

Features

Regulated Converters

- 10W 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 all Del outputs
- Full SMD internal design
- Remote Control Pin
- Efficiency to 87%

Description

The REC10-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.

Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (typ.) (%)	Max. Cap. Load
REC10-xx3.3S/H*/M	9-18, 18-36, 36-75	3.3	2000	83-84	2200µF
REC10-xx5.0S/H*/M	9-18, 18-36, 36-75	5.0	2000	86-87	2200µF
REC10-xx12S/H*/M	9-18, 18-36, 36-75	12	833	85-86	2200µF
REC10-xx15S/H*/M	9-18, 18-36, 36-75	15	667	85-86	2200µF
REC10-xx05D/H*/M	9-18, 18-36, 36-75	±5	±1000	82-83	±1000µF
REC10-xx12D/H*/M	9-18, 18-36, 36-75	±12	±416	85-86	±1000µF
REC10-xx15D/H*/M	9-18, 18-36, 36-75	±15	±333	85-86	±1000µF
REC10-xx3.3SZ/H*/M	9-36, 18-75	3.3	2000	82	2200µF
REC10-xx5.0SZ/H*/M	9-36, 18-75	5.0	2000	86	2200µF
REC10-xx12SZ/H*/M	9-36, 18-75	12	833	85	2200µF
REC10-xx15SZ/H*/M	9-36, 18-75	15	667	86	2200µF
REC10-xx05DZ/H*/M	9-36, 18-75	±5	±1000	82	±1000µF
REC10-xx12DZ/H*/M	9-36, 18-75	±12	±416	85	±1000µF
REC10-xx15DZ/H*/M	9-36, 18-75	±15	±333	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°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 3.3V is ±1.2% max.)	±1.0% max.
Line Voltage Regulation	±0.3% max.
Load Voltage Regulation	±0.5% max.
(25% to 100% full load)	±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 (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

10 Watt 2" x 1" Single & Dual Output



E-224736

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

REC10/M

Refer to Application Notes

www.recom-electronic.com

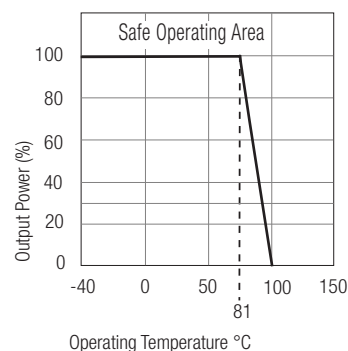
Specifications cont. (measured at $T_A = 25^\circ\text{C}$, nominal input voltage, full load and after warm-up)

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 GΩ min.
Overload Protection			150% typ.
Short Circuit Protection			Continuous, Auto Restart
Operating Temperature Range (free air convection)	4:1	-40°C to +71°C (see Graph)	
	2:1	-40°C to +81°C (see Graph)	
Storage Temperature Range			-55°C to +105°C
Remote On/Off	DC/DC ON	Open or 3.5V<Vr<12V	
	DC/DC OFF	Short or 0V<Vr<1.2V	
Temperature Coefficient			±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	>1000 x 10³hours
		using MIL-HDBK 217F	>250 x 10³hours
Certifications			
EN General Safety	Report: PS090302950C2	EN60950-1:2006	
UL General Safety	Report: E248550	UL 60950-1 1st Ed.	
C22.2 No. 60950-1-03			

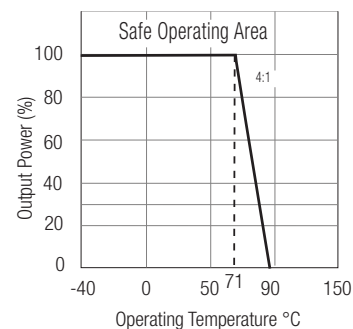
Note: Refer to Application Notes for EMC Class B Filter suggestion

Derating-Graph (Ambient Temperature)

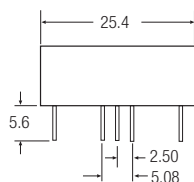
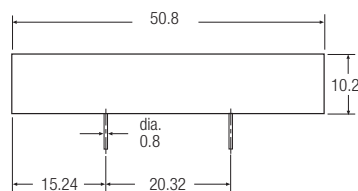
2:1 Converters



4:1 Converters

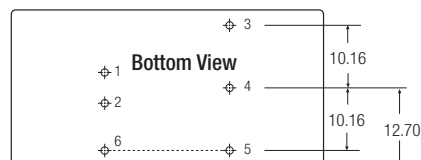


Package Style and Pinning (mm)



3rd angle projection

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 ± 0.5 mm

XX.XX ± 0.35 mm