

Features

Regulated Converters

- 2:1 Wide Range Voltage Input
- 1kVDC, 2kVDC and 3kVDC Isolation
- Approved for Medical Applications
- Continuous Short Circuit Protection
- Low Ripple and Noise
- DIP16, mini DIP16 and SMD Cases Styles
- Efficiency to 83 %

Description

High power-density, 2:1 input voltage range and a wide temperature range of -40°C to +85°C are just some of the characteristics of this versatile DIP16 converter, ideal for highly sophisticated industrial and medical designs where a regulated converter is required but space is at a premium. Three different case styles and isolation options are available.

Selection Guide

| Part Number | Input Voltage Range (VDC) | Rated Output Voltage (VDC) | Output Current Full Load (mA) | Efficiency typ./nom Vin (%) | Max Capacitive Load ⁽¹⁾ |
|--------------------|---------------------------|----------------------------|-------------------------------|-----------------------------|------------------------------------|
| RW2-053.3S (H2/H3) | 4.5 - 9 | 3.3 | 500 | 68 | 4700µF |
| RW2-0505S (H2/H3) | 4.5 - 9 | 5 | 400 | 73 | 1000µF |
| RW2-0512S (H2/H3) | 4.5 - 9 | 12 | 166 | 75 | 1000µF |
| RW2-0515S (H2/H3) | 4.5 - 9 | 15 | 134 | 75 | 1000µF |
| RW2-123.3S (H2/H3) | 9 - 18 | 3.3 | 500 | 69 | 4700µF |
| RW2-1205S (H2/H3) | 9 - 18 | 5 | 400 | 75 | 1000µF |
| RW2-1212S (H2/H3) | 9 - 18 | 12 | 166 | 80 | 1000µF |
| RW2-1215S (H2/H3) | 9 - 18 | 15 | 134 | 80 | 1000µF |
| RW2-243.3S (H2/H3) | 18 - 36 | 3.3 | 500 | 70 | 4700µF |
| RW2-2405S (H2/H3) | 18 - 36 | 5 | 400 | 78 | 1000µF |
| RW2-2412S (H2/H3) | 18 - 36 | 12 | 166 | 83 | 1000µF |
| RW2-2415S (H2/H3) | 18 - 36 | 15 | 134 | 83 | 1000µF |
| RW2-483.3S (H2/H3) | 36 - 72 | 3.3 | 500 | 73 | 4700µF |
| RW2-4805S (H2/H3) | 36 - 72 | 5 | 400 | 76 | 1000µF |
| RW2-4812S (H2/H3) | 36 - 72 | 12 | 166 | 81 | 1000µF |
| RW2-4815S (H2/H3) | 36 - 72 | 15 | 134 | 81 | 1000µF |
| RW2-0505D (H2/H3) | 4.5 - 9 | ±5 | ±200 | 73 | ±680µF |
| RW2-0509D (H2/H3) | 4.5 - 9 | ±9 | ±111 | 74 | ±680µF |
| RW2-0512D (H2/H3) | 4.5 - 9 | ±12 | ±83 | 75 | ±680µF |
| RW2-0515D (H2/H3) | 4.5 - 9 | ±15 | ±67 | 75 | ±680µF |
| RW2-1205D (H2/H3) | 9 - 18 | ±5 | ±200 | 75 | ±680µF |
| RW2-1209D (H2/H3) | 9 - 18 | ±9 | ±111 | 78 | ±680µF |
| RW2-1212D (H2/H3) | 9 - 18 | ±12 | ±83 | 80 | ±680µF |
| RW2-1215D (H2/H3) | 9 - 18 | ±15 | ±67 | 80 | ±680µF |
| RW2-2405D (H2/H3) | 18 - 36 | ±5 | ±200 | 78 | ±680µF |
| RW2-2409D (H2/H3) | 18 - 36 | ±9 | ±111 | 81 | ±680µF |
| RW2-2412D (H2/H3) | 18 - 36 | ±12 | ±83 | 83 | ±680µF |
| RW2-2415D (H2/H3) | 18 - 36 | ±15 | ±67 | 83 | ±680µF |
| RW2-4805D (H2/H3) | 36 - 72 | ±5 | ±200 | 78 | ±680µF |
| RW2-4809D (H2/H3) | 36 - 72 | ±9 | ±111 | 81 | ±680µF |
| RW2-4812D (H2/H3) | 36 - 72 | ±12 | ±83 | 83 | ±680µF |
| RW2-4815D (H2/H3) | 36 - 72 | ±15 | ±67 | 83 | ±680µF |

Standard Isolation is 1kVDC. Add suffix **"H2"** for 2kVDC Isolation, **"H3"** for 3kVDC Isolation. Add no suffix for standard case style, **"SMD"** for SMD package or **"B"** for smaller case size e.g. RW2-0505S/H3, RW2-0505D/H2/SMD or RW2-0505S/B

Notes

- Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1second without damage to the converter
- Note 2: The RW2 series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions will not damage these devices; however, they may not meet all listed specifications.

