Features

Unregulated Converters

- Low Cost 1W Converter
- Industry Standard Pinout
- SIP4 Package
- 1kVDC Isolation
- Efficiency up to 80%
- Wide Operating Temperature Range -40°C to +85°C
- UL-60950-1 Certified

RECOM

DC/DC Converter

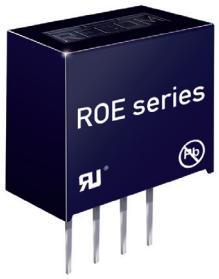
ROE

1 Watt SIP4 Single Output

3 YEAR warranty

Description

The ROE DC/DC converters are typically used in general purpose power isolation and voltage matching applications, and feature a full industrial operating temperature range of -40°C to +85°C without derating.



Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	max. Capacitive Load [1] (µF)
ROE-3.305S	3.3	5	200	79	470
ROE-0505S	5	5	200	79	470
ROE-0512S	5	12	84	80	220
ROE-0515S	5	15	66	80	220
ROE-1205S	12	5	200	80	470
ROE-1505S	15	5	200	79	470
ROE-2405S	24	5	200	80	470

Notes:

Note1: Max. capacitive load is tested at nominal input voltage and full load.

c UL us E358085

UL-60950-1 Certified

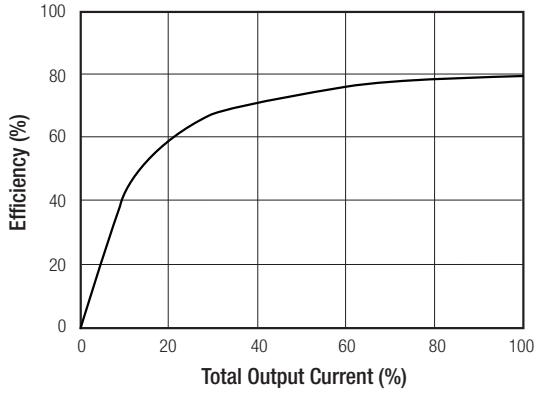
Specifications (measured at T_A= 25°C, nominal input voltage, full load and after warm up)

BASIC CHARACTERISTICS

Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range				±10%
Operating Frequency Range	Vin nominal	50kHz	80kHz	105kHz
Output Ripple and Noise	20MHz bandwidth		50mVp-p	100mVp-p

Efficiency vs. Load

ROE-0505S



Refer to Applications Notes

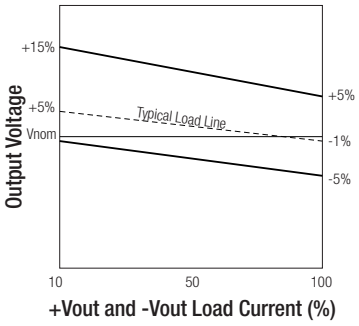
Specifications (measured at T_A= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

REGULATIONS

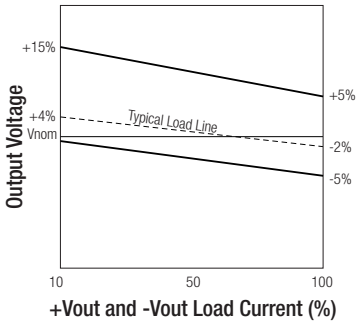
Parameter	Condition	Values
Output Voltage Accuracy	100% load, Vin nominal	±5% max.
Line Voltage Regulation	low line to high line, full load	±1.2% typ. / 1% Vin
Load Voltage Regulation	20% to 100% load, 5Vout 20% to 100% load, 12Vout and 15Vout	15% max. 10% max.

Tolerance Envelope

Vin= 3.3V, 5V



Vin= 12V, 15V, 24V



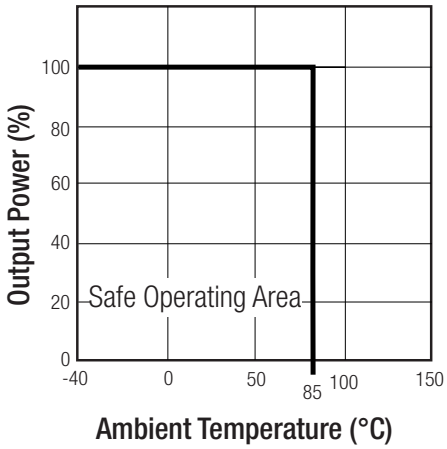
PROTECTIONS

Parameter	Condition	Value
Isolation Voltage	I/P to O/P	1kVDC / 1 second
Isolation Capacitance		75pF max.
Isolation Resistance		1GΩ min.

