

# Features

## Unregulated Converters

- 1:1 input range
- Low cost 1W converter
- Efficiency up to 76%
- -40°C to +85°C operating temperature range
- EN/IEC/UL60950-1 certified

**RECOM**  
DC/DC Converter

## RBE

**1 Watt  
SIP7  
Single Output**



### Description

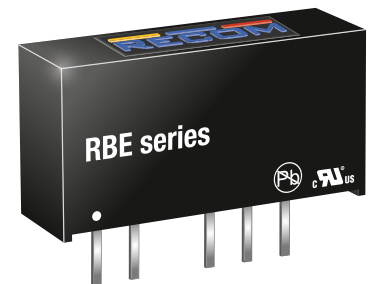
The RBE-0505S is a low cost 1W DC/DC converters in a standard SIP7 footprint. This makes it suitable for price sensitive industrial, test and measurement and high volume applications. The RBE converter is pin-compatible with the RB converter series, but offers only the most popular 0505 voltage combination,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

### Selection Guide

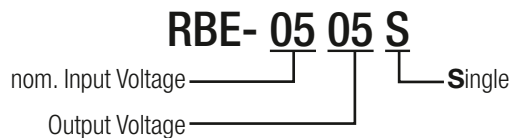
| Part Number | Input Voltage [VDC] | Output Voltage [VDC] | Output Current [mA] | Efficiency <sup>(1)</sup> max. [%] |
|-------------|---------------------|----------------------|---------------------|------------------------------------|
| RBE-0505S   | 5                   | 5                    |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

#### Notes:

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



### Model Numbering



#### Ordering Examples:

RBE-0505S: 5VDC Input Voltage, 5VDC Output Voltage, Single Output



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

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

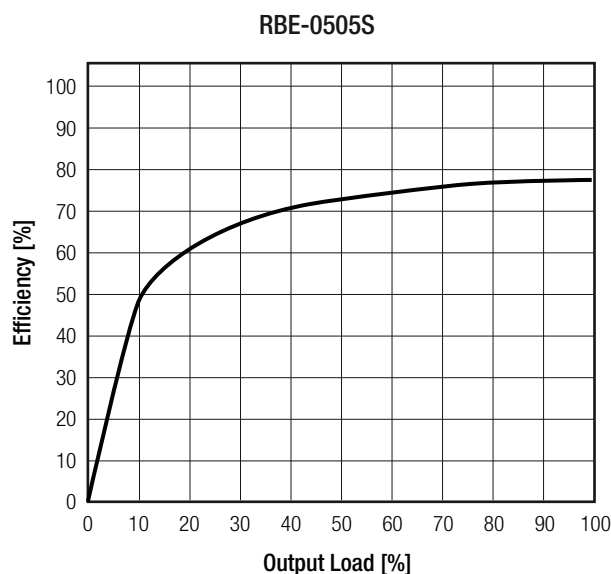
### BASIC CHARACTERISTICS

| Parameter                    | Condition | Min.  | Typ.    | Max.     |
|------------------------------|-----------|-------|---------|----------|
| Input Voltage Range          |           |       | ±10%    |          |
| Minimum Load <sup>(2)</sup>  |           | 0%    |         |          |
| Internal Operating Frequency |           | 50kHz | 82kHz   | 105kHz   |
| Output Ripple and Noise      | 20MHz BW  |       | 52mVp-p | 100mVp-p |

#### Notes:

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

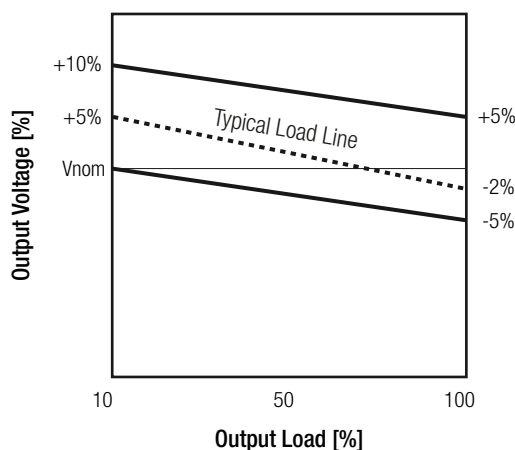
### Efficiency vs. Load



### REGULATIONS

| Parameter       | Condition             | Value                 |
|-----------------|-----------------------|-----------------------|
| Output Accuracy |                       | -2% typ. / ±5.0% max. |
| Line Regulation | low line to high line | ±1.2% typ.            |
| Load Regulation | 20% to 100% load      | 10.0% typ.            |

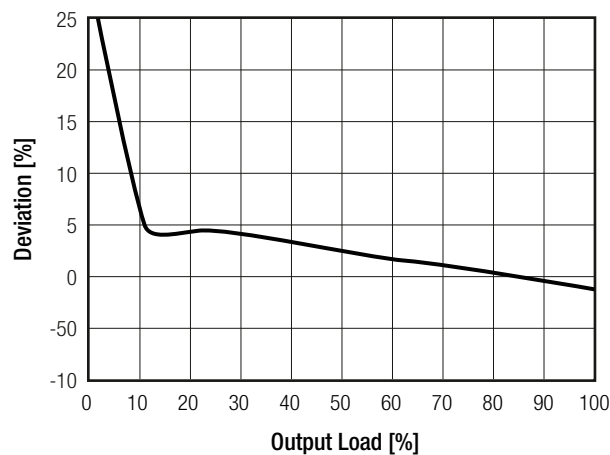
### Tolerance Envelope



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

Deviation vs. Load



**PROTECTIONS**

| Parameter                        | Type       |                                           | Value           |
|----------------------------------|------------|-------------------------------------------|-----------------|
| Short Circuit Protection (SCP)   |            |                                           | 1 second        |
| Isolation Voltage <sup>(3)</sup> | I/P to O/P | tested for 1 second<br>rated for 1 minute | 1kVDC<br>500VAC |
| Isolation Resistance             |            |                                           | 1GΩ 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

