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

3 YEAR warranty

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

UL60950-1 certified
IEC60950-1 certified
EN60950-1 certified
EN55032 complaint

Model Numbering

REC7.5-___ ___ __RW/H_/A/M/SMD/CTRL-R

- nom. Input Voltage
- Output Voltage
- **S**ingle or **D**ual
- Isolation (3)
- Packaging (6)
- CTRL Option (5)
- Case Style (4)

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

PREFERRED ALTERNATIVES
For new medical applications:
REM6E

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

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

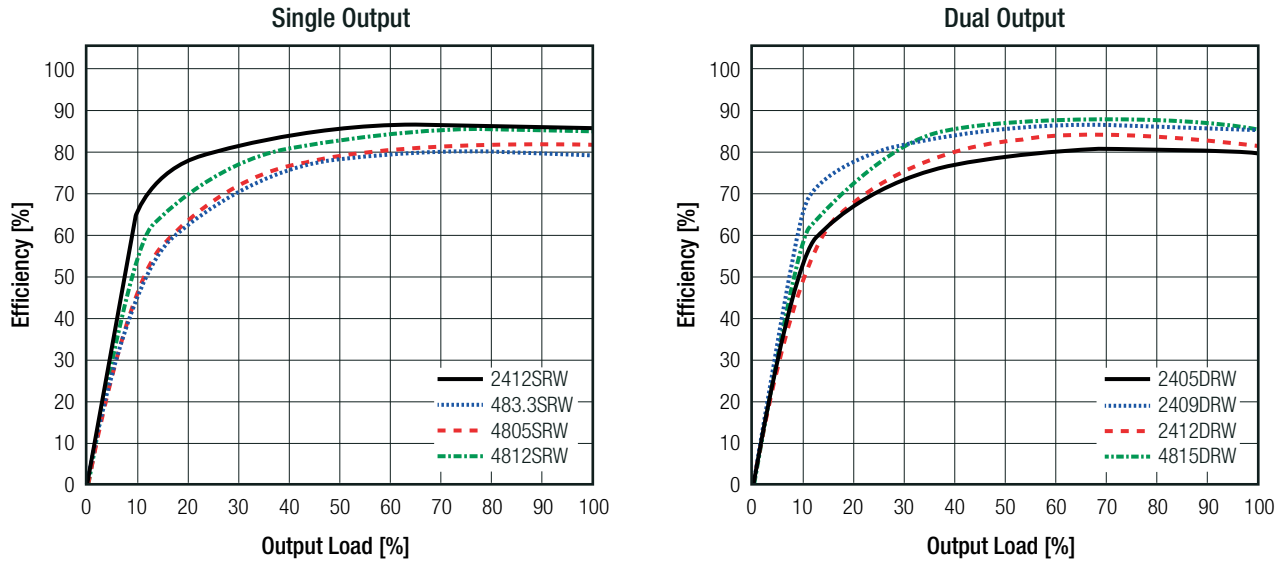
BASIC CHARACTERISTICS

Parameter	Condition		Min.	Typ.	Max.
Internal Input Filter					PI Network
Input Voltage Range	nom. Vin=	12VDC 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 0VDC<V_{CTRL}<1.2VDC 2.2VDC<V_{CTRL}<12VDC		
Internal Operating Frequency			150kHz		240kHz
Output Ripple and Noise	20MHz BW	3.3VDC others			100mVp-p 50mVp-p

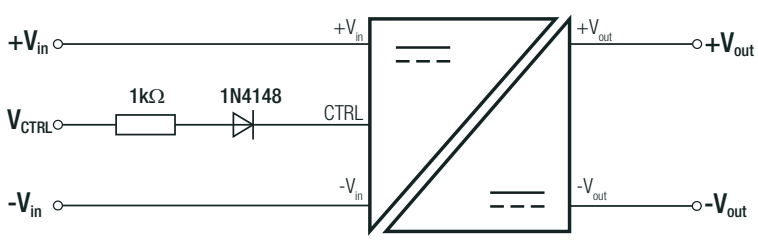
Notes:

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 0VDC<V_{CTRL}<1.2VDC
DC-DC OFF: 2.2VDC<V_{CTRL}<12VDC

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

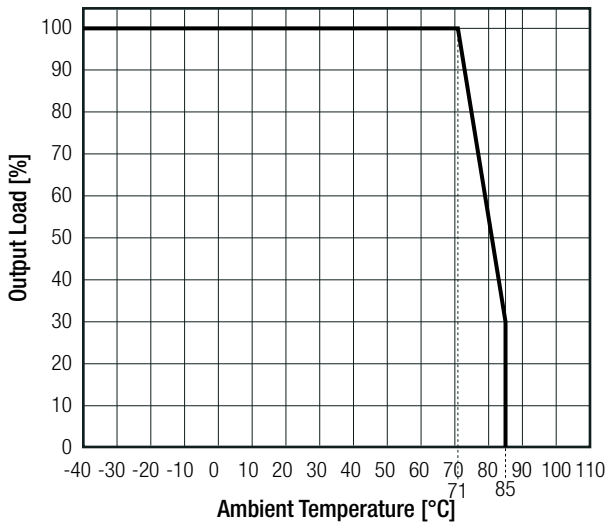
Note9: For repeat Hi-Pot testing, reduce the time and/or the test voltage

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)



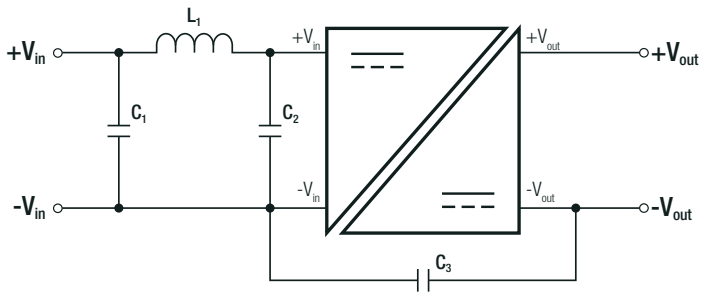
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

