Features

Regulated Converters

- 10W 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%

ECONOLINE
DC/DC-Converter
with 3 year Warranty

RECOM

10 Watt DIP24 & SMD Single & Dual Output



RoHS 2011/65/EU 6/6

E224736

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

REC10

Description

The REC10-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. Cap. Load
REC10-xx3.3SRW/H*/A/M	9-18, 18-36, 36-75	3.3	2000	84-85	2200µF
REC10-xx05SRW/H*/A/M	9-18, 18-36, 36-75	5	2000	86-87	2200µF
REC10-xx12SRW/H*/A/M	9-18, 18-36, 36-75	12	833	85-86	470µF
REC10-xx15SRW/H*/A/M	9-18, 18-36, 36-75	15	667	85-86	220µF
REC10-xx05DRW/H*/A/M	9-18, 18-36, 36-75	±5	±1000	84	±1000µF
REC10-xx12DRW/H*/A/M	9-18, 18-36, 36-75	±12	±416	86	±220µF
REC10-xx15DRW/H*/A/M	9-18, 18-36, 36-75	±15	±333	86	±100µF
REC10-xx3.3SRWZ/H*/A/M	9-36, 18-75	3.3	2000	84	2200µF
REC10-xx05SRWZ/H*/A/M	9-36, 18-75	5	2000	86	2200µF
REC10-xx12SRWZ/H*/A/M	9-36, 18-75	12	833	85	470µF
REC10-xx15SRWZ/H*/A/M	9-36, 18-75	15	667	85	220µF
REC10-xx05DRWZ/H*/A/M	9-36, 18-75	±5	±1000	83	±1000µF
REC10-xx12DRWZ/H*/A/M	9-36, 18-75	±12	±416	85	±220µF
REC10-xx15DRWZ/H*/A/M	9-36, 18-75	±15	±333	85	±100µF

* Standard is /H2 for 2kVDC isolation, use /H3 for 3kVDC Isolation (not SMD)
* add suffix "/X2" for pinning options, see next page.
* add suffix "/SMD" for SMD package, e.g. REC10-2405SRW/H2/A/M/SMD

2:1
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°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 (V_L to V_H 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)		100mVp-p max.
Start-up time		300ms typ.
Operating Frequency (Full Load)		400kHz typ.
Efficiency at Full Load		see Selection Guide
Minimum Load		0%

continued on next page

**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.

Refer to Application Notes

REC10-S_DRW(Z)/H*/A/M Series

Specifications (measured at T_A = 25°C, nominal input voltage, full load and after warm-up)

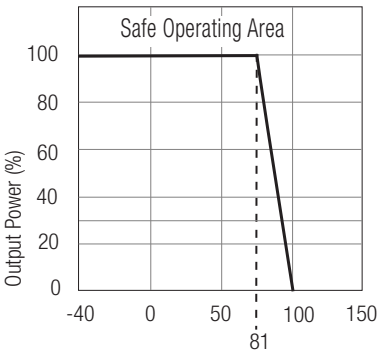
Input Surge Voltage (100ms max.)		12V Input	36VDC
		24V Input	50VDC
		48V Input	100VDC
Isolation Voltage	H2-Suffix and SMD	(tested for 1 second)	2000VDC
		(rated for 1 minute**)	1000VAC / 60Hz
	H3-Suffix	(tested for 1 second)	3000VDC
		(rated for 1 minute**)	1500VAC / 60Hz
Isolation Capacitance			1200pF typ.
Isolation Resistance			1 GΩ min.
Overload Protection			150% typ.
Short Circuit Protection			Continuous, Auto Restart
Operating Temperature Range		4:1	-40°C to +71°C (see Graph)
(free air convection)		2:1	-40°C to +81°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			±0.05% max.
Relative Humidity			95% RH
Case Material			Nickel Plated Metal with Non-Conductive Base
Thermal Impedance		Natural convection	15°C/W
Maximum Case Temperature			100°C
Vibration			10-55Hz, 2G, 30mins along X,Y & Z
Package Weight			18g
Packing Quantity			15 pcs per Tube
MTBF (+25°C) } *Detailed Information see*		using MIL-HDBK 217F	1000 x 10^3hours
(+71°C) } *Application Notes chapter "MTBF"*		using MIL-HDBK 217F	>250 x 10^3hours

Certifications

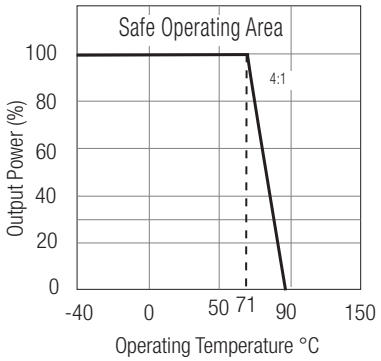
EN General Safety	Report: SPCLVD1211033-2	EN60950-1:2006 + A12:2011
UL General Safety	Report: E224736	UL 60950-1 1st Ed.
		C22.2 No. 60950-1-03
EN Medical Safety	Report: MDD12060585 + RM1206085	IEC/EN 60601-1 3rd Edition
		Medical Report + ISO14971 Risk Assessment

