

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.)
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	RTM-xx05S (tested for 1 second)	2000 VDC	
	RTM-xx05S/H (tested for 1 second)	3000 VDC	
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.	
Vapour 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 EN60950-1, 2nd Edition

Note 1: 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

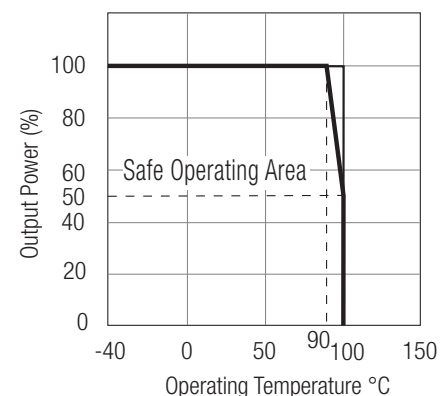
2 Watt SMD Single Output



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

RTM

Derating-Graph (Ambient Temperature)

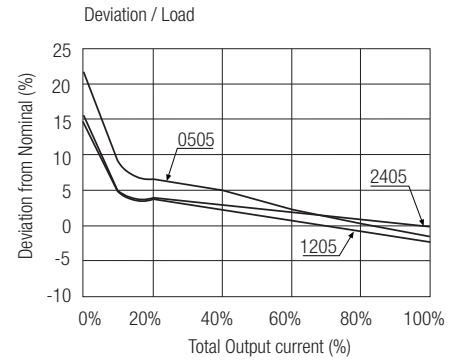
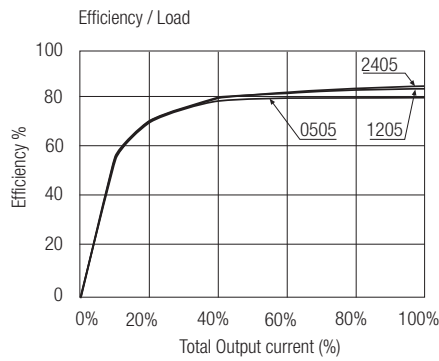
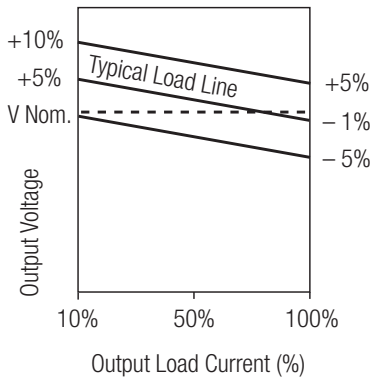


Refer to Application Notes

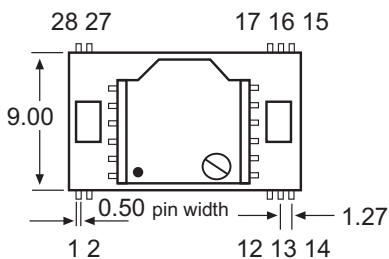
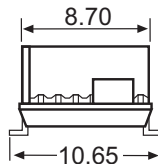
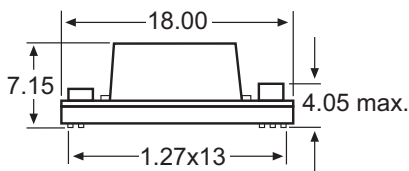
Typical Characteristics

Tolerance Envelope

RTM-xx05S



Package Style and Pinning



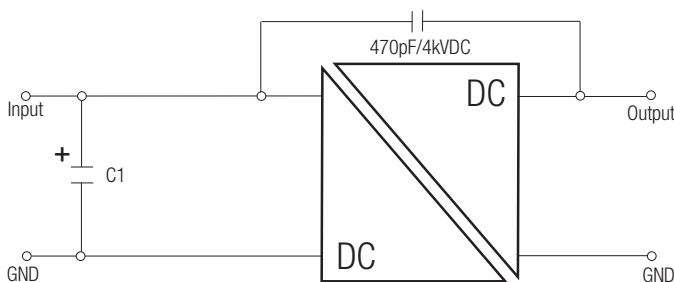
Pin Connections

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