

Features

Regulated Converters

- 7.5W in DIP24 package
- 1kVDC/1s, 2kVDC/1s or 3kVDC/1s isolation options
- Continuous short circuit protection (power limiting)
- 5 Side Shielded Metal Case
- Full SMD internal design
- Through Hole or SMD Pinning Options
- ON/OFF CTRL pin
- Efficiency to 86%

RECOM
DC/DC Converter

REC7.5-RW

**7.5 Watt
DIP24 or
SMD Metal Case
Single and Dual**



UL
E358085



UL60950-1 certified
IEC60950-1 certified
EN60950-1 certified
EN55032 compliant

Description

The REC7.5-xxxxSRW/DRW series offer single and dual regulated outputs in a DIP24 package with 1kVDC/1s, 2kVDC/1s or 3kVDC/1s options and are suitable for higher power industrial applications. ON/OFF CTRL is possible with the /CTRL option and SMD pinning is offered with the /SMD option. The converters can deliver 140% rated power for short periods of time to cope with applications with large capacitive loads or high start up currents.

Selection Guide

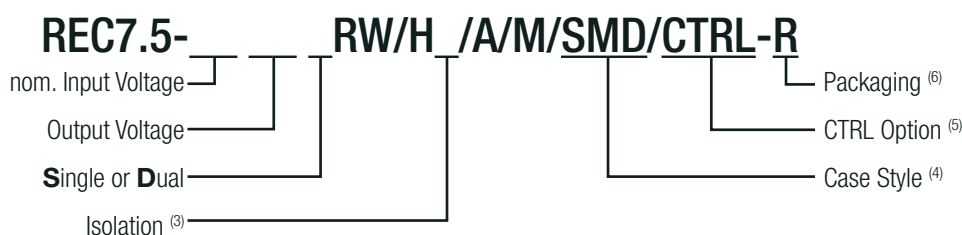
Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. ⁽¹⁾ [%]	max. Capacitive Load ⁽²⁾ [μF]
REC7.5-xx3.3SRW	9-18, 18-36, 36-72	3.3	1800	78	6800
REC7.5-xx05SRW	9-18, 18-36, 36-72	5	1500	79-82	6800
REC7.5-xx09SRW	9-18, 18-36, 36-72	9	833	81-84	6800
REC7.5-xx12SRW	9-18, 18-36, 36-72	12	625	82-85	6800
REC7.5-xx15SRW	9-18, 18-36, 36-72	15	500	83-86	6800
REC7.5-xx05DRW	9-18, 18-36, 36-72	±5	±750	79-82	±2200
REC7.5-xx09DRW	9-18, 18-36, 36-72	±9	±417	81-84	±2200
REC7.5-xx12DRW	9-18, 18-36, 36-72	±12	±312	82-85	±2200
REC7.5-xx15DRW	9-18, 18-36, 36-72	±15	±250	83-86	±2200

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Note2: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter

Model Numbering



Notes:

Note3: "/H1" = 1kVDC/1s isolation

"/H2" = 2kVDC/1s isolation

"/H3" = 3kVDC/1s isolation

Note4: add suffix "/SMD" for SMD package, without suffix = standard DIP24 THT package.

If the option "/SMD" is used, the maximum allowed isolation voltage is 2kVDC/1s because of the shorter distance between pins and the metal case

Note5: add "/CTRL" for Control Pin option. If CTRL option is not chosen, Pin 1 will be absent.

