

Features

Regulated Converters

- 8W DIP24 Package
- 2KVDC and 3kVDC Isolation Options
- 2:1 and 4:1 Versions
- Continuous Short Circuit Protection (power limiting)
- Synchronous Rectification on 3.3, 5V outputs
- Full SMD internal design
- Through Hole or SMD Pinning Options
- Remote Control Pin
- Efficiency to 87%

Description

The REC8-xxxxSRW/DRW-series offer single and dual regulated outputs in a DIP24 package with 2kV or 3kV isolation options and are suitable for higher power industrial or medical applications. Remote on/off control is standard and SMD pinning is offered with the /SMD option. The converters can deliver 150% rated power for short periods of time to cope with applications with large capacitive loads or high start up currents.

Selection Guide

| Part Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) | Max. Capacitive Load |
|-----------------------|---------------------------|----------------------|---------------------|----------------|----------------------|
| REC8-xx3.3SRW/H*/A/M | 4.5-9, 9-18, 18-36, 36-75 | 3.3 | 1600 | 83-85 | 2200µF |
| REC8-xx05SRW/H*/A/M | 4.5-9, 9-18, 18-36, 36-75 | 5 | 1600 | 85-87 | 2200µF |
| REC8-xx12SRW/H*/A/M | 4.5-9, 9-18, 18-36, 36-75 | 12 | 666 | 84-86 | 470µF |
| REC8-xx15SRW/H*/A/M | 4.5-9, 9-18, 18-36, 36-75 | 15 | 533 | 84-86 | 220µF |
| REC8-xx05DRW/H*/A/M | 9-18, 18-36, 36-75 | ±5 | ±800 | 84 | ±1000µF |
| REC8-xx12DRW/H*/A/M | 4.5-9, 9-18, 18-36, 36-75 | ±12 | ±333 | 84-86 | ±220µF |
| REC8-xx15DRW/H*/A/M | 4.5-9, 9-18, 18-36, 36-75 | ±15 | ±267 | 84-86 | ±100µF |
| REC8-xx3.3SRWZ/H*/A/M | 9-36, 18-75 | 3.3 | 1600 | 84 | 2200µF |
| REC8-xx05SRWZ/H*/A/M | 9-36, 18-75 | 5 | 1600 | 86 | 2200µF |
| REC8-xx12SRWZ/H*/A/M | 9-36, 18-75 | 12 | 666 | 85 | 470µF |
| REC8-xx15SRWZ/H*/A/M | 9-36, 18-75 | 15 | 533 | 85 | 220µF |
| REC8-xx05DRWZ/H*/A/M | 9-36, 18-75 | ±5 | ±800 | 83 | ±1000µF |
| REC8-xx12DRWZ/H*/A/M | 9-36, 18-75 | ±12 | ±333 | 85 | ±220µF |
| REC8-xx15DRWZ/H*/A/M | 9-36, 18-75 | ±15 | ±267 | 85 | ±100µF |

* Standard is /H2 for 2kVDC isolation, use /H3 for 3kVDC Isolation (not SMD)

* add suffix "/SMD" for SMD package, e.g. REC8-2405SRW/H2/A/M/SMD

* add suffix -R for Tape and Reel packaging (only available for SMD package)
e.g. REC8-2405SRW/H2/A/M/SMD-R

2:1
xx = 4.5-9Vin = 05,
xx = 9-18Vin = 12,
xx = 18-36Vin = 24,
xx = 36-75Vin = 48

4:1
xx = 9-36Vin = 24,
xx = 18-75Vin = 48

Specifications (measured at $T_A = 25^\circ\text{C}$, nominal input voltage, full load and after warm-up)

| | |
|---|---------------------|
| Input Voltage Range | 2:1 & 4:1 |
| Input Filter | PI Network |
| Output Voltage Accuracy | ±1.5% max. |
| Line Voltage Regulation (VL to VH at full load) | ±0.5% max. |
| Load Voltage Regulation | Single ±0.5% max. |
| (25% to 100% full load) | Dual ±1.2% max. |
| Cross Regulation (100%: 25% to 100% full load) | ±5% max. |
| Output Ripple and Noise (with 100n output capacitor and 20MHz BW) | 50mVp-p max. |
| Start-up time | 300ms typ. |
| Operating Frequency (Full Load) | 330kHz typ. |
| Efficiency at Full Load | see Selection Guide |
| Minimum Load | 0% |

continued on next page

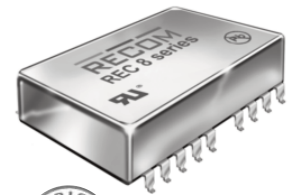
ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

