

## FEATURES :

- 14PIN DIL Package
- High Efficiency up to 85%
- Internal SMD Construction
- Unregulated Output Types
- 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 | Recognized By<br>UL 60950-1                                                                                                                                  |
|--------------|----------------|----------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Vdc            | mA             | %Typ       |                                                                                                                                                              |
| 24D-XXS05NNL | 5              | 400            | 70         | 24D-05D05NNL<br>24D-05D12NNL<br>24D-05D15NNL<br>24D-05D24NNL<br>24D-12D12NNL<br>24D-12D15NNL<br>24D-24D05NNL<br>24D-24D09NNL<br>24D-24D15NNL<br>24D-24D24NNL |
| 24D-XXS09NNL | 9              | 222            | 75         |                                                                                                                                                              |
| 24D-XXS12NNL | 12             | 167            | 80         |                                                                                                                                                              |
| 24D-XXS15NNL | 15             | 133            | 80         |                                                                                                                                                              |
| 24D-XXS24NNL | 24             | 84             | 85         |                                                                                                                                                              |
| 24D-XXD05NNL | ±5             | ±200           | 70         |                                                                                                                                                              |
| 24D-XXD09NNL | ±9             | ±111           | 75         |                                                                                                                                                              |
| 24D-XXD12NNL | ±12            | ±84            | 80         |                                                                                                                                                              |
| 24D-XXD15NNL | ±15            | ±67            | 80         |                                                                                                                                                              |
| 24D-XXD24NNL | ±24            | ±42            | 85         |                                                                                                                                                              |

## Note:

- 1."XX" Is Input Voltage:03 = 3.3Vdc, 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                 | 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 time | 50% load step change                 |     | 350 |     | us    |

YUAN DEAN SCIENTIFIC



DC-DC Converter

24D SERIES

2Watt

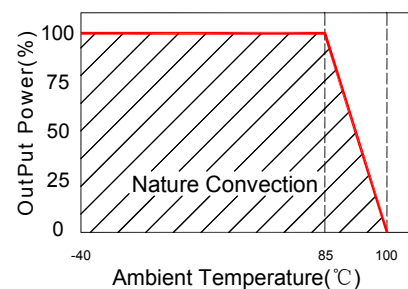
1KV Isolated

Single &amp; Dual Output

DIL14



## Temperature Derating Graph



www.yds.com.tw



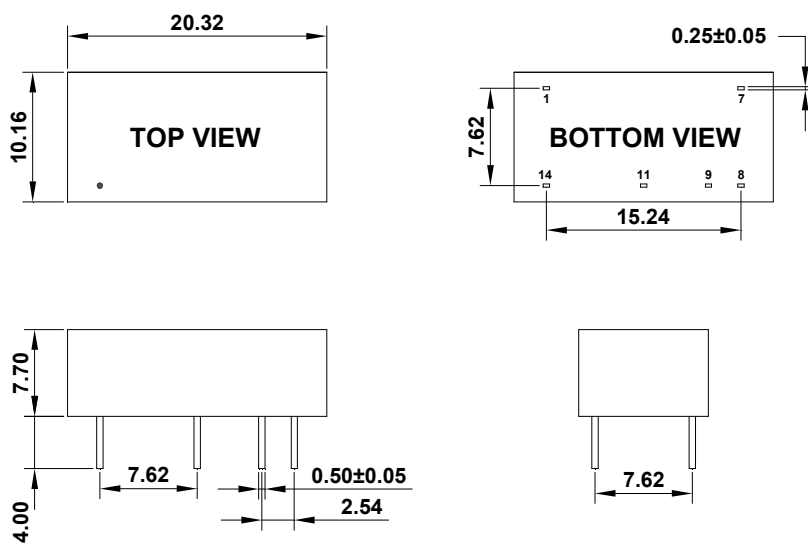
TEL : 886-6-3842899 FAX : 886-6-3843288  
E-MAIL : ydsweb@yds.com.tw

Rev:1 2018/10/08

## General Specifications

| Parameters            | Conditions               | Min              | Typ | Max | Units |
|-----------------------|--------------------------|------------------|-----|-----|-------|
| Isolation Resistance  | 500Vdc                   | 1000             |     |     | MΩ    |
| Switching Frequency   | Full load, nominal input |                  | 75  |     | 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                |                          |                  | 2.8 |     | g     |
| Dimensions            |                          | 20.32x10.16x7.70 |     |     | mm    |

## Markings and dimensions

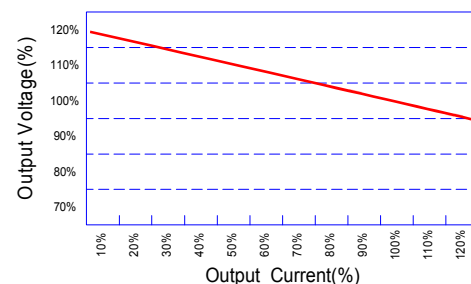


Unit : mm Unless otherwise specified, all tolerances are ±0.25

## PIN Connection

| PIN    | 1    | 7  | 8     | 9     | 11     | 14   |
|--------|------|----|-------|-------|--------|------|
| Single | -Vin | NC | -Vout | +Vout | No Pin | +Vin |
| Dual   | -Vin | NC | COM   | +Vout | -Vout  | +Vin |

## Tolerance Envelope Graph

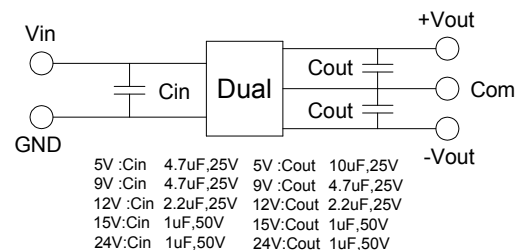
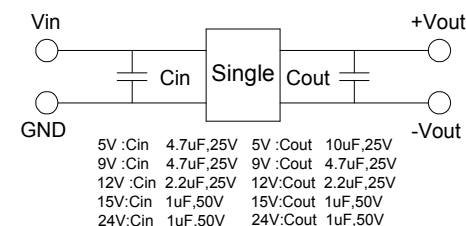


## Part Number

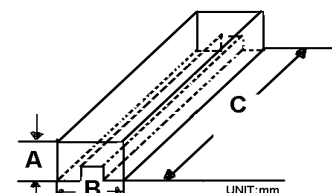
24D - 05 D 05 N NL  
A B C D E F

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

## Recommended Test Circuit



## Packaging



| Size(mm) |       |     |
|----------|-------|-----|
| A        | B     | C   |
| 13.23    | 12.30 | 530 |