Note6: add suffix "-R" for tape and reel packaging, without suffix standard tube packaging.
tape and reel option only available for SMD case style

Ordering Examples:

REC7.5-1205SRW/H3/A/M/CTRL	9-18Vin	5Vout	Single output	3kVDC isolation	with CTRL Pin	THT	tube packaging
REC7.5-2412DRW/H2/A/SMD-R	18-36Vin	±12Vout	Dual output	2kVDC isolation	no CTRL function	SMD	tape and reel packaging
REC7.5-2412SRW/H1/A/M	18-36Vin	12Vout	Single output	1kVDC isolation	without CTRL Pin	THT	tube packaging
REC7.5-4815DRW/H2/A/M/SMD-R	36-72Vin	±15Vout	Dual output	2kVDC isolation	no CTRL function	SMD	tape and reel packaging

PREFERRED ALTERNATIVES
For new medical applications:

REM6E



Specifications (measured @ $T_a = 25^\circ\text{C}$, nom. V_{in} , full load and after warm-up unless otherwise stated)

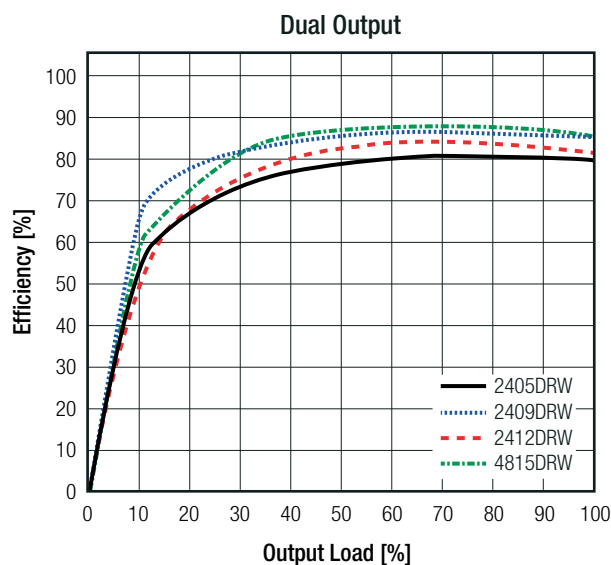
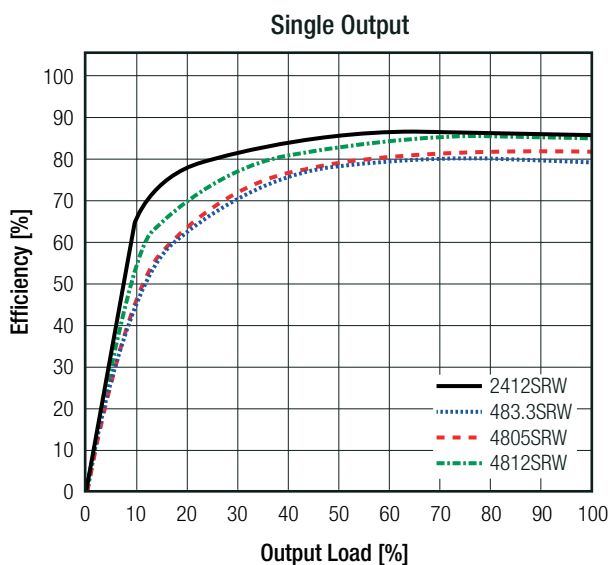
BASIC CHARACTERISTICS

Parameter	Condition	Min.	Typ.	Max.
Internal Input Filter		PI Network		
Input Voltage Range	12VDC nom. $V_{in} =$ 24VDC 48VDC	9VDC 18VDC 36VDC		18VDC 36VDC 72VDC
Minimum Load ⁽⁷⁾		10%		
No Load Power Consumption				300mW
ON/OFF CTRL	DC-DC ON DC-DC OFF	Open or $0\text{VDC} < V_{CTRL} < 1.2\text{VDC}$ $2.2\text{VDC} < V_{CTRL} < 12\text{VDC}$		
Internal Operating Frequency		150kHz		240kHz
Output Ripple and Noise	20MHz BW	3.3VDC others		100mVp-p 50mVp-p

