

NDDY

WRA (B)_CS-3W

PRODUCT SPECIFICATION

2-3W, WIDE INPUT,
ISOLATED & REGULATED
DUAL(SINGLE) OUTPUT
DC/DC CONVERTER

● FEATURES

- Size: 22.0mm*9.5mm*12.0mm
- International standard pin-out
- Wide input voltage range(2:1)
- Low ripple & noise
- Short circuit protection
- ROHS compliant
- Isolation voltage: 1500VDC
- Operating temperature range:-40°C~+85°C
- 3 years warranty



● DESCRIPTION

This is a 2-3W DC/DC converter specifically designed for applications where input voltage range is large and the space is limited. It is widely used in communications equipment, power system, instrumentation, industrial control, intelligent equipment, and etc.

● PRODUCT LIST

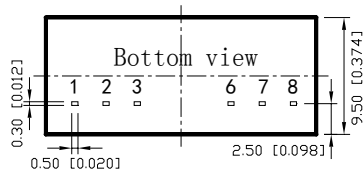
| Product Name | Input Voltage / VDC | | Output | | EFF/% (TYP.) | Maximum CAP Load/uF |
|--------------|---------------------|----------|-----------------|-------------------------|-----------------|------------------------|
| | Normal | Range | Voltage /VDC | Current/mA Max./Min. | | |
| WRA0505CS-2W | 5 | 4.5~9 | ±5 | ±200/±20 | 72 | 470 |
| WRA0512CS-2W | | | ±12 | ±83/±9 | 73 | 330 |
| WRA0515CS-2W | | | ±15 | ±66/±7 | 74 | 330 |
| WRB0505CS-2W | | | 5 | 400/40 | 71 | 820 |
| WRB0512CS-2W | | | 12 | 166/17 | 72 | 680 |
| WRB0515CS-2W | | | 15 | 133/13 | 74 | 680 |
| WRA1205CS-3W | 12 | 9~18 | ±5 | ±300/±30 | 76 | 470 |
| WRA1212CS-3W | | | ±12 | ±125/±13 | 78 | 330 |
| WRA1215CS-3W | | | ±15 | ±100/±10 | 79 | 330 |
| WRB1203CS-2W | | | 3.3 | 600/60 | 73 | 820 |
| WRB1205CS-3W | | | 5 | 600/60 | 75 | 820 |
| WRB1209CS-3W | | | 9 | 333/33 | 77 | 680 |
| WRB1212CS-3W | | | 12 | 250/25 | 76 | 680 |
| WRB1215CS-3W | | | 15 | 200/20 | 78 | 680 |
| WRB1224CS-3W | | | 24 | 125/12 | 79 | 680 |
| WRA2405CS-3W | | | 24 | 18~36 | ±5 | ±300/±30 |
| WRA2412CS-3W | ±12 | ±125/±13 | | | 77 | 330 |
| WRA2415CS-3W | ±15 | ±100/±10 | | | 80 | 330 |
| WRB2403CS-2W | 3.3 | 600/60 | | | 74 | 820 |
| WRB2405CS-3W | 5 | 600/60 | | | 76 | 820 |
| WRB2412CS-3W | 12 | 250/25 | | | 77 | 680 |

| | | | | | | |
|--------------|----|-------|-----|----------|----|-----|
| WRB2415CS-3W | | | 15 | 200/20 | 79 | 680 |
| WRB2424CS-3W | | | 24 | 125/12 | 80 | 330 |
| WRA4805CS-3W | 48 | 36~72 | ±5 | ±300/±30 | 79 | 470 |
| WRA4812CS-3W | | | ±12 | ±125/±13 | 81 | 330 |
| WRB4805CS-3W | | | 5 | 600/60 | 77 | 820 |
| WRB4812CS-3W | | | 12 | 250/25 | 80 | 680 |
| WRB4824CS-3W | | | 24 | 200/20 | 82 | 330 |

● **PRODUCT PARAMETERS**

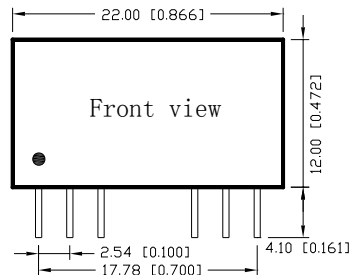
| Parameter | Conditions / Description | Min | Nom | Max | Unit | |
|-------------------------|-----------------------------------|-------------------------------|------|------|--------|-------|
| Voltage accuracy | 3.3Vo 5Vo | - | ±2 | ±5 | % | |
| | Other output | - | ±1 | ±3 | % | |
| Load regulation | 10%~100Io | - | ±0.5 | ±1 | % | |
| Line regulation | 100Io, input votagel range | - | ±0.2 | ±0.5 | % | |
| Ripple & Noise | 20MHz BW | 5Vo | - | 50 | - | mVp-p |
| | | Other output | - | 100 | - | |
| Switching frequency | Nominal input voltage, 100Io | - | 200 | - | kHz | |
| SCP | Short circuit protection | Continuous, self-recovery | | | | |
| Temperature coefficient | Nominal input voltage, 100Io | - | 0.02 | - | %/°C | |
| Operating temperature | | -40 | - | +85 | °C | |
| Storage temperature | | -40 | - | +125 | °C | |
| Storage humidity | No condensing | - | - | 95 | %RH | |
| Cooling method | | Natural air cooling | | | | |
| Insulation voltage | | 1500 | - | - | VDC | |
| Insulation resistance | Input-output, 500VDC, 25°C, 70%RH | 1000 | - | - | MOhms | |
| MTBF | MIL-HDBK-217F@25°C | 100 | - | - | KHours | |
| Case material | | Black flame retardant plastic | | | | |
| Weight | | - | 4.9 | - | g | |

● DIMENSIONS AND PIN ASSIGNMENT

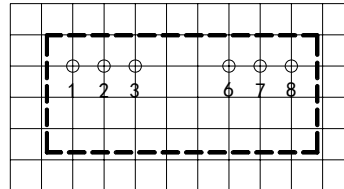


Unit: mm[inch]
 Pin section tolerance: $\pm 0.10[\pm 0.004]$
 General tolerance: $\pm 0.25[\pm 0.010]$

| | | | | | | |
|-----|-----|-----------------|----|-----------------|----|-----------------|
| | 1 | 2 | 3 | 6 | 7 | 8 |
| WRB | GND | V _{in} | NC | +V _o | 0V | NC |
| WRA | GND | V _{in} | NC | +V _o | 0V | -V _o |



Recommended PCB LAYOUT



Note1. Grid 2.54mm*2.54mm
 Note2. Hole size is advised 1.00mm
 Note3. NC pin should be floated

● DESIGN CONSIDERATIONS

1. Minimum load requirement

The minimum load of this series DC/DC converter is 10% of rated load. It is not advised to be used at no load condition. A resistor (dummy load) should be paralleled at the output if necessary.

2. External capacitor limitation

If extreme low ripple voltage is needed, external LC filter should be added at the output. Please note that the maximum capacitor should not be very large, it should be less than the value in the product list.

● NOTES

1. Unless otherwise specified, data in this specification is tested with nominal input voltage, rated output load, and $T_a=25^\circ\text{C}$, humidity < 75%RH.
2. All data testing methods are based on Guangzhou NengDa company standards.
3. Specification of the product may be subject to change without prior notice.
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