

**FEATURES :**

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

YUAN DEAN SCIENTIFIC



DC-DC Converter

13D-2W SERIES

2Watt

1KV Isolated

Single Output

SIP4

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

| Part Number    | Output Voltage | Output Current | Efficiency |
|----------------|----------------|----------------|------------|
|                | Vdc            | mA             | %          |
| 13D-XXS05N2WNL | 5              | 400            | 70         |
| 13D-XXS09N2WNL | 9              | 222            | 75         |
| 13D-XXS12N2WNL | 12             | 167            | 80         |
| 13D-XXS15N2WNL | 15             | 133            | 80         |
| 13D-XXS24N2WNL | 24             | 84             | 85         |

**Note:**

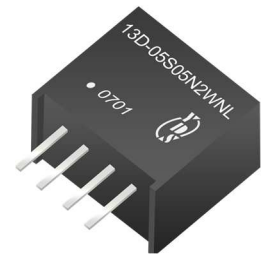
- 1."XX" Is Input Voltage : 05=5Vdc,09=9Vdc,12=12Vdc,15=15Vdc,24=24Vdc.
- 2.The input voltage increases, there will be an increase in efficiency.

**Input Specifications**

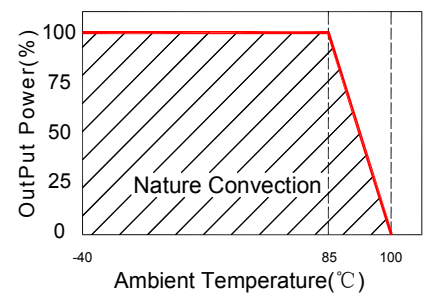
| Parameters        | Conditions | Min | Typ | Max | Units |
|-------------------|------------|-----|-----|-----|-------|
| Voltage Tolerance | Vo,Io Nom  |     |     | ±10 | %     |
| Filter            | Capacitor  |     |     |     |       |

**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<br>(10% To 100% F.L)        |     |     | 15  | %     |
| Load Regulation            | 9V,12V,15V,24V<br>(10% To 100% F.L) |     |     | 10  | %     |
| Ripple & Noise             | BW=DC To 20MHz                      |     |     | 100 | mVp-p |
| Transient response setting | 50% load step change                |     | 350 |     | us    |



**Temperature Derating Graph**



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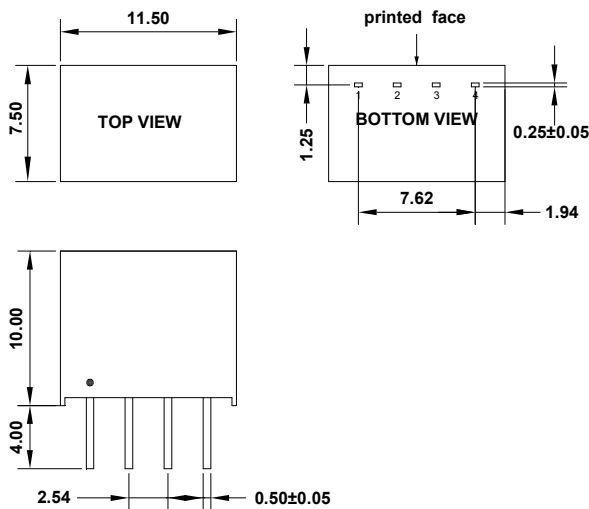
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General Specifications

| 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                |                          |         | 1.8              |     | g     |
| Dimensions            |                          |         | 11.50x7.50x10.00 |     | mm    |

Markings and Dimensions

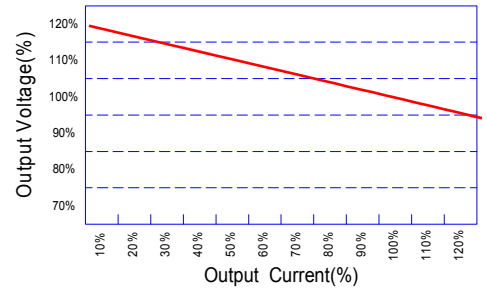


Unit:mm Unless otherwise specified, all tolerances are ±0.25

PIN Connection

| PIN    | 1    | 2    | 3     | 4     |
|--------|------|------|-------|-------|
| Single | -Vin | +Vin | -Vout | +Vout |

Tolerance Envelope Graph

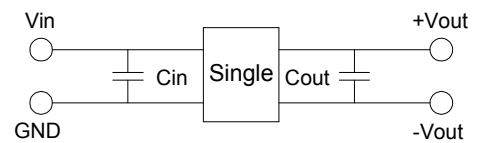


Part Number

13D - 05 S 05 N 2W NL  
A B C D E F G

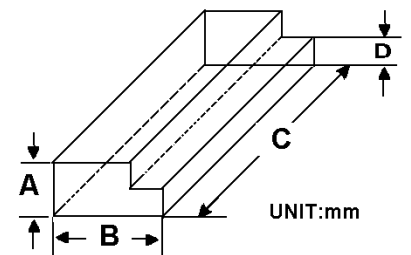
- A:Series
- B:Input Voltage
- C:Single(S)
- D:Output Voltage
- E:Unregulated(N)
- F:Output Power
- G:RoHS Version

Recommended Test Circuit



5V :Cin 4.7uF,25V 5V :Cout 10uF,25V  
 9V :Cin 4.7uF,25V 9V :Cout 4.7uF,25V  
 12V:Cin 2.2uF,25V 12V:Cout 2.2uF,25V  
 15V:Cin 1uF,50V 15V:Cout 1uF,50V  
 24V:Cin 1uF,50V 24V:Cout 1uF,50V

Packaging



| Size(mm) |       |     |      |
|----------|-------|-----|------|
| A        | B     | C   | D    |
| 9.50     | 16.50 | 522 | 5.00 |