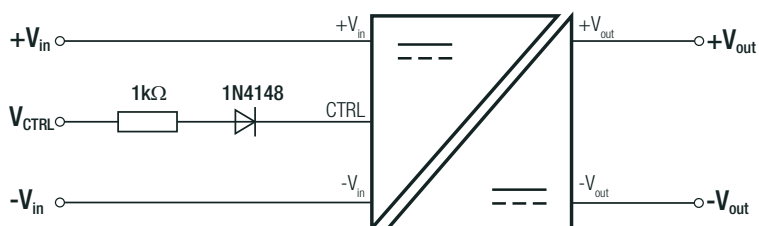
Notes:

Note7: Operation below 10% load will not harm the converter, but specifications may not be met

Efficiency vs. Load



ON/OFF CTRL



DC-DC ON: Open or $0\text{VDC} < V_{CTRL} < 1.2\text{VDC}$
DC-DC OFF: $2.2\text{VDC} < V_{CTRL} < 12\text{VDC}$

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

REGULATIONS

Parameter	Condition	Value
Output Accuracy		±2.0% max.
Line Regulation	low line to high line, full load	0.4% max.
Load Regulation ⁽⁷⁾	25% to 100% load	0.8% max.

PROTECTIONS

Parameter	Type		Value
Short Circuit Protection (SCP) ⁽⁸⁾	below 100mΩ		continuous, auto recovery
Isolation Voltage ⁽⁹⁾	“/H1” version	tested for 1 second rated for 1 minute	1kVDC 500VAC/ 60Hz
	“/H2” version	tested for 1 second rated for 1 minute	2kVDC 1kVAC/ 60Hz
	“/H3” version	tested for 1 second rated for 1 minute	3kVDC 1.5kVAC/ 60Hz
Isolation Resistance			1GΩ min.
Isolation Capacitance			50pF typ.

Notes:

Note8: Max. Temperature = +50°C during the short circuit conditions

Note9: For repeat Hi-Pot testing, reduce the time and/or the test voltage

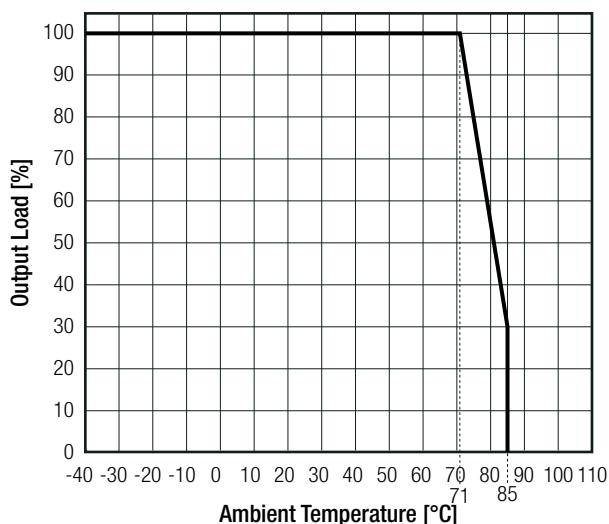
Note10: Refer to local safety regulations if input over-current protection is also required. Recommended fuse: slow blow type

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	with derating @ free air convection (see graph)		-40°C to +85°C
Thermal Impedance	0.1m/s natural convection		12K/W
Operating Altitude	according to 6060-1		3000m
Operating Humidity	non-condensing		95% RH max.
Pollution Degree			PD2
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +71°C	800 x 10 ³ hours >200 x 10 ³ hours

Derating Graph

(@ Chamber and free air convection)



