Features

Unregulated Converters

- 1:1 input range
- 0.25W SIP4 package
- Efficiency up to 82%
- 1kVDC and 2kVDC/1s basic isolation
- Operating temperature from -40°C to +100°C
- Optional continuous short circuit protection

RECOM
DC/DC Converter

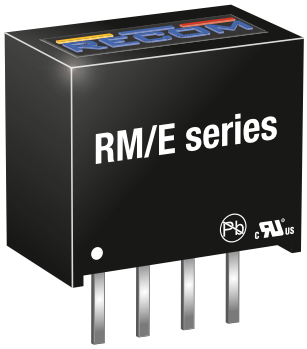
RM/E

0.25 Watt SIP4 Single Output

3 YEAR Warranty

Description

The RM/E series DC/DC converter has been designed to offer exceptionally high efficiency, low quiescent current and an extended operating temperature range. Uses include battery powered supplies, high efficiency designs or high temperature applications.



Selection Guide

Part Number	nom. Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. (1) [%]	max. Capacitive Load (2) [µF]
RM-3.305S/E (3)	3.3	5	50	80	1000
RM-0505S/E (3)	5	5	50	82	1000
RM-1205S/E (3)	12	5	50	78	1000

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Note2: Max Cap Load is tested at nominal input and full resistive load and is defined as the capacitive load that will allow start up in under 1s without damage to the converter

Model Numbering

Notes:

Note3: standard part is with 1kVDC isolation
add suffix „/H“ for 2kVDC isolation

Ordering Examples:

RM-0505S/E: 5V Input Voltage, 5V Output Voltage, Single Output

RM-1205S/EH: 12V Input Voltage, 5V Output Voltage, Single Output with 2kVDC Isolation

RoHS 2+ compliant 10 from 10 — REACH compliant — c UL us E358085

EAC

UL60950-1 certified
CAN/CSA-C22.2 No. 60950-1-03 certified
IEC60950-1 certified
EN60950-1 certified

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm up unless otherwise stated)

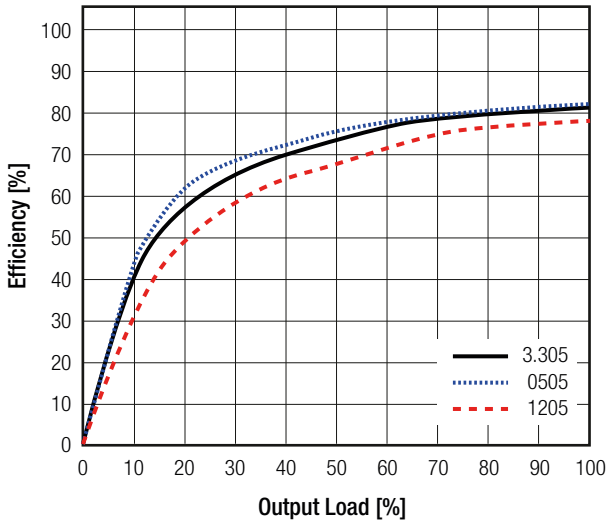
BASIC CHARACTERISTICS

Parameter	Condition		Min.	Typ.	Max.
Input Voltage Range				±10%	
Minimum Load [4]			0%		
Internal Operating Frequency			20kHz		70kHz
Output Ripple and Noise	20MHz BW	RM-3.305S/E others	35mVp-p		60mVp-p 50mVp-p

Notes:

Note4: Operation below 10% load will not harm the converter, but specifications may not be met

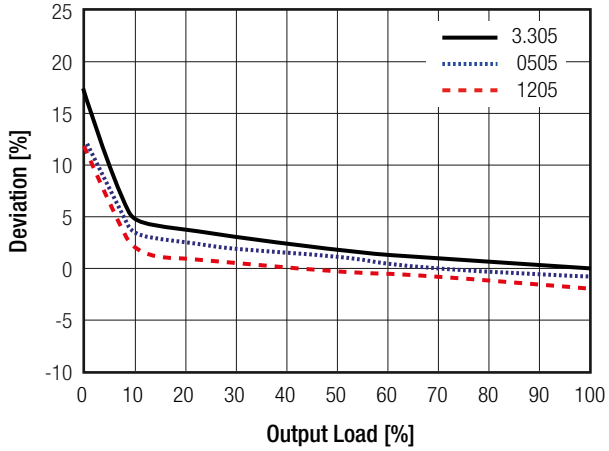
Efficiency vs. Load



REGULATIONS

Parameter	Condition	Value
Output Accuracy		-2% typ. / ±5.0% max.
Line Regulation	low line to high line	±1.2% of 1.0% Vin typ.
Load Regulation	10% to 100% load	4.0% typ. / 10.0% max.