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

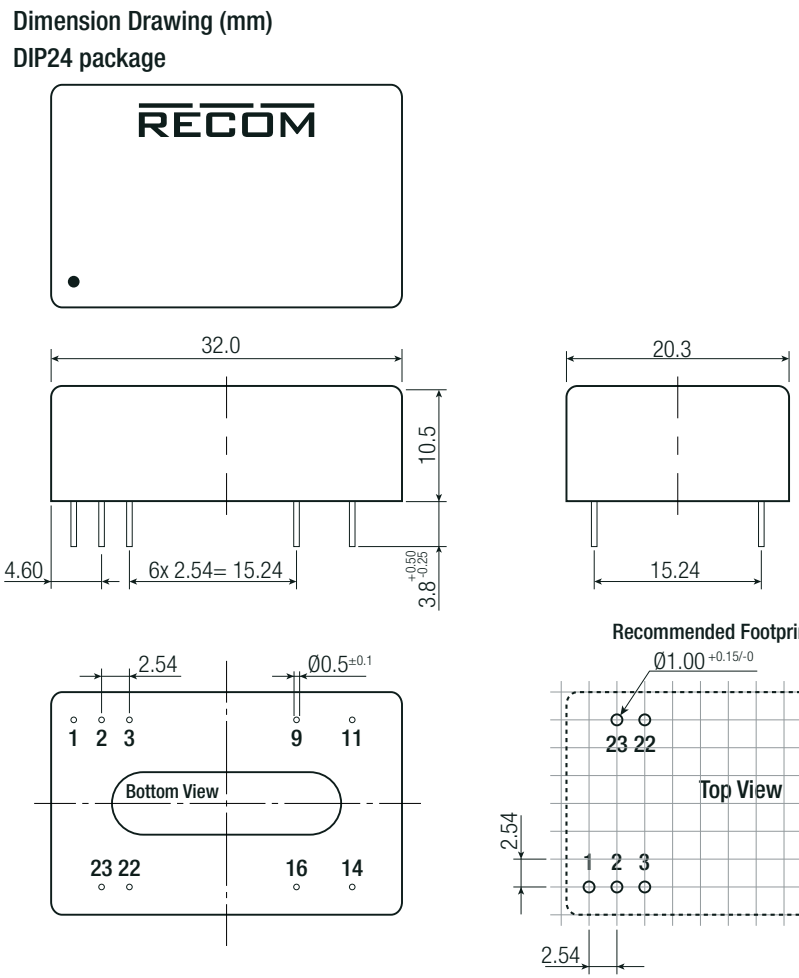
Parameter	Type	Value
Material	case base potting PCB	nickel plated copper non-conductive black plastic epoxy, (UL94 V-0) FR4, (UL94 V-0)
Dimension (LxWxH)	DIP24 SMD	32.0 x 20.3 x 10.5mm 32.0 x 20.3 x 11.2mm
Weight		16g typ.

continued on next page

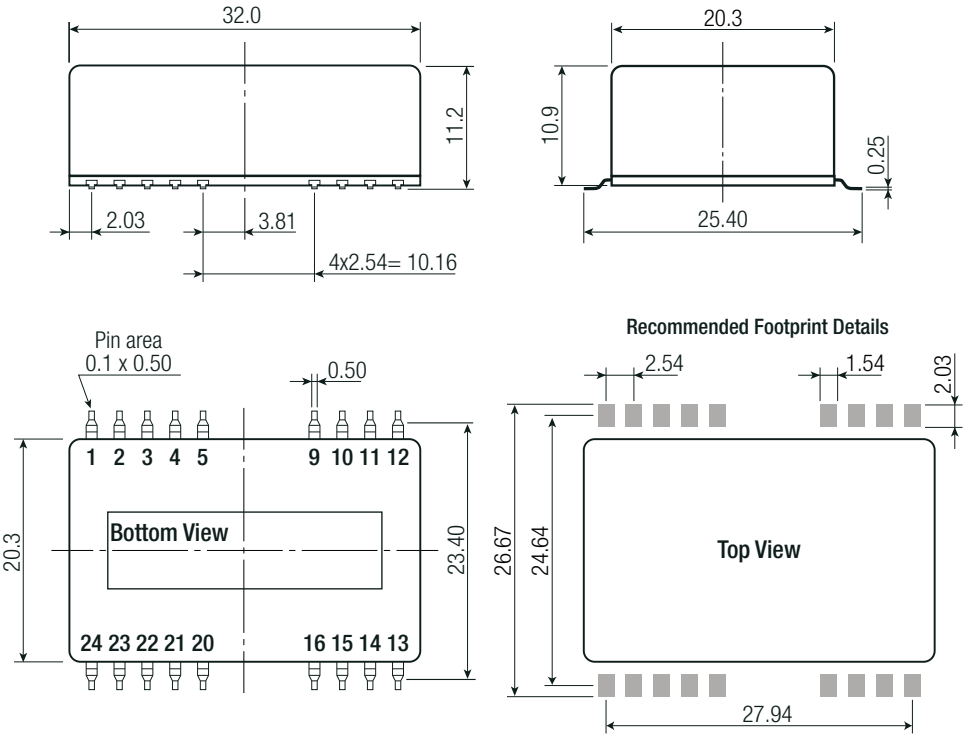
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Dimension Drawing (mm)

DIP24 package



SMD 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 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.