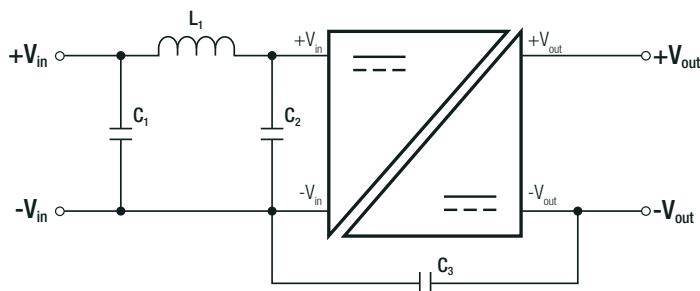
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E358085	UL60950-1, 2nd Edition, 2011 CAN/CSA-C22.2 No. 60950-1-03, 2nd Edition, 2011
Information Technology Equipment, General Requirements for Safety	LVD1605077-01	IEC60950-1:2005, 2nd Edition + A2:2013 EN60950-1:2006, A2:2013
Medical Electrical Equipment Part 1: General Requirements for Basic Safety and Essential Performance	SPC1006048	IEC60601-1:1988 + A2:1995 EN60601-1:1990 + A13 :1996
EAC	RU-AT.49.09571	TP TC 004/2011
RoHS		RoHS-2011/65/EU + AM-2015/863

EMC Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment - Emission requirements	with external filter (see filter suggestion below)	EN55032, Class A and Class B

EMC Filtering Suggestions according to EN55032



Component List Class A

MODEL	C1	C2	C3	L1
all	10µF/50V MLCC	10µF/50V MLCC	1000pF/4kVDC	N/A

Component List Class B

MODEL	C1	C2	C3	L1
all	10µF/50V MLCC	10µF/50V MLCC	1000pF/4kVDC	820µH Choke

DIMENSION AND PHYSICAL CHARACTERISTICS

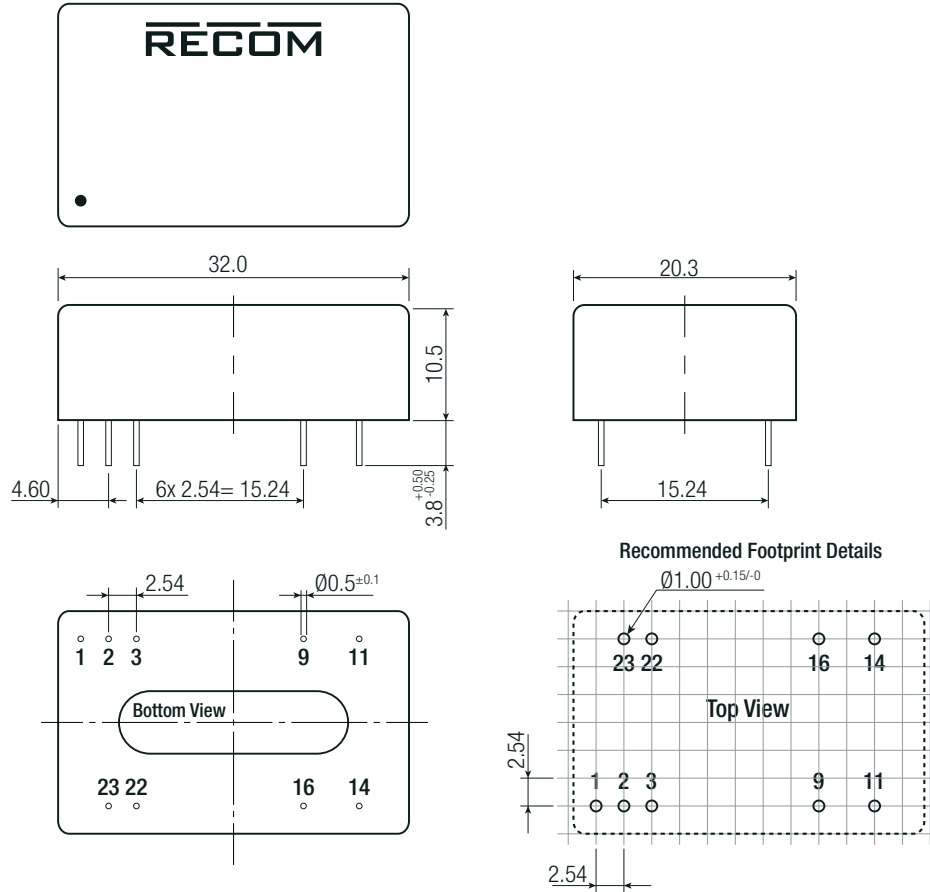
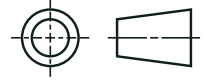
Parameter	Type	Value
Material	case	nickel plated copper
	base	non-conductive black plastic
	potting	epoxy, (UL94 V-0)
	PCB	FR4, (UL94 V-0)
Dimension (LxWxH)	DIP24	32.0 x 20.3 x 10.5mm
	SMD	32.0 x 20.3 x 11.2mm
Weight		16g typ.

