



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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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
- UL60950-1 Certified

ROE

1 Watt
SIP4
Single Output



Description

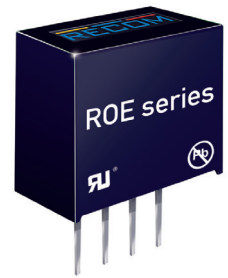
The ROE DC/DC converters are typically used in general purpose power isolation and voltage matching applications, and feature a full industrial operating temperature range of -40°C to +85°C without derating.

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.

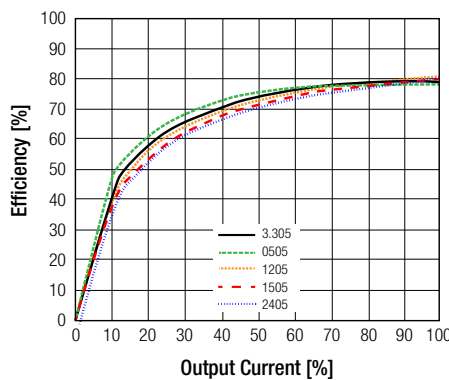
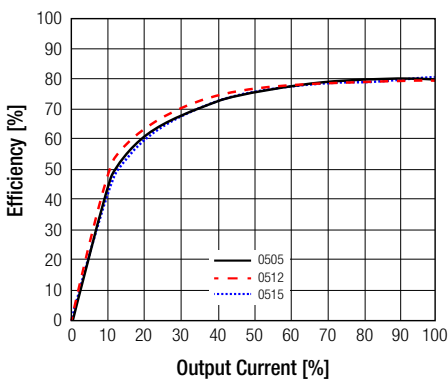


Specifications (measured at T_a= 25°C, nominal input voltage, full load and after warm up)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range				±10%
Operating Frequency Range	V _{in} nominal	50kHz	80kHz	105kHz
Output Ripple and Noise ⁽²⁾	20NMHz BW		50mVp-p	100mVp-p

UL60950-1 Certified

Efficiency vs. Load



Notes:

Note2: Measurements are made with a 100nF MLCC across output. (low ESR)

Specifications (measured at $T_a = 25^\circ\text{C}$, nominal input voltage, full load and after warm up unless otherwise specified)

REGULATIONS		
Parameter	Condition	Values
Output Voltage Accuracy	100% load, V_{in} nominal	$\pm 5\%$ max.
Line Voltage Regulation	low line to high line, full load	$\pm 1.2\%$ typ. / 1% V_{in}
Load Voltage Regulation	20% to 100% load, $5V_{out}$	15% max.
	20% to 100% load, $12V_{out}$ and $15V_{out}$	10% max.

Tolerance Envelope		
	$V_{in} = 3.3V, 5V$	

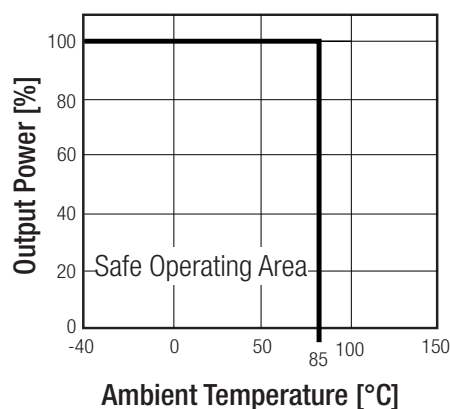
PROTECTIONS		
Parameter	Condition	Value
Isolation Voltage	I/P to O/P	1kVDC / 1 second
Isolation Capacitance		75pF max.
Isolation Resistance		1G Ω min.

ENVIRONMENTAL			
Parameter	Condition	Value	
Operating Temperature Range	free air convection (see graph)	-40°C to $+85^\circ\text{C}$	
Operating Humidity	non-condensing	95% RH max.	
Vibration		MIL-STD-202G	
MTBF ⁽³⁾	according to MIL-HDBK-217F	$+25^\circ\text{C}$	20140×10^3 hours
		$+85^\circ\text{C}$	8674×10^3 hours

Notes:

Note3: MTBF is referring ROE-3.305S.