ENVIRONMENTAL

Parameter	Condition	Value
Operating Temperature Range	free air convection (see graph)	-40°C to +85°C
Operating Humidity	non-condensing	95% RH max.
Vibration		MIL-STD-202G
MTBF (+25°C) (+85°C)	according to MIL-HDBK-217F, full load	22380 x 10^3 hours 9300 x 10^3 hours

Derating Graph



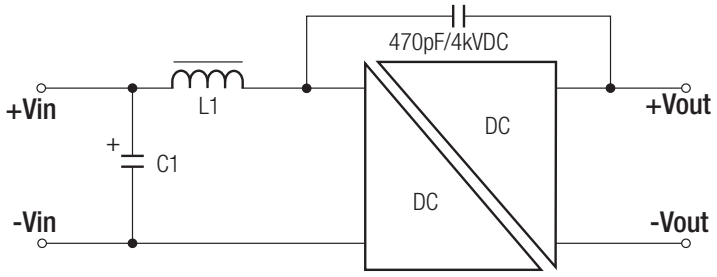
Specifications (measured at T_A= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
UL General Safety	E358085-A4	UL-60950-1, 2nd Edition
CAN/CSA General Safety	E358085-A4	C22.2 No. 60601-1:08

Certificate Type (Environmental)	Condition	Standard / Criterion
EMC	Conducted and Radiated	EN55022, Class A (no external filter necessary) EN55022 Class B only with external filter (see suggestions)

EMC Filtering - Suggestions for Class B



ROE Series

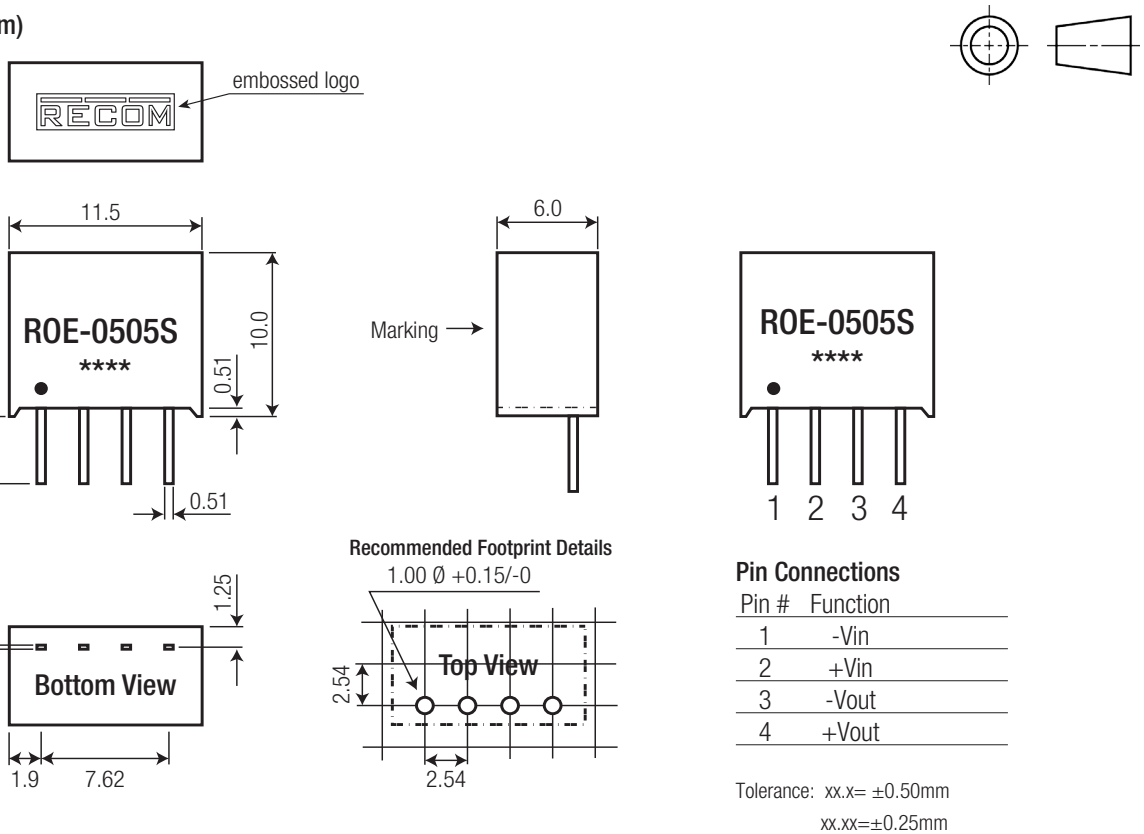
C1	L1	Vin
22µF	3.3µH	3.3V
10µF	4.7µH	5V
4.7µF	22µH	12V
4.7µF	22µH	15V
22µF	47µH	24V

C1 = MLCC
L1 = SMD Inductor

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Case Material Potting Material		non-conductive black plastic (UL94V-0) Epoxy (UL94V-0)
Package Dimension (LxWxH)		11.5 x 6.0 x 10.0mm
Package Weight		1.4g

Dimension Drawing (mm)



Pin Connections

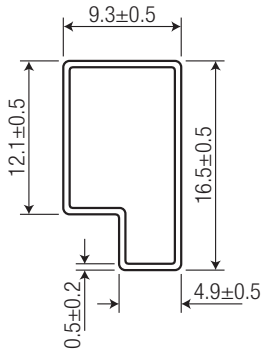
Pin #	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

Tolerance: xx.x= ±0.50mm
xx.xx=±0.25mm

Specifications (measured at T_A= 25°C, nominal input voltage, full load and after warm-up)

PACKAGING INFORMATION		
Parameter	**Type**	**Value**
Packaging Dimension (LxWxH)	Tube	520 x 16 x 9mm
Packaging Quantity		42 pcs
Storage Temperature Range		-55°C to +125°C

Tube Dimension Drawing (mm)



The product information and specifications are subject to change without prior notice. RECOM products are not authorized for use in safety-critical applications (such as life support) without RECOM's explicit written consent. A safety-critical application is defined as an application where a failure of a RECOM product may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The buyer shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.