

**FEATURES :**

- 7PIN SIP PACKAGE
- High Efficiency up to 85%
- Single Output 5/9/12/15V/24V Approved by UL60950-1
- 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 |
|---------------|----------------|----------------|------------|
|               | Vdc            | mA             | %Typ       |
| ★19D-XXS05NNL | 5              | 400            | 70         |
| ★19D-XXS09NNL | 9              | 222            | 75         |
| ★19D-XXS12NNL | 12             | 167            | 80         |
| ★19D-XXS15NNL | 15             | 133            | 80         |
| ★19D-XXS24NNL | 24             | 84             | 85         |
| 19D-XXD05NNL  | ±5             | ±200           | 70         |
| 19D-XXD09NNL  | ±9             | ±111           | 75         |
| 19D-XXD12NNL  | ±12            | ±84            | 80         |
| 19D-XXD15NNL  | ±15            | ±67            | 80         |
| 19D-XXD24NNL  | ±24            | ±42            | 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.
- 3." ★" marked as recognized by UL 60950-1.

**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    |

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DC-DC Converter

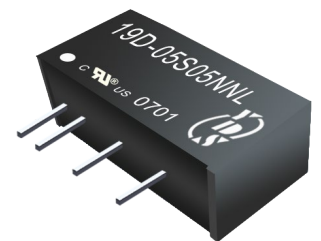
19D SERIES

2Watt

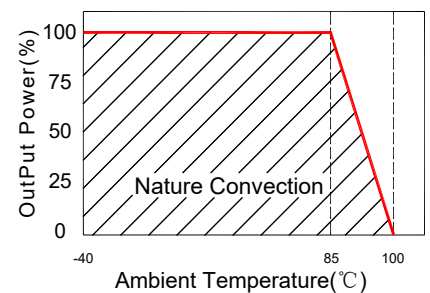
1KV Isolated

Single & Dual Output

SIP7



Temperature Derating Graph



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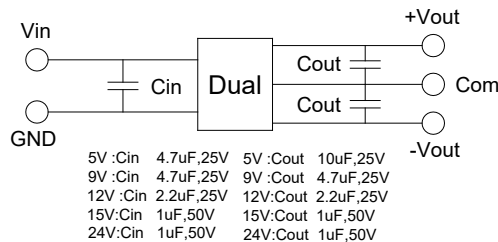
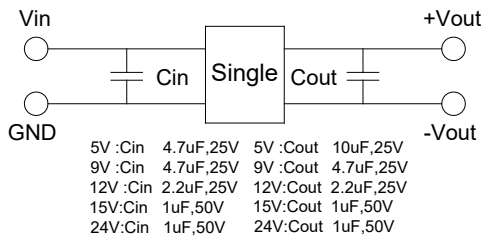
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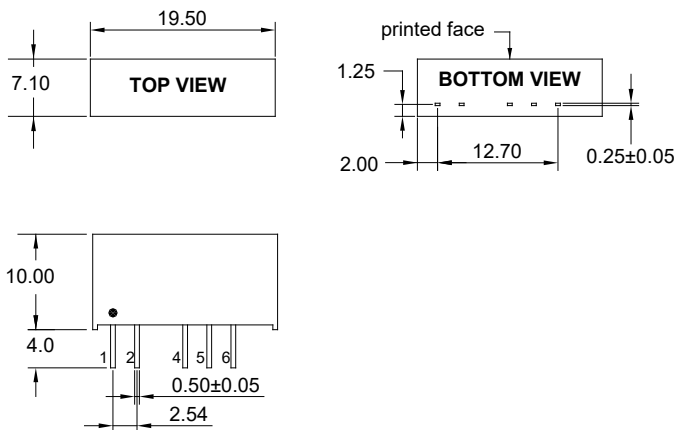
General Specifications

| Parameters            | Conditions               | Min     | Typ           | Max | Units |
|-----------------------|--------------------------|---------|---------------|-----|-------|
| Isolation Resistance  | 500Vdc                   | 1000    |               |     | MΩ    |
| Switching Frequency   | Full load, nominal input |         | 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                |                          |         | 2.7           |     | g     |
| Dimensions            |                          |         | 19.5x7.1x10.0 |     | mm    |

Recommended Test Circuit

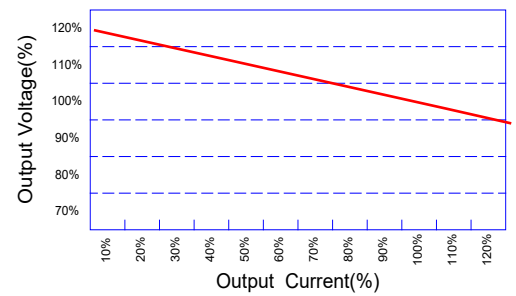


Markings and Dimensions



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

Tolerance Envelope Graph

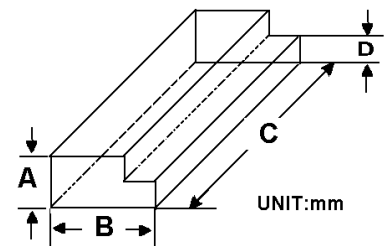


Part Number

19D - 05 S 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

Packaging



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

PIN Connection

| PIN    | 1    | 2    | 4     | 5      | 6     |
|--------|------|------|-------|--------|-------|
| Single | +Vin | -Vin | -Vout | NO PIN | +Vout |
| Dual   | +Vin | -Vin | -Vout | Com    | +Vout |