

Features

Unregulated Converters

- Low cost 1W converter
- 1:1 input voltage range
- SIP7 package
- Efficiency up to 76%
- -40°C to +85°C operating temperature range
- EN/IEC/UL/CSA 60950-1 certified

Description

The REE-0505S is a low cost 1W DC/DC converters in a standard SIP7 footprint. This makes it suitable for price sensitive industrial, test and measurement and high volume applications. The REE converter is pin-compatible with the RE converter series, but offers only the most popular 0505 voltage combination, offering a simple way to cost-down an existing application. The REE is certified to IEC/EN/UL/CSA/EAC and comes with a 3 year warranty.

Selection Guide

| Part Number | Input Voltage [VDC] | Output Voltage [VDC] | Output Current [mA] | Efficiency ⁽¹⁾ max. [%] |
|-------------|---------------------|----------------------|---------------------|------------------------------------|
| REE-0505S | 5 | 5 | 200 | 76 |

Notes:

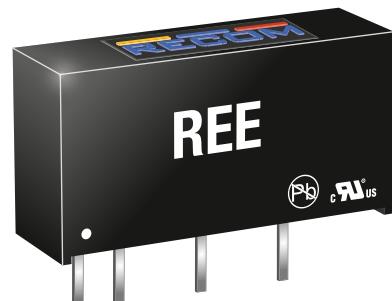
Note1: Efficiency is tested at nominal input and full load at +25°C ambient

REE

1 Watt

SIP7

Single Output

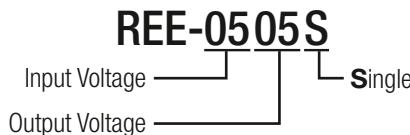


c **UL** us
E358085



UL60950-1 certified
CAN/CSA-C22.2 No 60950-1 certified
IEC/EN60950-1 certified
EN55032 compliant

Model Numbering



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

BASIC CHARACTERISTICS

| Parameter | Condition | Min. | Typ. | Max. |
|-------------------------------|----------------|----------|---------------------|----------|
| Input Voltage Range | | | ±10% | |
| Input Surge Voltage | 100µs | -0.65VDC | | 9VDC |
| Input Current | full load | | 250mA | |
| Quiescent Current | nom. Vin= 5VDC | | 25mA | 30mA |
| Minimum Load ⁽²⁾ | | 0% | | |
| Internal Operating Frequency | | 50kHz | 82kHz | 105kHz |
| Output Ripple and Noise | 20MHz BW | | 55mVp-p | 100mVp-p |
| Reflected Back Ripple Current | 20MHz BW | | 20mA _{p-p} | |

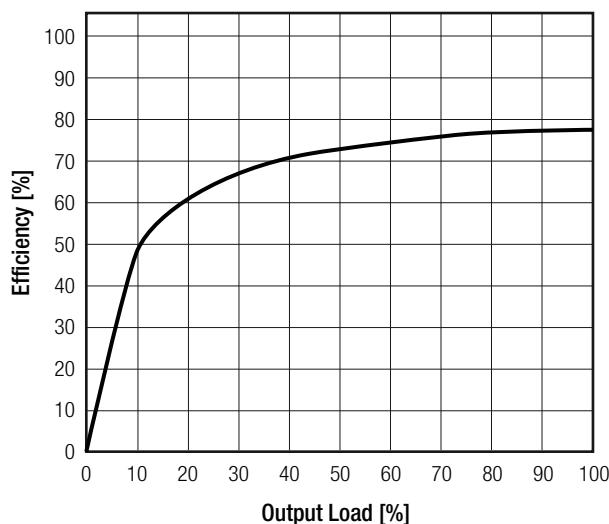
Notes:

Note2: Operation below 10% load won't harm the converter, but specifications may not be met

