

Features

Unregulated Converter

- 1:1 Input Range
- SMD Package
- Efficiency up to 75%
- 1kVDC Isolation
- Operating Temperature from -40°C to +85°C
- UL Certified

Selection Guide

Part Number SMD	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)
R1SE**-0505*	5	5	200	75

*add suffix -R for tape & reel packing

Case and Pinning Options

** without marking denotes 5 pins out of 8 fitted
with marking 8 denotes 8 pins out of 8 fitted

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

Input Voltage Range		$\pm 10\%$ max.
Voltage set Accuracy	100% Load/nominal Vin	-2% typ. / $\pm 5\%$ max.
Line Regulation	Low Line to High Line @ max. Load	1.2% typ.
Load Regulation	(10% to 100% Load)	10% typ. / 15% max.
Ripple & Noise @ 20MHz BW		68mVp-p typ. / 100mVp-p max.
Efficiency	100% Load	70% min. / 75% max.
Operating Temperature		-40°C to + 85°C
Storage Temperature		-55°C to +125°C
Isolation Test Voltage	(tested for 1 second) (rated for 1 minute***)	1000VDC 500VAC / 60Hz
Isolation Capacitance		75pF max.
Isolation Resistance	Viso = 500V	10 G Ω min.
Humidity		95% max.
Operating Frequency	Vin (nom.)	20kHz min. / 70 kHz max.
Short-Circuit Protection		1 Second
Weight		1.0g
MTBF	Using MIL-HDBK 217F (+90°C) Using MIL-HDBK 217F (+25°C)	172 x 10 ³ hours 1022 x 10 ³ hours

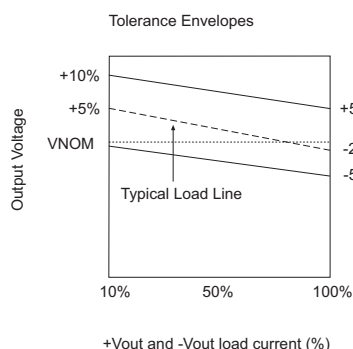
Detailed Information see Application Notes chapter „MTBF“

Certification

UL General Safety Report: E358085-A2 UL60950-1

***Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

Tolerance Envelopes



ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

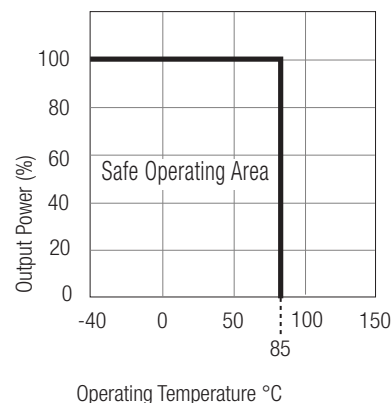
1 Watt SMD Isolated Single Output



UL-60950-1 Certified

R1SE

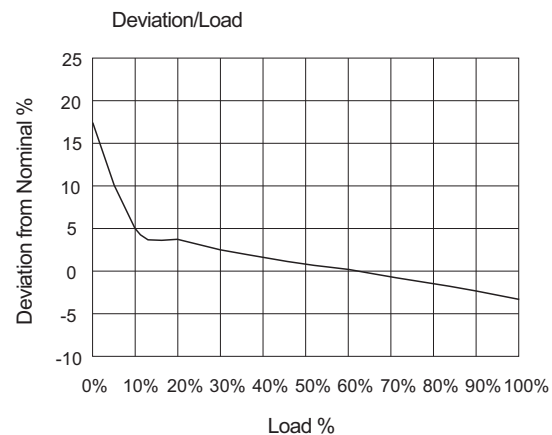
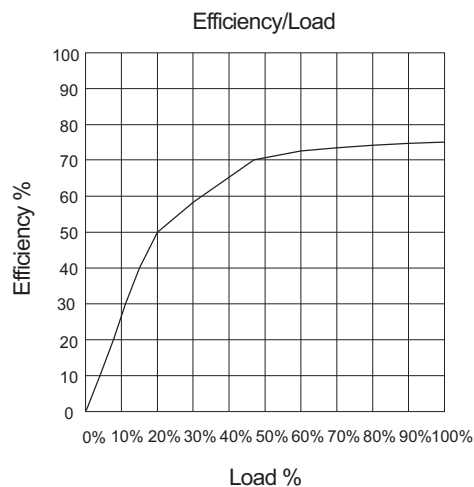
Derating-Graph (Ambient Temperature)



