

Features

Regulated Converters

- 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%

ECONOLINE

DC/DC-Converter

REC3-S_DRW/H1 Series

3 Watt

DIP24 & SMD

Single & Dual

Output

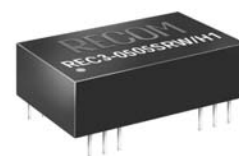
Selection Guide

Part Number	Input Voltage	Output Voltage	Max Cap. Load	Output Current	Efficiency
DIP24 (SMD)	VDC)	(VDC)	(μF)	(mA)	(%)
REC3-xx3.3SRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	3.3	2200	900	66-76
REC3-xx05SRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	5	1000	600	71-79
REC3-xx09SRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	9	470	330	74-83
REC3-xx12SRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	12	220	250	75-85
REC3-xx15SRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	15	120	200	75-86
REC3-xx05DRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	±5	±470	±300	74-83
REC3-xx12DRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	±12	±100	±125	75-85
REC3-xx15DRW/H1	4.5 - 9, 9 - 18, 18 - 36, 36 - 72	±15	±68	±100	75-86
REC3-xx3.3SRWZ/H1	9 - 36, 18 - 72	3.3	2200	900	77-79
REC3-xx05SRWZ/H1	9 - 36, 18 - 72	5	1000	600	78-80
REC3-xx09SRWZ/H1	9 - 36, 18 - 72	9	470	330	80-83
REC3-xx12SRWZ/H1	9 - 36, 18 - 72	12	220	250	83-85
REC3-xx15SRWZ/H1	9 - 36, 18 - 72	15	120	200	83-85
REC3-xx05DRWZ/H1	9 - 36, 18 - 72	±5	±470	±300	77-80
REC3-xx12DRWZ/H1	9 - 36, 18 - 72	±12	±100	±125	83-85
REC3-xx15DRWZ/H1	9 - 36, 18 - 72	±15	±68	±100	83-85

2:1 Input
(REC3-S/DRW/H1)
xx = 4.5-9Vin = 05
xx = 9-18Vin = 12
xx = 18-36Vin = 24
xx = 36-72Vin = 48

4:1 Input
(REC3-S/DRWZ/H1)
xx = 9-36Vin = 24
xx = 18-72Vin = 48

* add suffix "/A", "/B" or "/C" for Pinning, see next page
* add suffix "/M" for metal case
* add suffix "/SMD" for SMD package
e.g. REC3-2412SRW/H1/AM = 1kVDC isol.
/ Pinout "A" / metal case



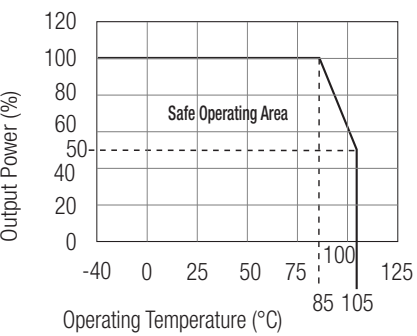
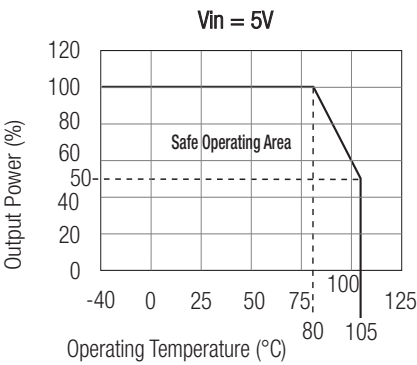
EN-60950-1 Certified



Specifications (Core Operating Area)

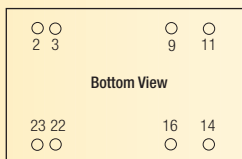
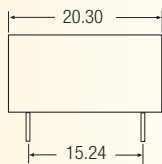
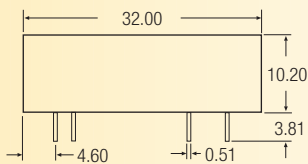
Input Voltage Range			2:1 & 4:1
Output Voltage Accuracy			±2% max.
Line Regulation (HL-LL)	2:1 Input types	±0.3% max.	
	4:1 Input types	±0.3% max.	
Load Regulation (for output load current change from 20% to 100%)			±0.6% max.
Output Ripple and Noise (0,1µF capacitor on output, 20MHz BW)			50mVp-p max.
Switching Frequency at Full Load and nominal Input Voltage	2:1 Input types	90kHz min. / 150kHz max.	
	4:1 Input types	120kHz min. / 180kHz max.	
Input Filter			Network
Efficiency at Full Load			see above
No Load Power Consumption			300mW max.
Isolation Voltage SMD Pinout and metal case		tested for 1 second)	1000VDC min.
Rated Working Voltage		(long term isolation)	see Application Notes
Isolation Voltage	H1 types	(tested for 1 second)	1000VDC min.
Rated Working Voltage		(long term isolation)	see Application Notes
Isolation Capacitance	2:1 Input types	20pF min. / 60pF max.	
	4:1 Input types	40pF min. / 80pF max.	
Isolation Resistance			1 GΩ min.
Short Circuit Protection			Continuous, Auto Restart
Operating Temperature Range (free air convection)	5V input types	-40°C to +80°C (see Graph)	
	others	-40°C to +85°C (see Graph)	
Storage Temperature Range			-55°C to +125°C
Relative Humidity			95% RH
Case Material			Non-Conductive Plastic
Thermal Impedance			Natural convection 20°C/W for metal case
Package Weight			13g
MTBF (+25°C) (+85°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	1043 x 10 ³ hours
		using MIL-HDBK 217F	186 x 10 ³ hours