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

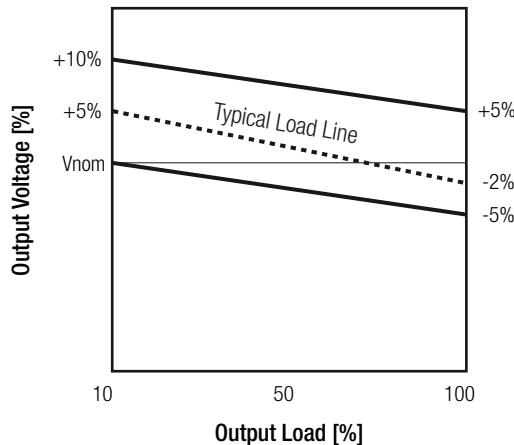
Efficiency vs. Load



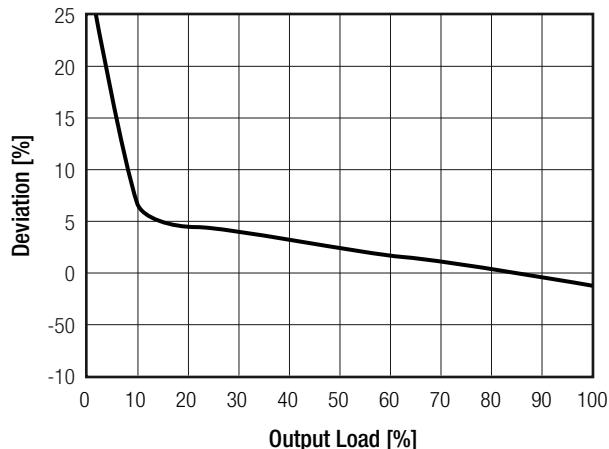
REGULATIONS

| Parameter | Condition | Values |
|-----------------|----------------------------------|-----------------------------------|
| Output Accuracy | | -2% typ. / $\pm 5.0\%$ max. |
| Line Regulation | low line to high line, full load | $\pm 1.2\%$ of 1.0% V_{in} typ. |
| Load Regulation | 20% to 100% | 10% max. |

Tolerance Envelope



Deviation vs. Load



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

PROTECTIONS

| Parameter | Condition | | Value |
|----------------------------------|---------------------|---|----------------------|
| Short Circuit Protection (SCP) | below 100m Ω | | 1 second |
| Isolation Voltage ⁽³⁾ | I/P to O/P | tested for 1 second rated for 1 minute | 1kVDC 500VAC/60Hz |
| Isolation Resistance | | | 1G Ω min. |
| Isolation Capacitance | | | 75pF max. |
| Insulation Grade | | | basic |

Notes:

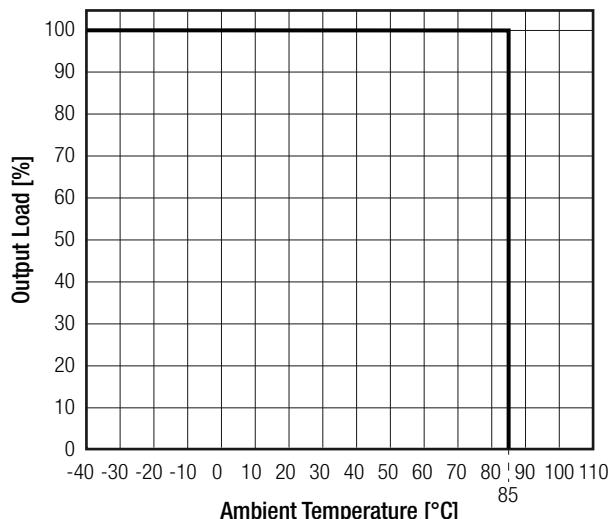
Note3: For repeat Hi-Pot testing, reduce the time and/or the test voltage

Note4: Refer to local wiring regulations if input over-current protection is also required. Recommended fuse: T1A slow blow type

ENVIRONMENTAL

| Parameter | Condition | Value |
|-----------------------------|----------------------------------|---|
| Operating Temperature Range | full derating (see graph) | -40°C to +85°C |
| Maximum Case Temperature | | +105°C |
| Temperature Coefficient | | $\pm 0.05\%/\text{C}$ |
| Thermal Impedance | 0.1m/s, horizontal direction | 40°C/W |
| Operating Altitude | | 2000m |
| Operating Humidity | non-condensing | 95% RH max. |
| Pollution Degree | | PD2 |
| MTBF | according to MIL-HDBK-217F, G.B. | +25°C +85°C |
| | | 2400 x 10 ³ hours 650 x 10 ³ hours |