8 Watt DIP24 & SMD Single & Dual Output



EN-60950-1 Certified
UL-60950-1 Certified
EN-60601-1 Certified

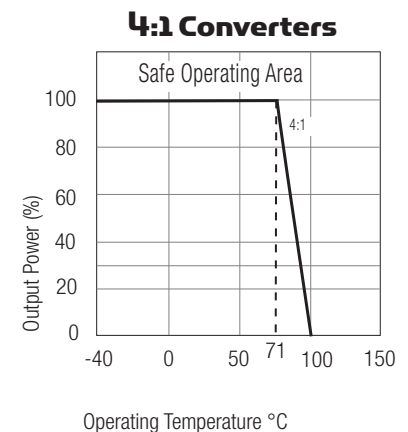
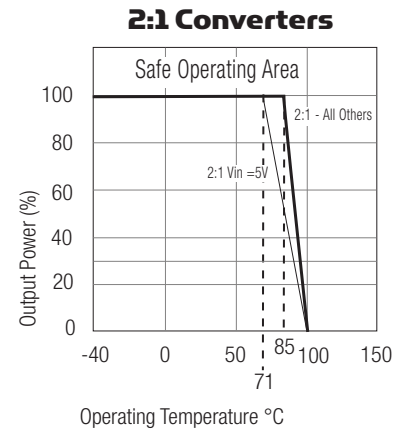
REC8

Refer to Application Notes

Specifications cont. (measured at $T_A = 25^\circ\text{C}$, nominal input voltage, full load and after warm-up)

| | | | |
|--|--|--|------------------------------|
| Input Surge Voltage (100ms max.) | 5V Input | 15VDC | |
| | 12V Input | 36VDC | |
| | 24V Input | 50VDC | |
| | 48V Input | 100VDC | |
| Isolation Voltage | H2-Suffix and SMD | (tested for 1 second) | 2000VDC |
| | H3-Suffix | (rated for 1 minute**) | 1000VAC / 60Hz |
| | | (tested for 1 second) | 3000VDC |
| | | (rated for 1 minute**) | 1500VAC / 60Hz |
| Isolation Capacitance | | | 1200pF typ. |
| Isolation Resistance | | | 1 G Ω min. |
| Overload Protection | | | 150% typ. |
| Short Circuit Protection | | | Continuous, Auto Restart |
| Operating Temperature Range (free air convection) | 4:1 | -40°C to +71°C (see Graph) | |
| | 2:1 - Vin=5V | -40°C to +71°C (see Graph) | |
| | 2:1 - All Others | -40°C to +85°C (see Graph) | |
| Remote On/Off | DC/DC ON | Open or 3.5V < Vr < 12V | |
| | DC/DC OFF | Short or 0V < Vr < 1.2V | |
| Storage Temperature Range | | -55°C to +105°C | |
| Temperature Coefficient | | $\pm 0.05\%$ max. | |
| Relative Humidity | | 95% RH max. | |
| Case Material | | Nickel Plated Metal with Non-Conductive Base | |
| Thermal Impedance | Natural convection | 12°C/W | |
| Maximum Case Temperature | | 100°C | |
| Vibration | | 10-55Hz, 2G, 30mins along X,Y & Z | |
| Package Weight | | 18g | |
| Packing Quantity | Tube | 15 pcs | |
| | Tape and Reel | 100 pcs | |
| MTBF (+25°C) | } Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F | 1200 x 10 ³ hours |
| | | using MIL-HDBK 217F | >300 x 10 ³ hours |
| Certifications | | | |
| EN General Safety | Report: SPLVD1211033-2 | EN60950-1:2006 +A12:2011 | |
| UL General Safety | Report: E224736 | UL 60950-1 1st Ed. | |
| | | C22.2 No. 60950-1-03 | |
| EN Medical Safety | Report: MDD12060585 + RM1206085 | IEC/EN 60601-1 3rd Edition | |
| | | Medical Report + ISO14971 Risk Assessment | |