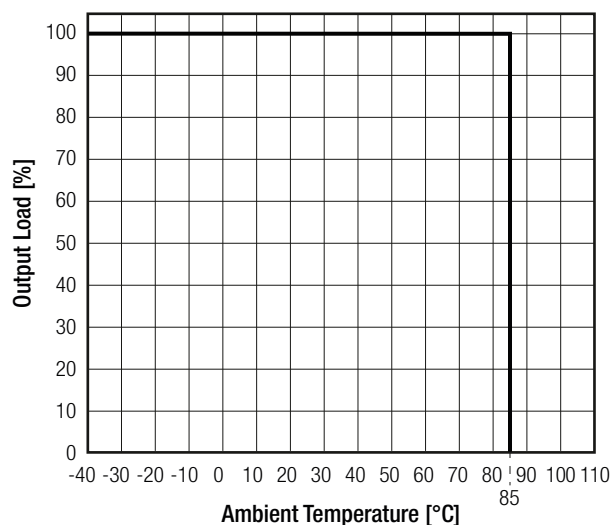
**ENVIRONMENTAL**

| Parameter                   | Condition                        |                | Value                                                       |
|-----------------------------|----------------------------------|----------------|-------------------------------------------------------------|
| Operating Temperature Range | full load (see graph)            |                | -40°C to + 85°C                                             |
| Operating Altitude          |                                  |                | 2000m                                                       |
| Operating Humidity          | non-condensing                   |                | 95% RH max.                                                 |
| Pollution Degree            |                                  |                | PD2                                                         |
| MTBF                        | according to MIL-HDBK-217F, G.B. | +25°C<br>+85°C | 2400 x 10 <sup>3</sup> hours<br>650 x 10 <sup>3</sup> hours |

continued on next page

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

Derating Graph



**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<br>EN60950-1:2006 + A2:2013            |
| Information Technology Equipment, General Requirements for Safety | E358085-A4-UL        | UL60950-1, 2nd Edition:2007<br>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                                                 |

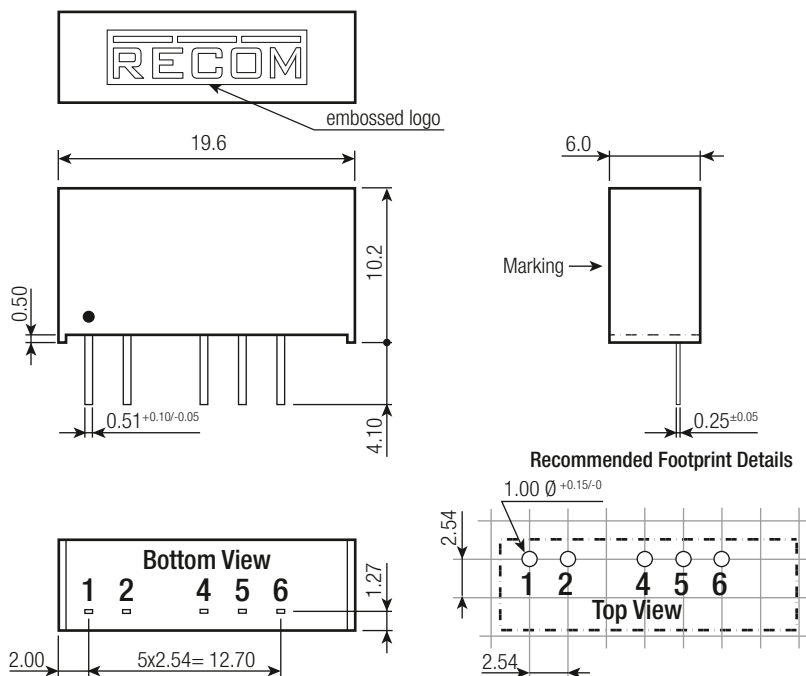
**DIMENSION AND PHYSICAL CHARACTERISTICS**

| Parameter         | Type                   | Value                                                                           |
|-------------------|------------------------|---------------------------------------------------------------------------------|
| Material          | case<br>potting<br>PCB | non-conductive black plastic (UL94 V-0)<br>epoxy, (UL94 V-0)<br>FR4, (UL94 V-0) |
| Dimension (LxWxH) |                        | 19.6 x 6.0 x 10.2mm                                                             |
| Weight            |                        | 2.2g typ.                                                                       |

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

**Dimension Drawing (mm)**



**Pinning information**

| Pin # | Single |
|-------|--------|
| 1     | +Vin   |
| 2     | -Vin   |
| 4     | NC     |
| 5     | -Vout  |
| 6     | +Vout  |

NC = no internal connection

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 | 25pcs                |
| Storage Temperature Range   |      | -55°C to +125°C      |
| Storage Humidity            |      | 95% RH max.          |

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Authorized Distributor

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