

Features

Regulated Converters

- UL-60950-1 / CSA C22.2 certified
- 5W DIP Package
- 4kVDC & 6kVDC Isolation
- Regulated Output
- Continuous Short Circuit Protection Auto-Restarting
- Wide Input 2:1 & 4:1
- UL94V-0 Package Material
- Cost Effective
- 100% Burned In
- Efficiency to 86%

Selection Guide

| Part Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|------------------------|--------------------------|----------------------|---------------------|----------------|
| REC5-xx3.3SRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | 3.3 | 1200 | 75-77 |
| REC5-xx05SRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | 5 | 1000 | 79-81 |
| REC5-xx09SRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | 9 | 556 | 82-83 |
| REC5-xx12SRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | 12 | 420 | 84-85 |
| REC5-xx15SRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | 15 | 340 | 85-86 |
| REC5-xx05DRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | ±5 | ±500 | 79-81 |
| REC5-xx12DRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | ±12 | ±210 | 84-85 |
| REC5-xx15DRW (H4/H6) | 9 - 18, 18 - 36, 36 - 72 | ±15 | ±170 | 85-86 |
| REC5-xx3.3SRWZ (H4/H6) | 9 - 36**, 18 - 72 | 3.3 | 1200 | 75-76 |
| REC5-xx05SRWZ (H4/H6) | 9 - 36**, 18 - 72 | 5 | 1000 | 81-82 |
| REC5-xx09SRWZ (H4/H6) | 9 - 36**, 18 - 72 | 9 | 556 | 82-83 |
| REC5-xx12SRWZ (H4/H6) | 9 - 36**, 18 - 72 | 12 | 420 | 83-84 |
| REC5-xx15SRWZ (H4/H6) | 9 - 36**, 18 - 72 | 15 | 340 | 84-85 |
| REC5-xx05DRWZ (H4/H6) | 9 - 36**, 18 - 72 | ±5 | ±500 | 81-82 |
| REC5-xx12DRWZ (H4/H6) | 9 - 36**, 18 - 72 | ±12 | ±210 | 82-83 |
| REC5-xx15DRWZ (H4/H6) | 9 - 36**, 18 - 72 | ±15 | ±170 | 84-85 |

2:1 Input (REC5-S/DRWH4/H6) **4:1 Input (REC5-S/DRWZ(H4/H6))**
 xx = 9-18Vin = 12 xx = 9-36Vin = 24
 xx = 18-36Vin = 24 xx = 18-72Vin = 48
 xx = 36-72Vin = 48

* add suffix "/H4" for 4kVDC isolation and "/H6" for 6kVDC isolation

add suffix "/A" or "/C" for Pinning, see next page

add suffix "/M" for metal case

e.g. REC5-xxxxSRW(Z)H4/A/M = 4kVDC isol. / Pinout "A" / metal case

** 24V 4:1 Wide Range Input Types (REC5-24xxS/DRWZ(H4/H6)) should be derated while 9 Vin : 3.3Vout / 1100mA, 5Vout / 900mA.

Notes :

1. If the options "/M" for metal case and "/SMD" for SMD pinout are combined the maximum allowed isolation voltage is 2kVDC because of the shorter distances between pins and metal-case so only available SMD-option in metal-case is "/H2". DIP-24 through-hole case and SMD-plastic case are not affected and offer the desired isolation barriers of 4kVDC for "/H4" option and 6kVDC for "/H6".

Description

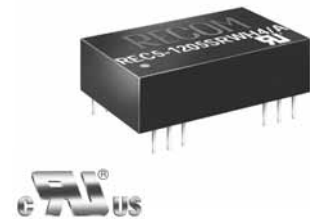
This series offers high isolation of 4kVDC (= option "H4") or 6kVDC (= option "H6") making it ideal for medical applications and other sophisticated industrial applications. UL-1950 approval of this series is applied for. Packaging can be either DIP-24 non-conductive plastic or 5-side-shielded DIP24 metal case (= option "M") as well as DIP24-SMD case (= option "SMD"). For all the above variants, 2 industry-standard-pinouts (= option "A" or "C") are available.