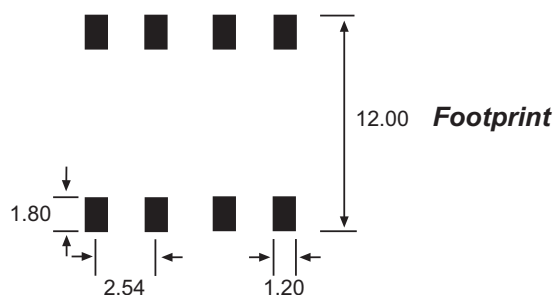
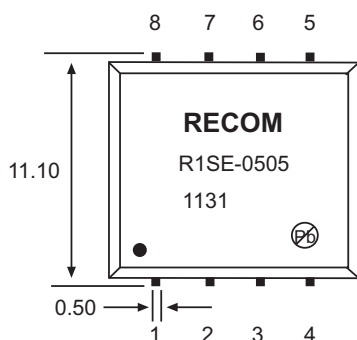
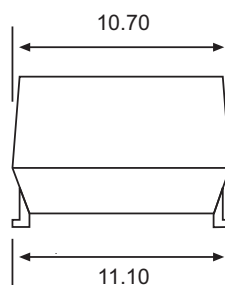
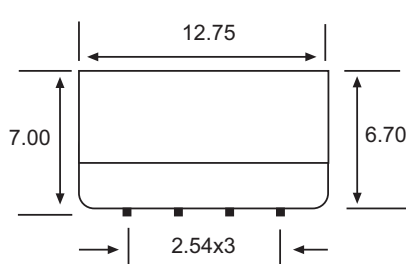
Refer to Application Notes

Typical Characteristics

R1SE-0505



Package Style and Pinning (mm)



Pin Connections

Pin #	Function for 5 Pins	Function for 8 Pins
1	-Vin	- Vin
2	+Vin	+Vin
4	-Vout	-Vout
5	+Vout	+Vout
3, 6, 7	No Pin	NC
8	NC	NC

NC= No Connection

UNIT: mm
TOL.: ± 0.25 mm

Features

Unregulated Converters

- SMD Case Style
- Tape and Reel Packaging
- UL-60950-1 Certified
- High Operating Temperature Range from -40°C to 100°C
- Efficiency up to 76%
- 2kVDC isolation

RECOM
DC/DC Converter

R1SE/H2

**1 Watt
SMD
Single Output**



Description

The R1SE/H2 series are 1W unregulated DC/DC converters that are lower cost than equivalent converters. The benefits of high volume production and semi-automatic assembly allow for a lower selling price without sacrificing our high quality standards. They are UL certified for safety, offer reasonable efficiency and still meet the full industrial operating temperature range of -40° to +100°C. All converters are 100% tested in production and carry our 3-year warranty.

Selection Guide

Part Number	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency typ. (%)	max. Capacitive Load ⁽¹⁾ (μF)
R1SE-3.305/H2-R	3.3	5	200	75	1000
R1SE-0505/H2-R	5	5	200	75	1000
R1SE-0512/H2-R	5	12	84	76	330
R1SE-0515/H2-R	5	15	66	76	220
R1SE-1205/H2-R	12	5	200	73	1000
R1SE-1505/H2-R	15	5	200	74	1000

Notes:

Note1: Max. capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter.



UL
c **US**
E358085

Specifications (measured at T_A= 25°C, nominal input voltage and rated current unless otherwise specified)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range				±10%
Operating Frequency	V _{in} nominal	20kHz	60kHz	100kHz
Output Ripple and Noise	20MHz bandwidth		50mVp-p	100mVp-p

Efficiency vs. Load				
			xx05	
			xx12	
			xx15	

UL-60950-1 Certified

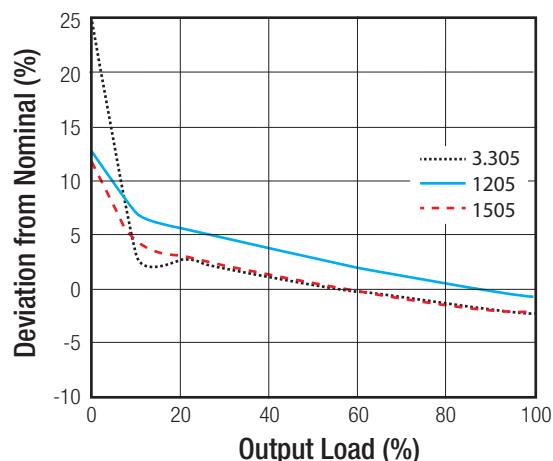
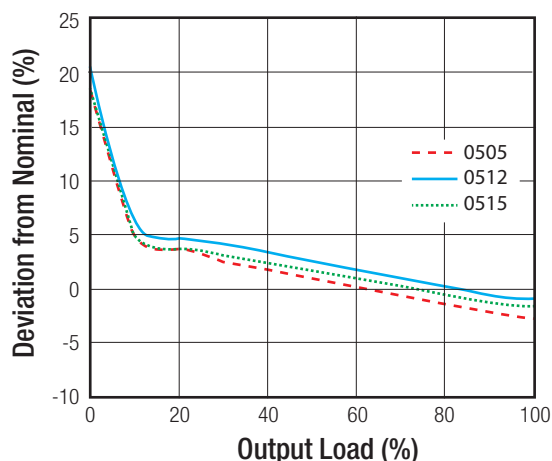
Refer to Applications Notes