Derating Graph



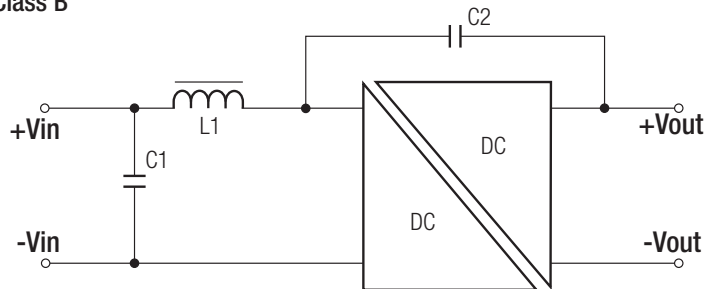
Specifications (measured at $T_A = 25^\circ\text{C}$, nominal input voltage, full load and after warm up unless otherwise specified)a

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. 60950-1-07

EMI Compliance	Condition	Standard / Criterion
EMC Conducted and Radiated	only with external filter (see suggestions)	EN55022, Class A EN55022, Class B

EMC Filtering - Suggestions for Class B



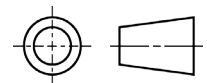
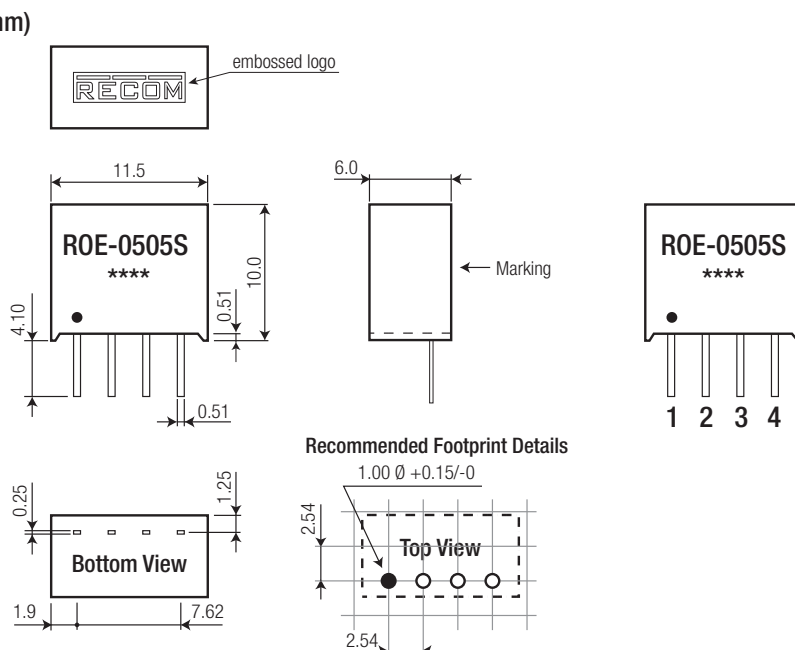
EN55022 Class A	Input Voltage	C1	L1	C2
	3.3	10 μF	1.2 μH	470pF/4kVDC
	5	10 μF	3.3 μH	470pF/4kVDC
	12	2.2 μF	10 μH	470pF/4kVDC
	15	2.2 μF	10 μH	470pF/4kVDC
	24	2.2 μF	22 μH	470pF/4kVDC

EN55022 Class B	Input Voltage	C1	L1	C2
	3.3	22 μF	3.3 μH	470pF/4kVDC
	5	10 μF	4.7 μH	470pF/4kVDC
	12	4.7 μF	22 μH	470pF/4kVDC
	15	4.7 μF	22 μH	470pF/4kVDC
	24	2.2 μF	47 μH	470pF/4kVDC

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Case Material		non-conductive black plastic (UL94V-0)
Potting Material		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= $\pm 0.50\text{mm}$
xx.xx= $\pm 0.25\text{mm}$

Specifications (measured at $T_a = 25^\circ\text{C}$, 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 $+125^\circ\text{C}$

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