ECONOLINE

DC/DC-Converter

REC5-S_DRW/H4, H6 Series

**5 Watt
DIP24 / SMD
Single &
Dual Output**

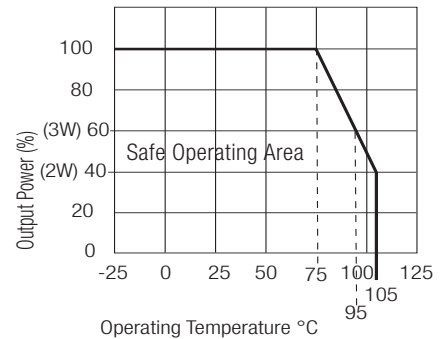


RECOM

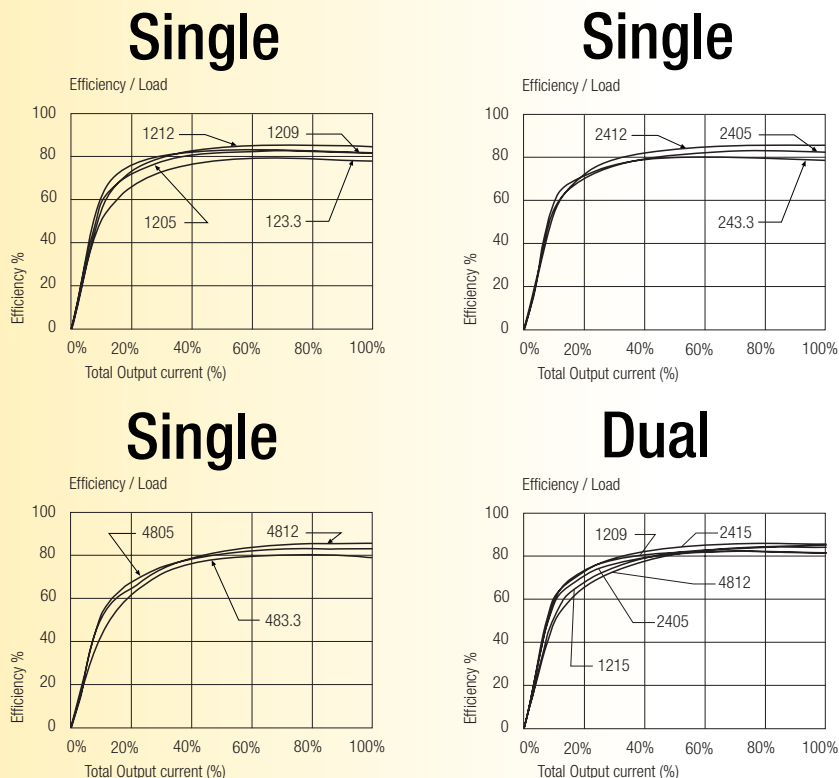
Specifications (Core Operating Area)

| | | | |
|---|--|-----------------------|-----------------------------|
| Input Voltage Range | 2:1 & 4:1 | | |
| Output Voltage Accuracy | ±2% max. | | |
| Line Regulation (HL-LL) | ±0.3% max. | | |
| Load Regulation (for output load current change from 20% to 100%) | ±0.6% max. | | |
| Output Ripple and Noise (0,1 µF capacitor on output, 20MHz BW) | 50mVp-p max. | | |
| Operating Frequency at Full Load (at nominal input voltage) | 2:1 input | 120kHz typ. | |
| | 4:1 input | 200kHz typ. | |
| Input Filter | Pi Network | | |
| Efficiency at Full Load | see above | | |
| Isolation Voltage SMD Pinout and metal case (see note1) (tested for 1 second) | 2.000VDC min. | | |
| Rated Working Voltage (long term isolation) | see Application Notes | | |
| Isolation Voltage H4 types (tested for 1 second) | 4.000VDC min. | | |
| | Rated Working Voltage (long term isolation) | see Application Notes | |
| Isolation Voltage H6 types (tested for 1 second) | 6.000VDC min. | | |
| | Rated Working Voltage (long term isolation) | see Application Notes | |
| Isolation Capacitance | 60pF typ. | | |
| Isolation Resistance | 1 GΩ min. | | |
| Short Circuit Protection | Continuous, Auto Restart | | |
| Operating Temperature (free air convection) | -25°C to +75°C (see Graph) | | |
| Storage Temperature Range | -55°C to +125°C | | |
| Relative Humidity | MSL Level 1 | 95% RH | |
| Case Material | Non-Conductive Plastic | | |
| Thermal Impedance | Natural convection | 20°C/W for metal case | |
| Package Weight | 13 g | | |
| MTBF (+25°C) | } Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F | 850 x 10 ³ hours |
| | | using MIL-HDBK 217F | 206 x 10 ³ hours |