Specifications (measured at $T_A = 25^\circ\text{C}$, nominal input voltage and rated current unless otherwise specified)

REGULATIONS

Parameter	Condition	Values
Output Voltage Accuracy		-2% typ. / $\pm 5\%$ max.
Line Voltage Regulation	low line to high line, max. load	$\pm 1\%$ typ. / $\pm 1.5\%$ max.
Load Voltage Regulation	20% - 100% load	$\pm 6\%$ typ. / $\pm 10\%$ max.

Deviation vs. Load



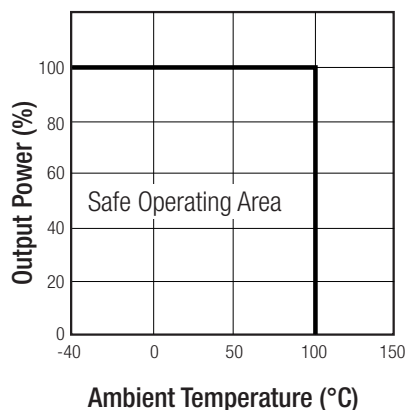
PROTECTIONS

Parameter	Condition	Value
Isolation Voltage		2kVDC / 1 second
Isolation Capacitance		75pF max.
Isolation Resistance	$V_{iso} = 500\text{V}$	$10\text{G}\Omega$ min.

ENVIRONMENTAL

Parameter	Condition	Value
Operating Temperature Range		-40°C to $+100^\circ\text{C}$
Storage Temperature Range		-55°C to $+125^\circ\text{C}$
Humidity	non-condensing	95% RH max.
MTBF ($+25^\circ\text{C}$) ($+85^\circ\text{C}$)	according to MIL-HDBK-217F, full load	2992×10^3 hours 955×10^3 hours

Derating Graph



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

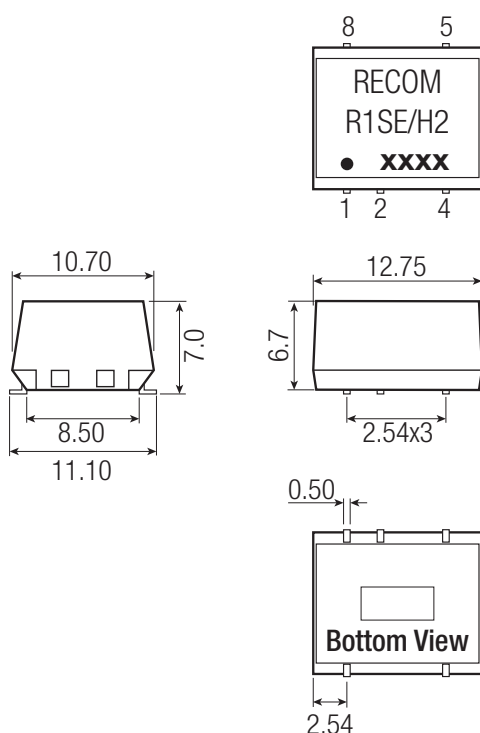
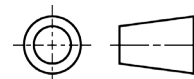
SAFETY AND CERTIFICATIONS

Certificate Type	Report / File Number	Standard
UL General Safety	E358085-A2	UL-60950-1, 2nd Edition CAN/CSA C22.2 No. 60950-1-07, 2nd Edition

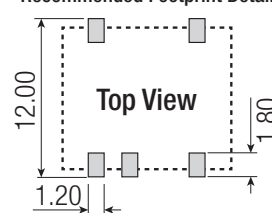
DIMENSIONS and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	Case	non-conductive black plastic
Package Dimensions (LxWxH)		12.75 x 10.7 x 6.7mm
Package Weight		1.0g
Packaging Quantity	Tape and Reel	500pcs
Tape and Reel Width		24mm

Mechanical Dimensions (mm)



Recommended Footprint Details



Pin Connections

Pin #	Function
1	-Vin
2	+Vin
4	-Vout
5	+Vout
8	NC

NC: no connection
Tolerance: xx.x= ±0.50mm
xx.xx= ±0.25mm

AMEYA360

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