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

2 Watt

DIP16, Mini

DIP16 & SMD

Single & Dual

Output

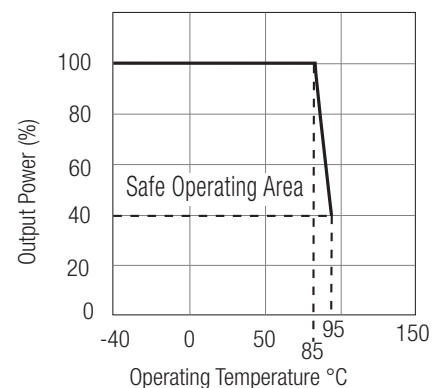


EN-60950-1 Certified (All Suffixes)
EN-60601-1 Certified* (* /H suffix)

RW2

Derating-Graph

(Ambient Temperature)



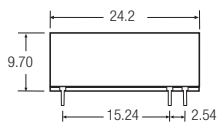
Refer to Application Notes

Electrical Specifications (measured at $T_A = 25^\circ\text{C}$, at nominal input voltage and rated output current unless otherwise specified)

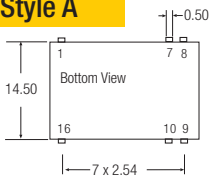
| | | | |
|---|--|----------------------------|-----------------------------|
| Input Voltage Range | | 2:1 | |
| Output Accuracy | | $\pm 2\%$ typ. | |
| Line Voltage Regulation | | $\pm 0.5\%$ max. | |
| Load Voltage Regulation | (20% to 100% full load) | $\pm 0.5\%$ typ. | |
| Minimum Load | | 10% ⁽²⁾ | |
| Output Ripple and Noise (20MHz limited) | | 50mVp-p max. | |
| Switching Frequency (at full Load) | | 100kHz min. / 700kHz max. | |
| Efficiency at Full Load | | 70% min. / 80% typ. | |
| Isolation Voltage | (tested for 1 second) | 1000VDC | |
| | (rated for 1 minute*) | 500VAC / 60Hz | |
| H2-Suffix | (tested for 1 second) | 2000VDC | |
| | (rated for 1 minute*) | 1000VAC / 60Hz | |
| H3-Suffix | (tested for 1 second) | 3000VDC | |
| | (rated for 1 minute*) | 1500VAC / 60Hz | |
| Isolation Capacitance | | 30pF max. | |
| Isolation Resistance | | 1G Ω min. | |
| Short Circuit Protection | | Continuous | |
| Operating Temperature Range | | -40°C to +85°C (see Graph) | |
| Storage Temperature Range | | -55°C to +125°C | |
| Case Temperature | | 100°C max. | |
| Relative Humidity | | 95% RH | |
| Package Weight | | 6.4g | |
| Packing Quantity | Case Style A, SMD | 20 pcs per tube | |
| | Case Style B | 22 pcs per Tube | |
| MTBF (+25°C) | } For Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F | 4366 x10 ³ hours |
| (+85°C) | | using MIL-HDBK 217F | 658 x10 ³ hours |

**Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

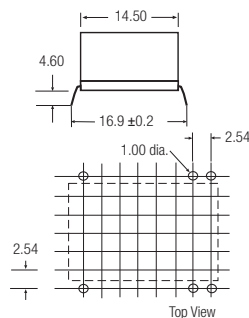
Package Style and Pinning (mm)



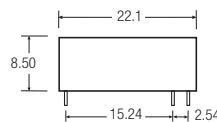
Case Style A



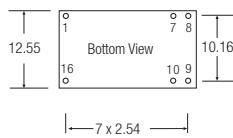
16 Pin DIP Package



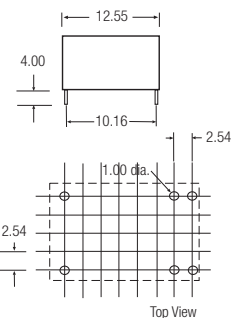
Recommended Footprint Details



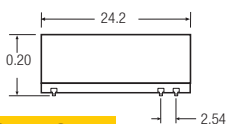
Case Style B



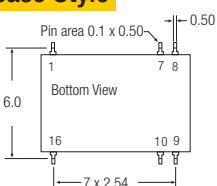
16 Pin Mini-DIP Package



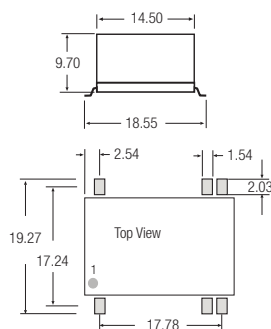
Recommended Footprint Details



SMD Case Style



16 Pin SMD Package



Recommended Pad Details

Pin Connections (All Case Styles)

| Pin # | Single | Dual |
|-------|--------|-------|
| 1 | -Vin | -Vin |
| 7 | NC | NC |
| 8 | NC | Com |
| 9 | +Vout | +Vout |
| 10 | -Vout | -Vout |
| 16 | +Vin | +Vin |

XX.X ± 0.5 mm
XX.XX ± 0.35 mm

Certifications

EN General Safety Report: SPCLVD1212007 EN60950-1:2006 + A12:2011

EN Medical Safety Report: MDD1205098-3 + RM1205098-3

IEC/EN 60601-1 3rd Edition Medical Report + ISO14971 Risk Assessment