Derating-Graph (Ambient Temperature)

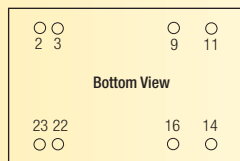
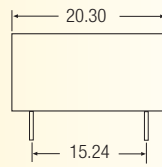
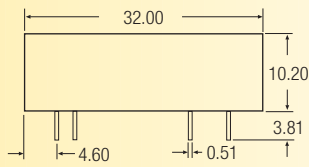


Typical Characteristics

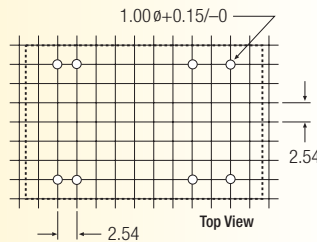


Package Style and Pinning (mm) DIP 24 , Wide Input 2:1 & 4:1

Package A



Recommended Footprint Details

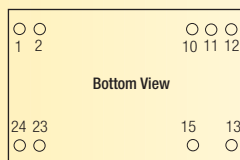
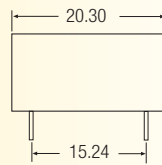
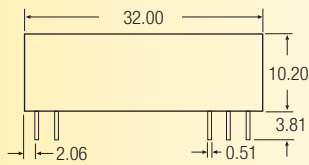


Pin Connections

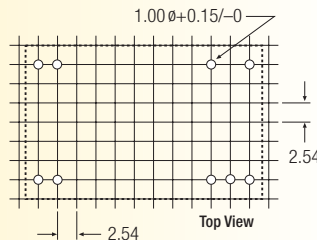
| Pin # | Single | Dual |
|-------|--------|-------|
| 2 | -Vin | -Vin |
| 3 | -Vin | -Vin |
| 9 | NC | Com |
| 11 | NC | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Com |
| 22 | +Vin | +Vin |
| 23 | +Vin | +Vin |

NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm

Package C



Recommended Footprint Details

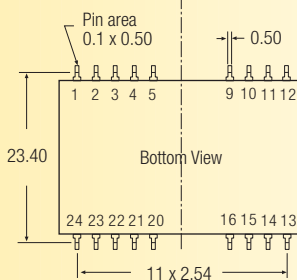
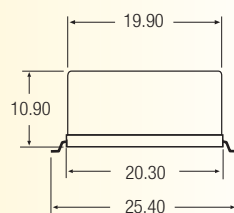
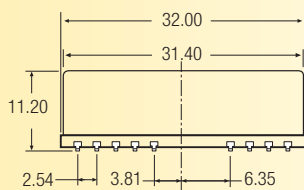


Pin Connections

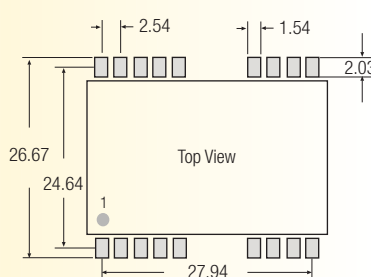
| Pin # | Single | Dual |
|-------|--------|-------|
| 1 | +Vin | +Vin |
| 2 | +Vin | +Vin |
| 10 | NC | Com |
| 11 | NC | Com |
| 12 | -Vout | NC |
| 13 | +Vout | -Vout |
| 15 | NC | +Vout |
| 23 | -Vin | -Vin |
| 24 | -Vin | -Vin |

NC = No Connection
XX.X ± 0.5 mm
XX.XX ± 0.25 mm

Mechanical drawings of DIP24 SMD case



Recommended Footprint Details



Tol.: ± 0.35 mm

for all packages incl.SMD case the length of plastic case is 31,8mm, length of metal case 32.0mm