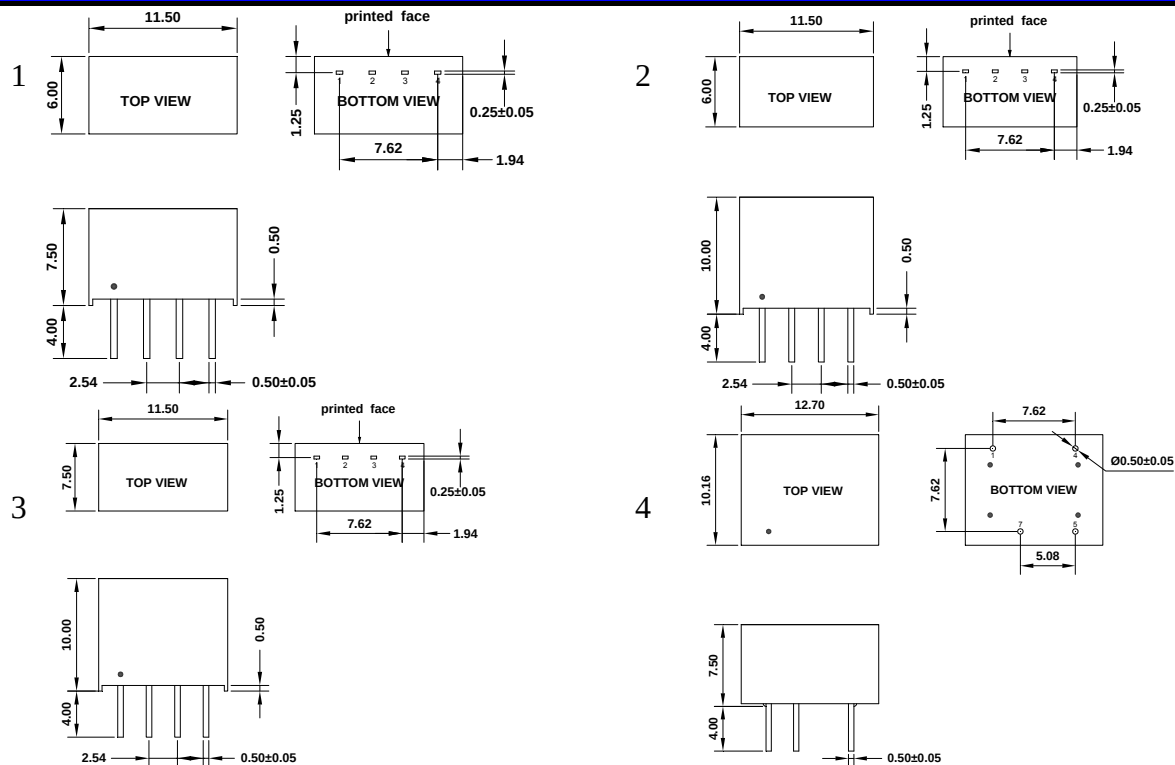


Part Number

13D1 - 03 S 05 N 2  
 A B C D E F

A:Series  
 B:Input Voltage  
 C:Single Output  
 D:Output Voltage  
 E:Unregulated(N)  
 F:Package

Markings and dimensions



PIN Connection

| PIN | 1    | 2    | 3     | 4     | 5     | 7     |
|-----|------|------|-------|-------|-------|-------|
| 4IN | -Vin | +Vin | -Vout | +Vout |       |       |
| 8IN | -Vin |      |       | +Vin  | +Vout | -Vout |