

# Features

## Regulated Converters

- 15W in 2" x 1" Package
- 2kVDC and 3kVDC Isolation Options
- 2:1 or 4:1 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/M -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 applications. Remote on/off control is standard. The converters can deliver 150% rated power for short periods of time to cope with applications with large capacitive loads or high start up currents. 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 (typ.) (%)	Max. Cap. Load
REC15-xx3.4S/H*/M	9-18, 18-36, 36-75	3.4	3000	84-85	3300µF
REC15-xx5.1S/H*/M	9-18, 18-36, 36-75	5.1	3000	86-87	3300µF
REC15-xx12S/H*/M	9-18, 18-36, 36-75	12	1250	85-86	3300µF
REC15-xx15S/H*/M	9-18, 18-36, 36-75	15	1000	85-86	3300µF
REC15-xx05D/H*/M	9-18, 18-36, 36-75	±5	±1500	82-83	±1500µF
REC15-xx12D/H*/M	9-18, 18-36, 36-75	±12	±625	85-86	±1000µF
REC15-xx15D/H*/M	9-18, 18-36, 36-75	±15	±500	85-86	±1000µF
REC15-xx3.4SZ/H*/M	9-36, 18-75	3.4	3000	84-85	3300µF
REC15-xx5.1SZ/H*/M	9-36, 18-75	5.1	3000	87	3300µF
REC15-xx12SZ/H*/M	9-36, 18-75	12	1250	86	3300µF
REC15-xx15SZ/H*/M	9-36, 18-75	15	1000	86	3300µF
REC15-xx05DZ/H*/M	9-36, 18-75	±5	±1500	83	±1500µF
REC15-xx12DZ/H*/M	9-36, 18-75	±12	±625	86	±1000µF
REC15-xx15DZ/H*/M	9-36, 18-75	±15	±500	86	±1000µF

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

	2:1	4:1
xx = 9-18Vin = 12,		xx = 9-36Vin = 24,
xx = 18-36Vin = 24,		xx = 18-75Vin = 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 or 4:1	
Input Filter	PI Network	
Output Voltage Accuracy (the Output 3.4V is $\pm 1.2\%$ max.)	$\pm 1.0\%$ max.	
Line Voltage Regulation	$\pm 0.3\%$ max.	
Load Voltage Regulation (25% to 100% full load )	Single	$\pm 0.5\%$ max.
	Dual	$\pm 1.2\%$ max.
Cross Regulation (100%: 25% to 100% full load )	$\pm 5\%$ max.	
Output Ripple and Noise (with 100n output capacitor and 20MHz BW)	100mVp-p max.	
Start-up time (Nom. Vin at 100% Load)	25ms typ.	
Operating Frequency (Full Load)	300kHz typ.	
Efficiency (Nom. Vin at 100% Load)	see Selection Guide	
Minimum Load	0%	
Input Surge Voltage (100ms max.)	12V Input	36VDC
	24V Input	50VDC
	48V Input	100VDC

cont.

# ECONOLINE

## DC/DC-Converter

with 3 year Warranty

# RECOM

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



E-224736

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

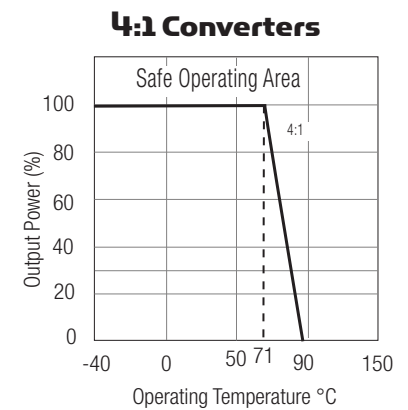
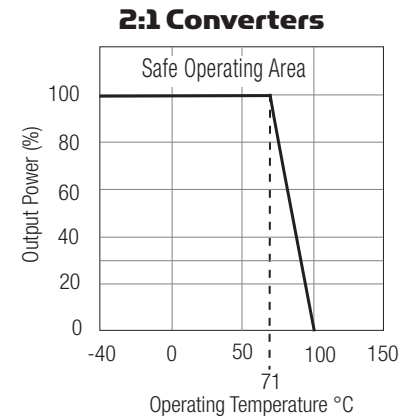
# REC15/M

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

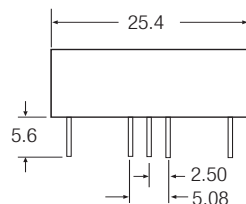
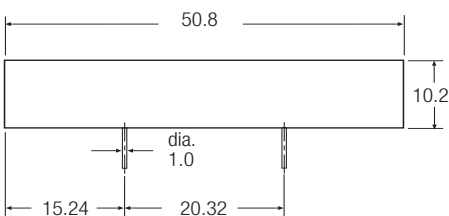
Isolation Voltage	/H2 Version	(tested for 1 second)	2000VDC
		(rated for 1 minute)	1000VAC / 60Hz
	/H3 Version	(tested for 1 second)	3000VDC
		(rated for 1 minute)	1500VAC / 60Hz
Under Voltage Lockout (2:1)	12V Input	DC-DC on 8.3VDC, DC-DC off 7.9VDC	
	24V Input	DC-DC on 17.4VDC, DC-DC off 16.7VDC	
	48V Input	DC-DC on 35.7VDC, DC-DC off 34.3VDC	
Under Voltage Lockout (4:1)	24V Input	DC-DC on 8.3VDC, DC-DC off 7.9VDC	
	48V Input	DC-DC on 17.4VDC, DC-DC off 16.7VDC	
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)	4:1	-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)	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: SPCLVD 1206084-1	EN60950-1:2006 + A12:2011	
UL General Safety	Report: E224736	UL 60950-1 1st Ed.	
		C22.2 No. 60950-1-03	

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

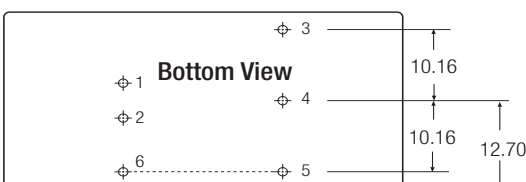
## Derating-Graph (Ambient Temperature)



## Package Style and Pinning (mm)



3rd angle projection



### 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