Derating-Graph
(Ambient Temperature)

2:1 Converters



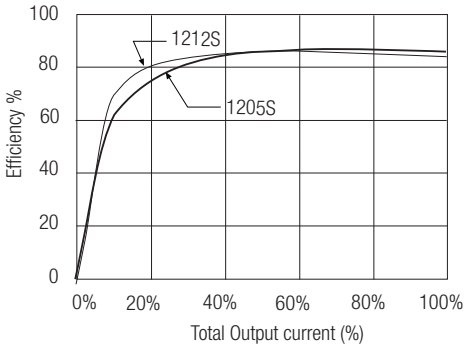
4:1 Converters



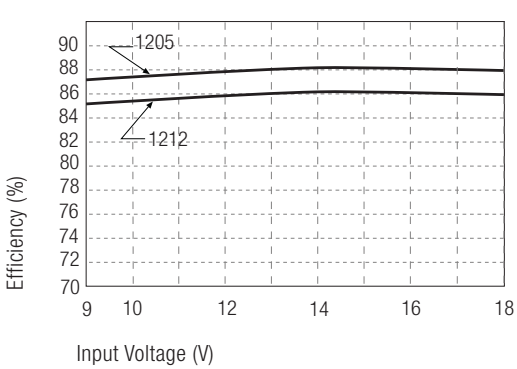
Typical Characteristics

REC10-1205SRW/H2/A/M (/SMD)
REC10-1212SRW/H2/A/M (/SMD)

Efficiency / Load (Nominal Vin)



Efficiency VS Input Voltage

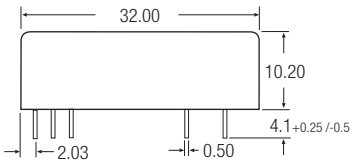


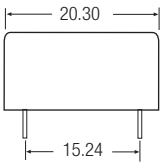
Note: Refer to Application Notes for EMC Class B Filter suggestion

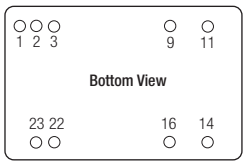
REC10-S_DRW(Z)/H*/A/M Series

Package Style and Pinning (mm)

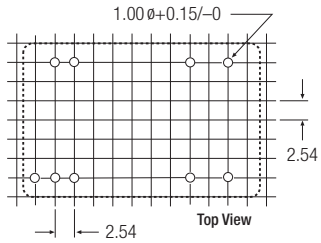
24 PIN DIP Package - Available with /H2 and /H3 Options







Recommended Footprint Details



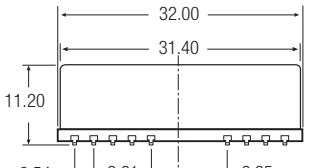
Pin Connections DIP24

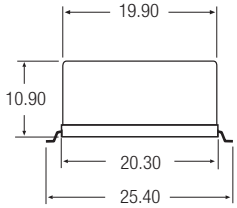
Pin #	Single	Single/X2	Dual
1	CTRL	No Pin	CTRL
2	–Vin	–Vin	–Vin
3	–Vin	–Vin	–Vin
9	NC	No Pin	Com
11	NC	NC	–Vout
14	+Vout	+Vout	+Vout
16	– Vout	–Vout	Com
22	+Vin	+Vin	+Vin
23	+Vin	+Vin	+Vin

NC = No Connection

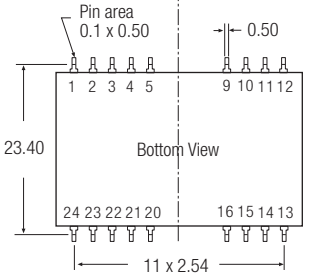
XX.X ± 0.5 mm
XX.XX ± 0.25 mm

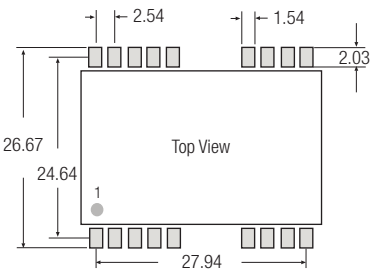
24 PIN SMD Package- Only available with /H2 Option





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
13,15,20,21,24		NC

NC = No Connection

XX.X ± 0.5 mm
XX.XX ± 0.25 mm

REC10

The product information and specifications are subject to change without prior notice. RECOM products are not authorized for use in safety-critical applications (such as life support) without RECOM's explicit written consent. A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.