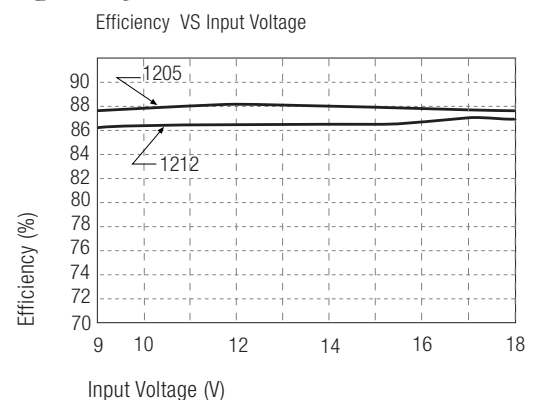
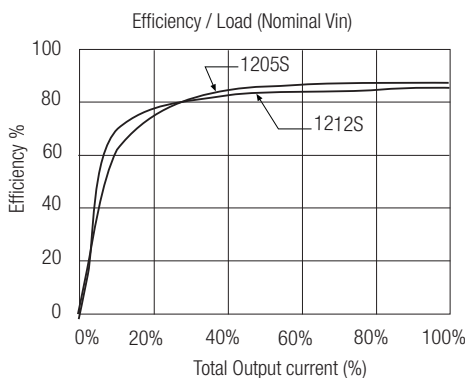
Derating-Graph (Ambient Temperature)



**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.

Typical Characteristics

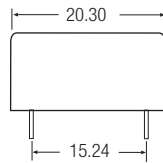
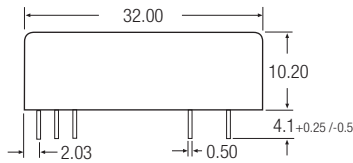
REC8-1205SRW/H2/A/M (/SMD) REC8-1212SRW/H2/A/M (/SMD)



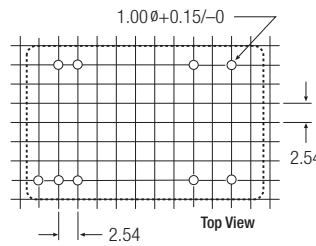
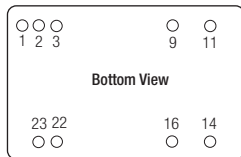
Note: Refer to Application Notes for EMC Class B Filter suggestion

Package Style and Pinning (mm)

24 PIN DIP Package - Available with /H2 and /H3 Options



Recommended Footprint Details



Pin Connections DIP24

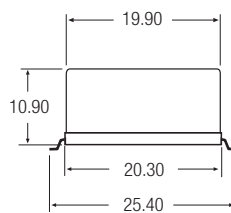
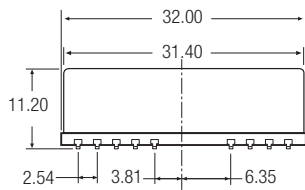
| Pin # | Single | Dual |
|-------|--------|-------|
| 1 | CTRL | CTRL |
| 2 | -Vin | -Vin |
| 3 | -Vin | -Vin |
| 9 | NC | Com |
| 11 | NC | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Com |
| 22 | +Vin | +Vin |
| 23 | +Vin | +Vin |

NC = No Connection

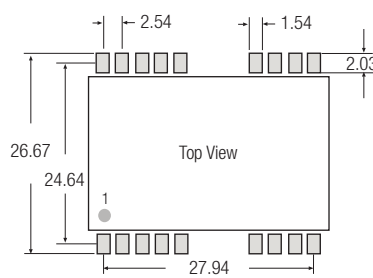
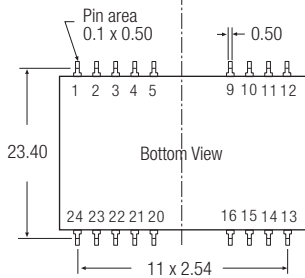
XX.X ± 0.5 mm

XX.XX ± 0.25 mm

24 PIN SMD Package - available with /H2 option only.



Recommended Footprint Details



Pin Connections DIP24 SMD

| Pin # | Single | Dual |
|----------------|--------|-------|
| 1 | CTRL | CTRL |
| 2 | -Vin | -Vin |
| 3 | -Vin | -Vin |
| 9 | NC | Com |
| 11 | NC | -Vout |
| 14 | +Vout | +Vout |
| 16 | -Vout | Com |
| 22 | +Vin | +Vin |
| 23 | +Vin | +Vin |
| 4,5,10,12 | NC | NC |
| 13,15,20,21,24 | NC | NC |

NC = No Connection

XX.X ± 0.5 mm

XX.XX ± 0.25 mm

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