

Features

Unregulated Converters

- 1:1 Input Range
- Efficiency up to 84%
- 2kVDC and 3kVDC Isolation Option
- Approved for Medical Applications
- -40°C to +90°C Operating Temperature Range
- 2W SMD Package

Selection Guide

| Part Number | Isolation Voltage (kV) | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (max.) | Capacitive Load (max.) ⁽¹⁾ |
|-------------|------------------------|---------------------|----------------------|---------------------|-------------------|---------------------------------------|
| RTM-0505S* | 2 | 5 | 5 | 400 | 79% | 2200µF |
| RTM-1205S* | 2 | 12 | 5 | 400 | 83% | 2200µF |
| RTM-2405S* | 2 | 24 | 5 | 400 | 84% | 2200µF |

* add Suffix "/H" for 3kVDC/1sec. Isolation e.g. RTM-0505S/H

* add Suffix "-R" for tape&reel packing e.g. RTM-1205S-R or RTM-2405S/H-R

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

| | | | |
|--|---|---|--|
| Input Voltage Range | | | ±10% max. |
| Output Voltage Accuracy | | | -1% typ., ±5% max. |
| Line Voltage Regulation | (low line to high line at max. load) | | 1.2% typ. |
| Load Voltage Regulation | (10% to 100% full load) | | 10% typ., 15% max. |
| Output Ripple and Noise (20MHz BW limited) | | | 50mVp-p typ., 100mVp-p max. |
| Operating Frequency (V_{in} =nominal input) | | | 20kHz min. / 40kHz typ. / 80kHz max. |
| Efficiency at Full Load | | | see Selection Guide |
| Minimum Load = 0% | | | Specifications valid for 10% minimum load only |
| Isolation Voltage | (tested for 1 second) | | 2000 VDC |
| | (rated for 1 minute**) | | 1600VDC |
| Isolation Voltage | H-Suffix | (tested for 1 second) | 3000 VDC |
| | H-Suffix | (rated for 1 minute**) | 2400VDC |
| Isolation Capacitance | | | 30pF typ., 50pF max. |
| Isolation Resistance | (Viso=500V) | | 15GΩ min. |
| Short-Circuit Protection | | | 1 second |
| Operating Temperature Range | with Derating | | -40°C to +90°C |
| Storage Temperature | | | -55°C to +125°C |
| Reflow Temperature | RoHS compliant | 245°C (30 sec.), Peak 255°C (5sec.) max. | |
| Vapor Phase Process | (for more details see Application Notes) | | 230°C (90 sec.) max. |
| Relative Humidity | | | 95% RH |
| Package Weight | | | 1.4g |
| Packing Quantity | All Types | | 27 pcs per Tube |
| | All Types | | 500 pcs per Reel |
| MTBF (+25°C) | } Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F | 3907 x 10 ³ hours |
| MTBF (+85°C) | | using MIL-HDBK 217F | 313 x 10 ³ hours |
| Certifications | | | |
| EN Medical Safety | Report: MDD1112018 + RM1112018 | IEC/EN 60601-1 3rd Edition Medical Report + ISO14971 Risk Assessment | |
| EN General Safety | Report: SPLVD1112018 | EN60950-1, 2nd Edition | |

Note:

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

ECONOLINE
DC/DC-Converter

RECOM

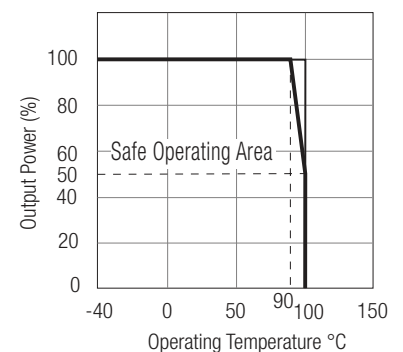
2 Watt SMD Single Output



EN-60601-1 Certified
EN-60950-1 Certified

RTM

Derating-Graph (Ambient Temperature)

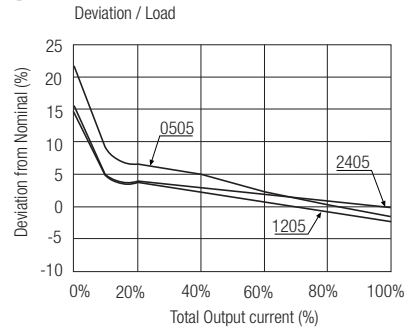
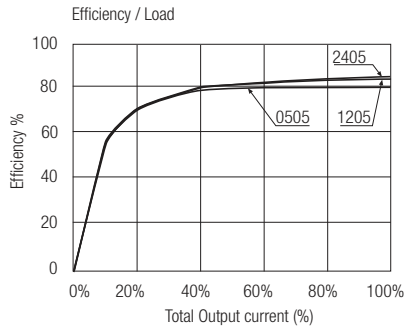


**Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

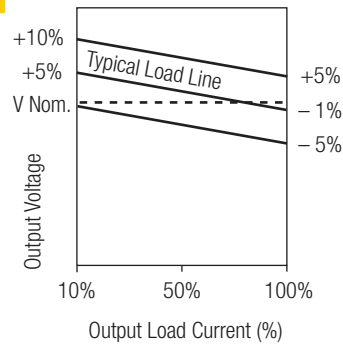
Refer to Application Notes

Typical Characteristics

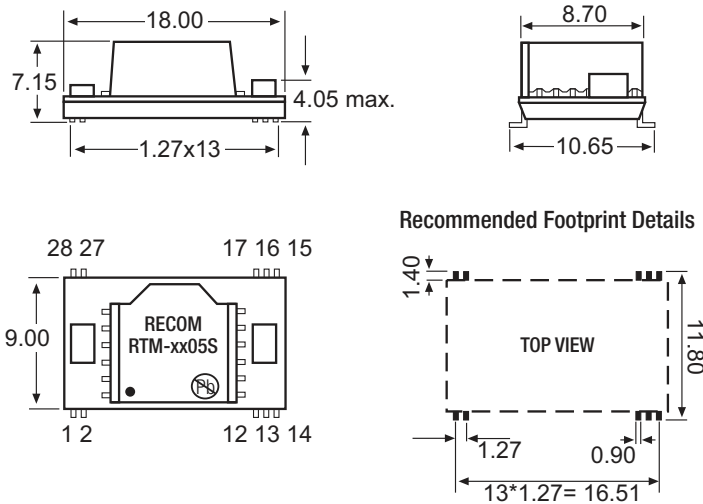
RTM-xx05S



Tolerance Envelope



Package Style and Pinning



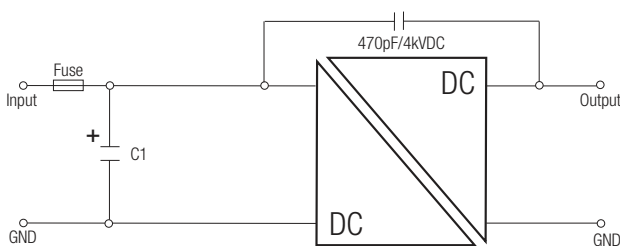
Pin Connections

| Pin # | Function |
|-------|----------|
| 1 | +Vin |
| 2 | -Vin |
| 12 | -Vout |
| 13 | +Vout |
| 14-17 | NC |
| 27,28 | NC |

NC = No Connection

Unit: mm
Tolerance: ± 0.25 mm

EMC Filtering - Suggestion for EN55022 Class B



| Input Voltage | Inductance/ Capacitance (C1) |
|---------------|------------------------------|
| 5V | 4.7µF |
| 12V | 2.2µF |
| 24V | 47µF |