Deviation vs. Load



Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm up unless otherwise stated)

PROTECTIONS

Parameter	Type			Value
Short Circuit Protection (SCP)				1 second
Isolation Voltage [5]	I/P to O/P	without suffix	tested for 1 second rated for 1 minute	1kVDC 500VAC/60Hz
		with suffix "/H"	tested for 1 second rated for 1 minute	2kVDC 1kVAC/60Hz
Isolation Resistance				10GΩ min.
Isolation Capacitance				75pF max.
Insulation Grade				basic

Notes:

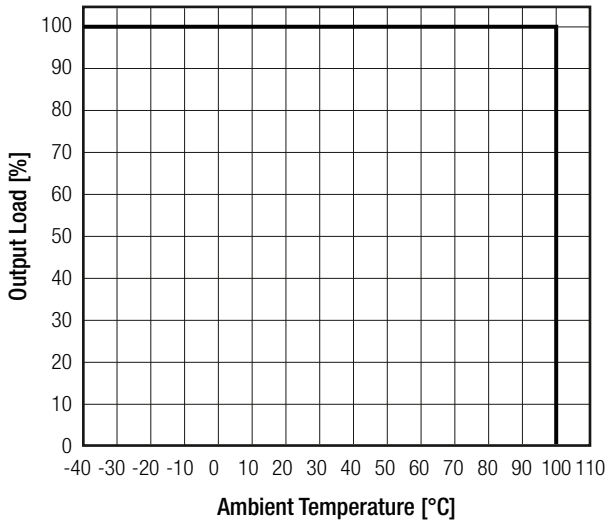
Note5: For repeat Hi-Pot testing, reduce the time and/or the test voltage

Note6: Refer to local wiring regulations if input over-current protection is also required. Recommended fuse: T0.5A slow blow type

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	full load @ free air convection (see graph)		-40°C to +100°C
Operating Altitude			2000m
Operating Humidity	non-condensing		95% RH max.
Pollution Degree			PD2
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +100°C	4494 x 10^3 hours 1352 x 10^3 hours

Derating Graph
(@ free air convection)



Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm up unless otherwise stated)

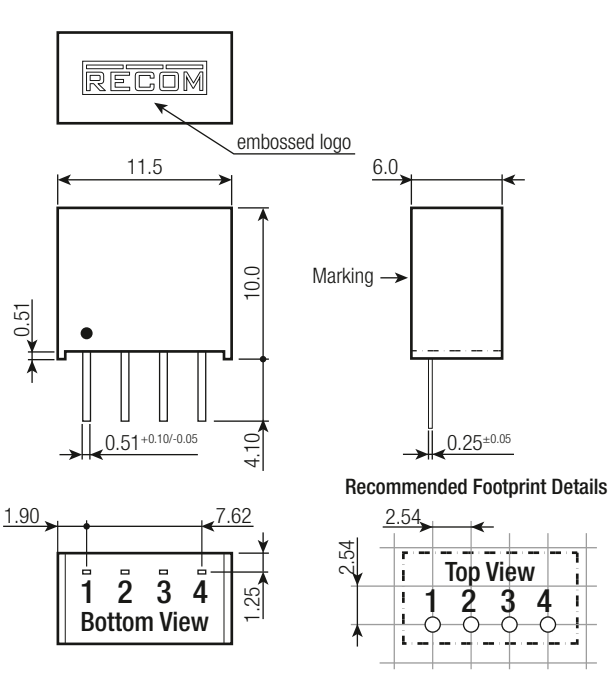
SAFETY AND CERTIFICATIONS

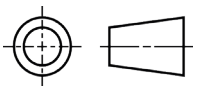
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	1602031	IEC60950-1:2005, 2nd Edition + A2:2013 EN60950-1:2006 + A2:2013
Information Technology Equipment, General Requirements for Safety	E358085-A4-UL	UL60950-1, 2nd Edition:2007 CAN/CSA C22.2 No. 60950-1-03, 2nd Edition:2007
EAC	RU-AT.49.09571	TP TC 004/2011
RoHs 2+		RoHS-2011/65/EU + AM-2015/863

DIMENSION AND PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting PCB	non-conductive black plastic (UL94 V-0) epoxy, (UL94 V-0) FR4, (UL94 V-0)
Dimension (LxWxH)		11.5 x 6.0 x 10.0mm
Weight		1.4g typ.

Dimension Drawing (mm)





Pinning information

Pin #	Single
1	-Vin
2	+Vin
3	-Vout
4	+Vout

Tolerance:
xx.x= ±0.5mm
xx.xx= ±0.25mm

PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	520.0 x 16.0 x 9.0mm
Packaging Quantity	tube	42pcs
Storage Temperature Range		-55°C to + 125°C
Storage Humidity		95% RH max.