Derating Graph

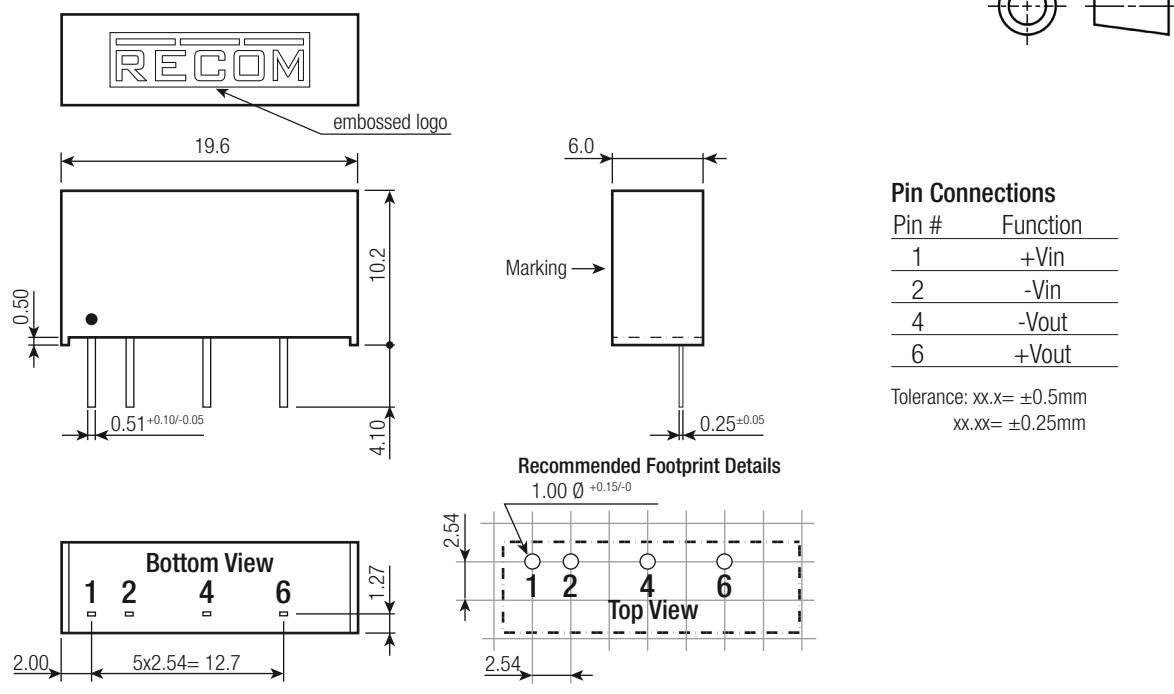


Specifications (measured @ Ta= 25°C, nominal input voltage, full load and after warm-up)
SAFETY AND CERTIFICATIONS

| Certificate Type (Safety) | Report/File Number | Standard |
|---|--------------------|---|
| Information Technology Equipment, General Requirements for Safety | E358085-A4 | UL60950-1, 2nd Edition, 2007 CSA C22.2 No. 60950-1-07, 2nd Edition, 2007 |
| Information Technology Equipment, General Requirements for Safety | 1602031 | IEC60950-1:2005, 2nd Edition + A2:2013 EN60950-1:2006 + A2:2013 |
| 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 | non-conductive black plastic (UL94 V-0) epoxy (UL94 V-0) |
| Dimension (LxWxH) | | 19.6 x 6.0 x 10.2mm |
| Weight | | 2.2g typ. |

Dimension Drawing (mm)

PACKAGING INFORMATION

| Parameter | Type | Value |
|-----------------------------|------|----------------------|
| Packaging Dimension (LxWxH) | tube | 520.0 x 16.0 x 9.0mm |
| Packaging Quantity | | 25pcs |
| Storage Temperature Range | | -55°C to +125°C |
| Storage Humidity | | 5% - 95%, RH |

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