continued on next page

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Dimension Drawing (mm)

DIP24 package



DIP24 Pinning (/H1, /H2, /H3)

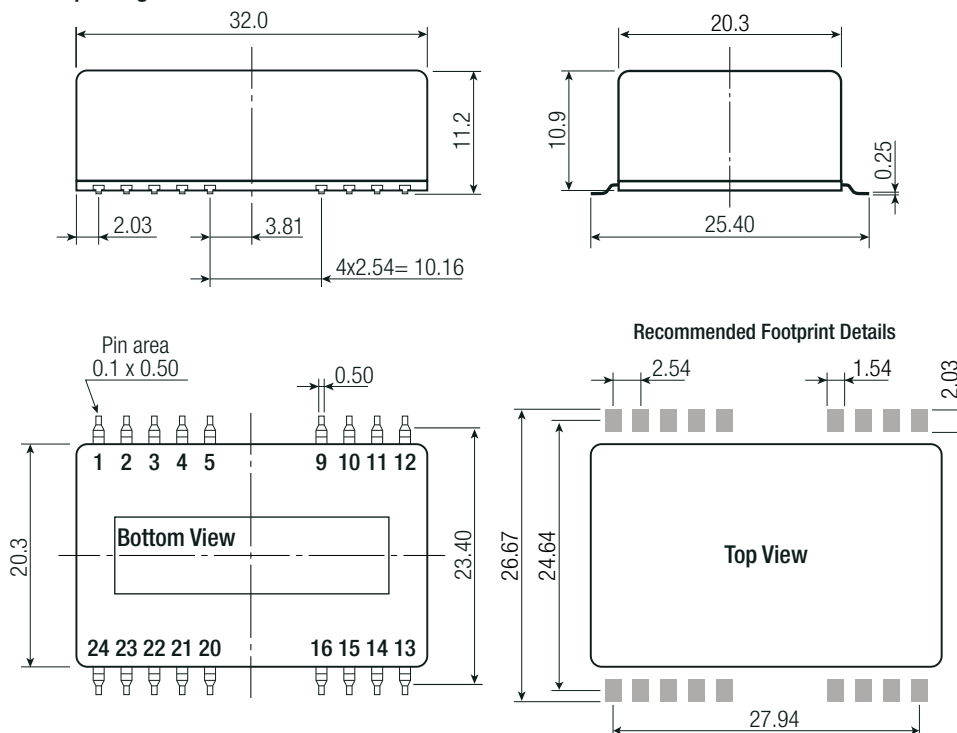
Pin #	Single	Dual
1 (option)	CTRL	CTRL
2, 3	-Vin	-Vin
9	NC	Com
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Com
22, 23	+Vin	+Vin

NC= No Connection

Tolerance: xx.x= ±0.5mm

xx.xx= ±0.25mm

SMD package



SMD Pinning (/H1, /H2)

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

NC= No Connection

Tolerance: xx.x= ±0.5mm

xx.xx= ±0.25mm

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

PACKAGING INFORMATION

Parameter	Type		Value
Packaging Dimension (LxWxH)	DIP24	tube	530.0 x 23.0 x 19.0mm
	SMD	tube	530.0 x 32.0 x 19.0mm
		tape and reel (carton)	355.0 x 342.0 x 70.0mm
Packaging Quantity	tube		15pcs
	tape and reel		100pcs
Tape Width			44mm
Storage Temperature Range			-55°C to +125°C
Storage Humidity	non-condensing		95% RH max.

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