

# 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.) <sup>(1)</sup>
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 <sup>3</sup> hours
MTBF (+85°C)		using MIL-HDBK 217F	313 x 10 <sup>3</sup> 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

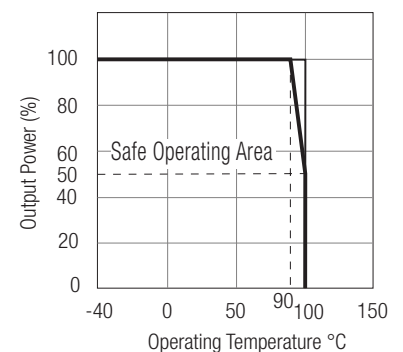
## 2 Watt SMD Single Output



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

# RTM

## Derating-Graph (Ambient Temperature)

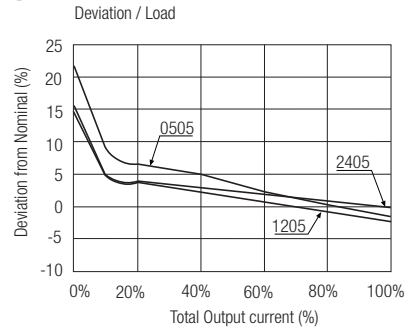
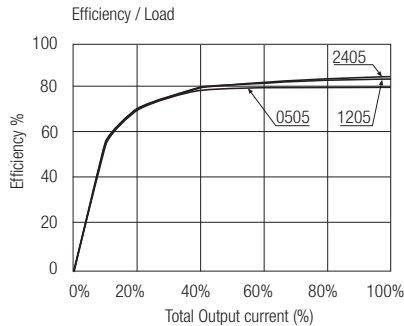


\*\*Any data referred to in this datasheet are of indicative nature and based on our practical experience only. For further details, please refer to our Application Notes.

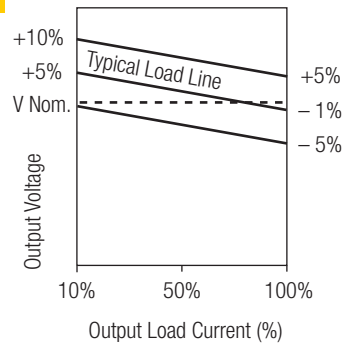
**Refer to Application Notes**

### Typical Characteristics

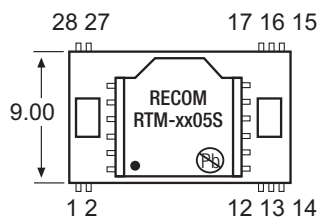
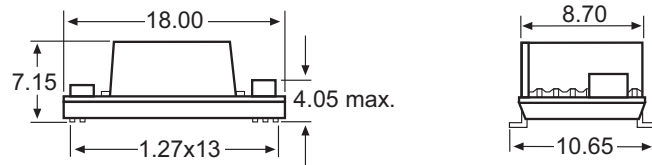
## RTM-xx05S



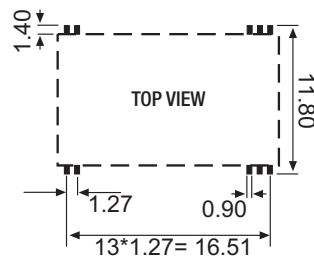
### Tolerance Envelope



### Package Style and Pinning



#### Recommended Footprint Details



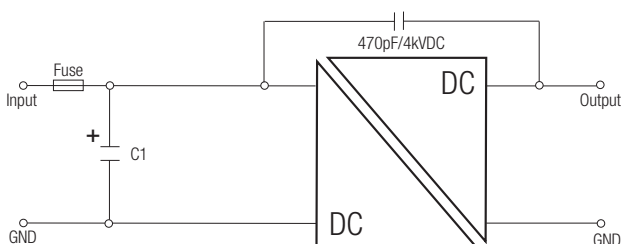
#### Pin Connections

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

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