

## Features

## Regulated Converters

- 15W in 2" x 1" Package
- 2kVDC and 3kVDC Isolation Options
- 2:1 or 3:1 Input Voltage Range
- Continuous Short Circuit Protection (power limiting)
- Synchronous Rectification on 3.4V & 5.1V outputs
- Full SMD internal design
- Remote Control Pin
- Efficiency to 87%

### Description

The REC15-xxxxS\_D -series offer single and dual regulated outputs in a 2"x1" package with 2kVDC or 3kVDC isolation options and are suitable for higher power industrial or medical applications. Remote on/off control is standard. The outputs with 3A load current have raised output voltages to compensate for track losses as standard.

### Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max. Cap. Load
REC15-xx3.4S/H*	9-18, 18-36, 36-75	3.4	3000	84-85	470µF
REC15-xx5.1S/H*	9-18, 18-36, 36-75	5.1	3000	86-87	470µF
REC15-xx12S/H*	9-18, 18-36, 36-75	12	1250	85-86	220µF
REC15-xx15S/H*	9-18, 18-36, 36-75	15	1000	85-86	100µF
REC15-xx05D/H*	9-18, 18-36, 36-75	±5	±1500	83-84	±220µF
REC15-xx12D/H*	9-18, 18-36, 36-75	±12	±625	85-86	±100µF
REC15-xx15D/H*	9-18, 18-36, 36-75	±15	±500	85-86	±50µF
REC15-xx3.4SZ/H*	12-36, 24-75	3.4	3000	85	470µF
REC15-xx5.1SZ/H*	12-36, 24-75	5.1	3000	87	470µF
REC15-xx12SZ/H*	12-36, 24-75	12	1250	86	220µF
REC15-xx15SZ/H*	12-36, 24-75	15	1000	85	100µF
REC15-xx05DZ/H*	12-36, 24-75	±5	±1500	86	±220µF
REC15-xx12DZ/H*	12-36, 24-75	±12	±625	86	±100µF
REC15-xx15DZ/H*	12-36, 24-75	±15	±500	86	±50µF

\* Standard is /H2 for 2kVDC isolation, use /H3 for 3kVDC Isolation

2:1	3:1
xx = 9-18Vin = 12,	xx = 12-36Vin = 24,
xx = 18-36Vin = 24,	xx = 24-75Vin = 48
xx = 36-75Vin = 48	

### Specifications (measured at $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

Input Voltage Range	2:1 / 3:1
Input Filter	PI Network
Output Voltage Accuracy	±1.5% max.
Line Voltage Regulation	±0.5% max.
Load Voltage Regulation (25% to 100% full load)	Single ±0.5% max. 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.
Worst Case Stabilization Time	1200ms
Operating Frequency (Full Load)	300kHz typ.
Efficiency at Full Load	see Selection Guide
Minimum Load	0%

cont.

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### DC/DC-Converter

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# RECOM

## 15 Watt 2" x 1" Single & Dual Output



E-224736

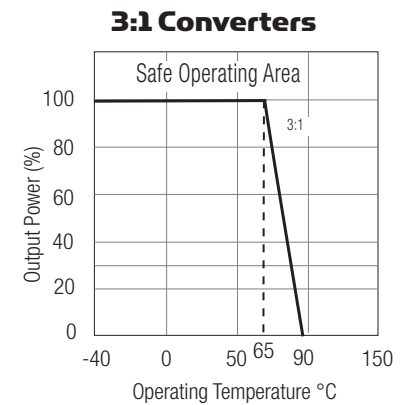
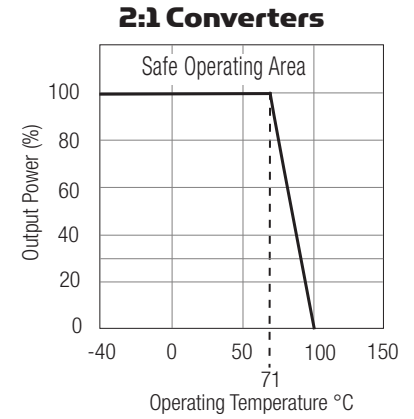
**EN-60950-1 Certified**  
**UL-60950-1 Certified**  
**EN-60601-1 Certified**

# REC15

**Specifications cont.** (measured at  $T_A = 25^\circ\text{C}$ , nominal input voltage, full load and after warm-up)

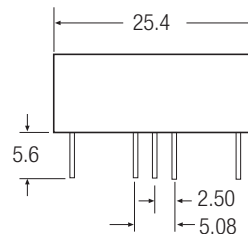
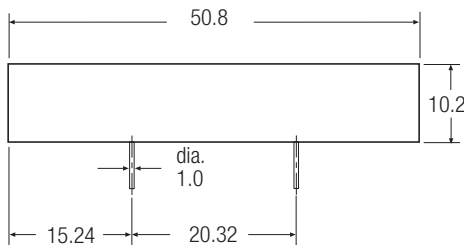
Input Surge Voltage (100ms max.)	12V Input	36VDC	
	24V Input	50VDC	
	48V Input	100VDC	
Isolation Voltage	/H2 Version (tested for 1 second)	2000VDC	
	/H3 Version (tested for 1 second)	1000VAC / 60Hz	
	(rated for 1 minute)	3000VDC	
	(tested for 1 second)	1500VAC / 60Hz	
	(rated for 1 minute)		
Isolation Capacitance		1200pF typ.	
Isolation Resistance		1 G $\Omega$ min.	
Overload Protection		150% typ.	
Short Circuit Protection		Continuous, Auto Restart	
Operating Temperature Range (free air convection)	3:1	-40°C to +65°C (see Graph)	
	2:1	-40°C to +71°C (see Graph)	
Storage Temperature Range		-55°C to +105°C	
Remote On/Off	DC/DC ON	Open or $3.5\text{V} < V_r < 12\text{V}$	
	DC/DC OFF	Short or $0\text{V} < V_r < 1.2\text{V}$	
Temperature Coefficient		$\pm 0.05\%$ max.	
Relative Humidity		95% RH	
Case Material		Nickel Plated Metal with Non-Conductive Base	
Thermal Impedance	Natural convection	20°C/W	
Maximum Case Temperature		100°C	
Vibration		10-55Hz, 2G, 30mins along X,Y & Z	
Package Weight		27g	
Packing Quantity		10 pcs per Tube	
MTBF (+25°C) (+71°C)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	>700 x 10 <sup>3</sup> hours
		using MIL-HDBK 217F	>150 x 10 <sup>3</sup> hours
Certifications			
EN General Safety	Report: PS090302950C2		EN60950-1:2006
UL General Safety	Report: E224736		UL 60950-1 1st Ed. C22.2 No. 60950-1-03
EN/CB Medical Safety	Report: MDD1206085 + RM1206058		IEC/EN60601-1 3rd. Ed. Medical Report + ISO14971 Risk Assessment

## Derating-Graph (Ambient Temperature)

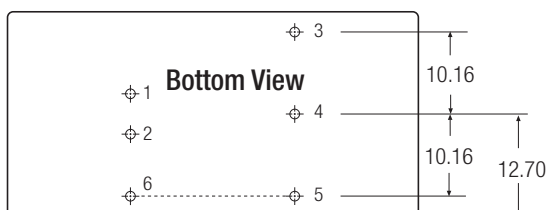


Note: Refer to Application Notes for EMC Class B Filter suggestion

### Package Style and Pinning (mm)



### 2" x 1" Package



### Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Com
5	-Vout	-Vout
6	CTRL	CTRL

XX.X  $\pm 0.5$  mm  
XX.XX  $\pm 0.35$  mm

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