### **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	Isolation	Input	Output	Output		Capacitive
Number	Voltage	Voltage	Voltage	Current	Efficiency	Load
SMD	(kV)	(VDC)	(VDC)	(mA)	(max.)	(max.) (1)
RTM-05055	S* 2	5	5	400	79%	2200µF
RTM-12055	S* 2	12	5	400	83%	2200µF
RTM-24055	S* 2	24	5	400	84%	2200µF

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

### **Specifications** (measured at $T_A = 25$ °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		10% typ., 15% max.		
Output Ripple and Nois	d) 50mVp-p typ., 1		p typ., 100mVp-p max.		
Operating Frequency (V	20kHz min. / 40kHz typ. / 80kHz max			OkHz 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	r 1 minute**)		1600VDC
Isolation Voltage	H-Suffix	(tested fo	or 1 second)		3000 VDC
	H-Suffix	(rated for	r 1 minute**)		2400VDC
Isolation Capacitance					30pF typ., 50pF max.
Isolation Resistance		(Viso=500V)			15G $\Omega$ min.
Short-Circuit Protection	l				1 second
Operating Temperature	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 de	etails 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) D	Detailed Information se	e	using MIL-HDBK	217F	3907 x 10 <sup>3</sup> hours
MTBF (+85°C) \( \int A)	oplication Notes chapte	er "MTBF"	using MIL-HDBK	217F	313 x 10 <sup>3</sup> hours
Certifications					
EN Medical Safety F	8 + RM1	112018	IEC/E	EN 60601-1 3rd Edition	
N	Medical Report + ISC	)14971 R	lisk Assessment		

EN60950-1, 2nd Edition **EN General Safety** Report: SPCLVD1112018

#### Note:

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



# 2 Watt SMD Single Output





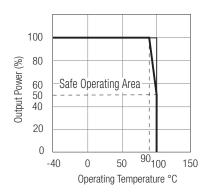


### EN-60601-1 Certified EN-60950-1 Certified

# RTM

## **Derating-Graph**

(Ambient Temperature)



<sup>\*\*</sup>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** 

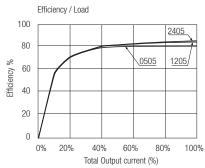
<sup>\*</sup> add Suffix "-R" for tape&reel packing e.g. RTM-1205S-R or RTM-2405S/H-R

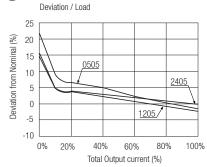
# **RTM Series**

### DC/DC-Converter

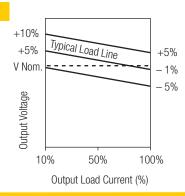
### **Typical Characteristics**

# RTM-xx05S





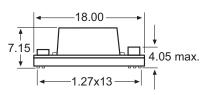
### **Tolerance Envelope**



### **Package Style and Pinning**

28 27

9.00

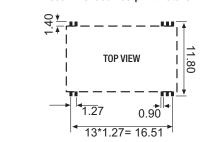


17 16 15

12 13 14



#### **Recommended Footprint Details**



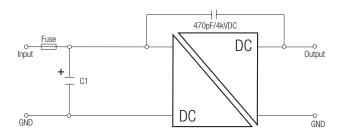
Pin #	Function	
1	+Vin	
2	-Vin	
12	-Vout	
13	+Vout	
14~17	NC	
27,28	NC	
$\overline{NC = No}$	Connection	

 $\begin{array}{ll} \text{Unit:} & \text{mm} \\ \text{Tolerance:} & \pm \ 0.25 \ \text{mm} \end{array}$ 

### **EMC Filtering - Suggestion for EN55022 Class B**

RECOM

RTM-xx05S



Input Voltage	Capacitance (C1)	
5V	4.7μF	
12V	2.2µF	
24V	47μF	

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