Derating-Graph
(Ambient Temperature)

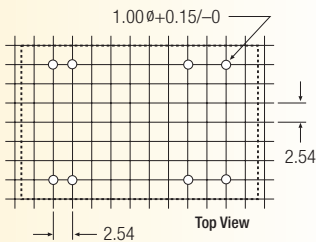


Package Style and Pinning (mm) DIP 24 , Wide Input 2:1 & 4:1

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

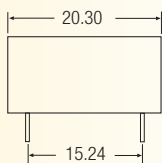
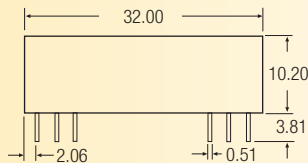
XX.X ± 0.5 mm

XX.XX ± 0.25 mm

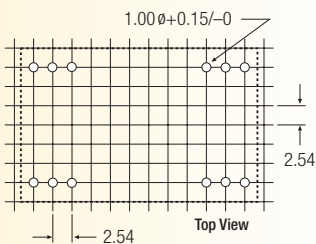
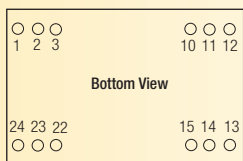
Package Style and Pinning (mm) DIP 24 , Wide Input 2:1 & 4:1



Package B



Recommended Footprint Details

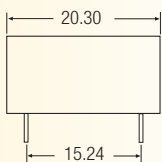
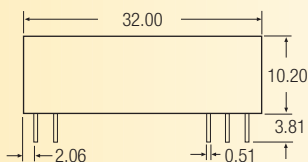


Pin Connections

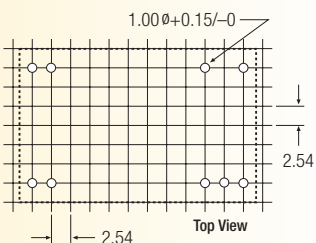
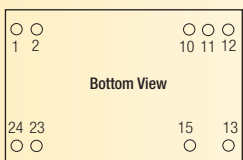
Pin #	Single	Dual
1	+Vin	+Vin
2	No Pin	-Vout
3	No Pin	Com
10	-Vout	Com
11	+Vout	+Vout
12	-Vin	-Vin
13	-Vin	-Vin
14	+Vout	+Vout
15	-Vout	Com
22	No Pin	Com
23	No Pin	-Vout
24	+Vin	+Vin

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

Package C



Recommended Footprint Details

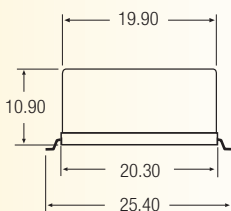
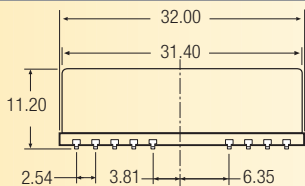


Pin Connections

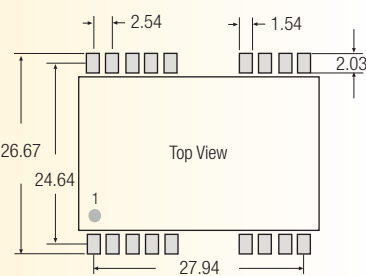
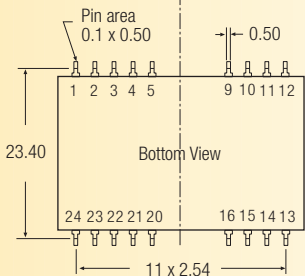
Pin #	Single	Dual
1	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23	-Vin	-Vin
24	-Vin	-Vin

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

All unused pins are
NC (No Connection).
SMD pin connections
follow standard
package pinning.

length of plastic case is 31,8mm, length of metal case 32.0mm