Features

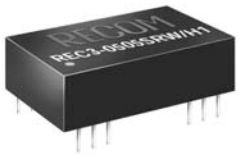
Regulated Converters

- Regulated Output
- 1kVDC, 2kVDC & 3kVDC Isolation Options
- 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(Z)/H* Series

3 Watt DIP24 & SMD Single & Dual Output



EN-60950-1 Certified
EN-60601-1 Certified (Suffix H3)
UL-60950-1 Pending

RECOM

Selection Guide

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

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

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

* use suffix **/H1** for 1kVDC Isolation, **/H2** for 2kVDC Isolation or **/H3** for 3kVDC Isolation.
* 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

Notes:

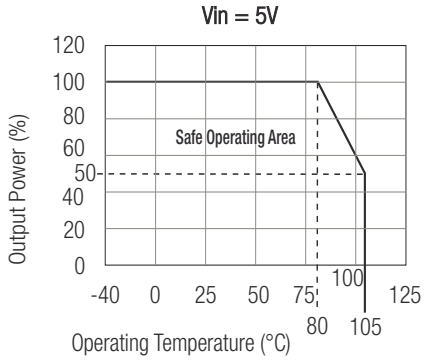
If the options "**/M**" for metal case and "**/SMD**" for SMD pinout are combined the maximum allowed isolation voltage is 2kVDC because of the shorter distances between the pins and the metal-case so the only available SMD-option in metal-case is "**/H2**". DIP-24 through-hole case and SMD-plastic case are not affected and offer the full isolation barriers of 2kVDC for "**/H2**" option and 3kVDC for "**/H3**".
The **/H2** and **/H3** Version is not available in B Pinning.

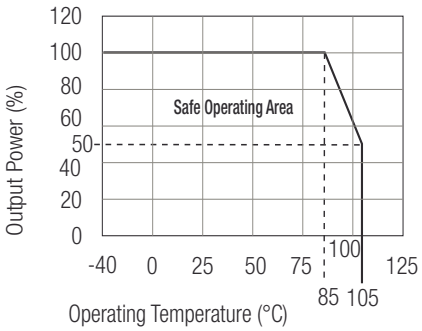
REC3-S_DRW/H* Series

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		2:1 Input types	90kHz min. / 150kHz max.
and nominal Input Voltage		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	H1 types	tested for 1 second)	1000VDC min.
Rated Working Voltage		(long term isolation)	see Application Notes
Isolation Voltage	H2 types	(tested for 1 second)	2000VDC min.
Rated Working Voltage		(long term isolation)	see Application Notes
Isolation Voltage	H3 types	(tested for 1 second)	3000VDC 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		5V input types	-40°C to +80°C (see Graph)
(free air convection)		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) *Detailed Information see*		using MIL-HDBK 217F	1043 x 10^3 hours
(+85°C) *Application Notes chapter "MTBF"*		using MIL-HDBK 217F	186 x 10^3 hours

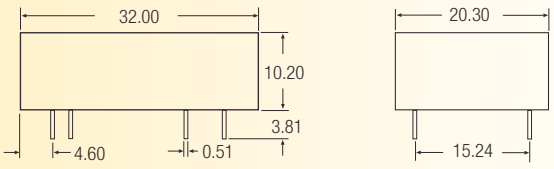
Derating-Graph
(Ambient Temperature)



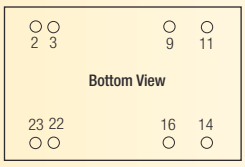


Package Style and Pinning (mm) DIP 24 , Wide Input 2:1 & 4:1

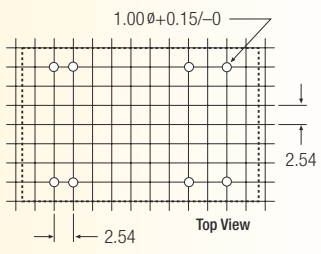
Package A



3rd angle projection



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

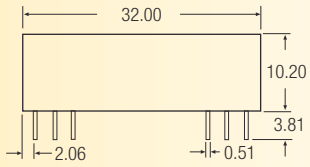
REC3-S_DRW/H* Series

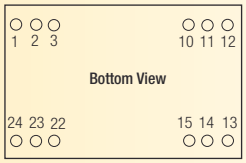
Package Style and Pinning (mm) DIP 24 , Wide Input 2:1 & 4:1

3rd angle projection

Package B

/H1 Only





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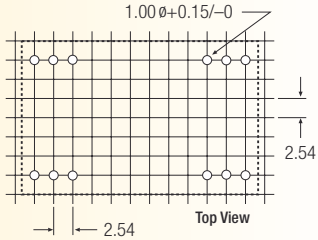
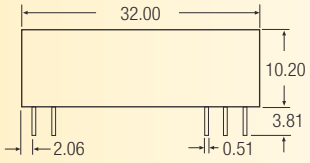
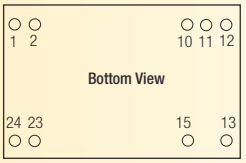


Pin Connections		
Pin #	Single	Dual
1	+Vin	+Vin
2	No Pin	–Vout
3	No Pin	Com
10	–Vout	Com
11	+Vout	+Vout
12	–Vin	–Vin
13	–Vin	–Vin
14	+Vout	+Vout
15	–Vout	Com
22	No Pin	Com
23	No Pin	–Vout
24	+Vin	+Vin

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

Package C





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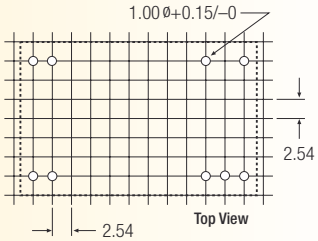
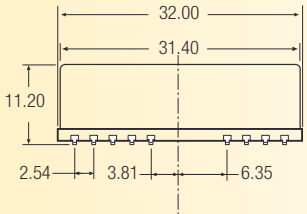
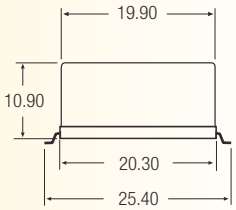


Pin Connections		
Pin #	Single	Dual
1	+Vin	+Vin
2	+Vin	+Vin
10	NC	Com
11	NC	Com
12	–Vout	NC
13	+Vout	–Vout
15	NC	+Vout
23	–Vin	–Vin
24	–Vin	–Vin

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

Mechanical drawings of DIP24 SMD case





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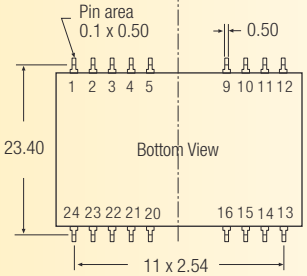

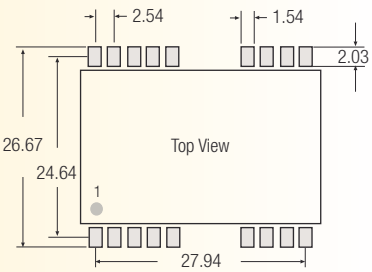

All unused pins are NC (No Connection). SMD pin connections follow standard package pinning. See Notes for restrictions on /H3 SMD versions.

Tol.: ± 0.35 mm

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