



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Features

Unregulated Converters

- 1:1 Input Range
- Efficiency up to 80%
- 3kVDC and 4kVDC Isolation Option
- Approved for Medical Applications
- -40°C to +100°C Operating Temperature Range
- Continuous Short Circuit Protection

Selection Guide

Part Number	Isolation Voltage (kV)	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (typ.)	Capacitive Load (max.)
RAM-0505S*	3	5	5	200	78%	1000µF
RAM-1205S*	3	12	5	200	80%	1000µF
RAM-2405S*	3	24	5	200	80%	1000µF

* add Suffix "H" for Isolation 4kVDC/1min. e.g. RAM-0505S/H

* add Suffix "-R" for tape&reel packing e.g. RAM-1205S-R or RAM-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%
Output Voltage Accuracy			-1% typ., ±5% max.
Line Voltage Regulation	(low line to high line at max. load)	1.2% typ., 1.5% max.	
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. / 50kHz typ. / 90kHz max.
Efficiency			see Selection Guide
Minimum Load = 0%	Specifications valid for 10% minimum load only		
Isolation Voltage	(tested for 1 second)		3750 VDC
	(rated for 1 minute**)		3000 VDC
Isolation Voltage	H-Suffix	(tested for 1 second)	5000 VDC
	H-Suffix	(rated for 1 minute**)	4000 VDC
Isolation Capacitance			4pF typ., 10pF max.
Isolation Resistance	(Viso=500V)	15GΩ min.	
Short-Circuit Protection			continuous
Operating Temperature Range			-40°C to +100°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			1.3g
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	4780 x 10 ³ hours
MTBF (+85°C)		using MIL-HDBK 217F	1310 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: SPCLVD1112018	EN60950-1, 2nd Edition

**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.

ECONOLINE
DC/DC-Converter

RECOM

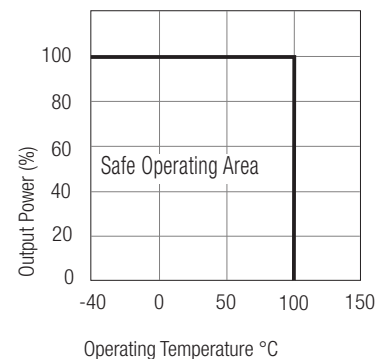
1 Watt SMD Single Output



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

RAM

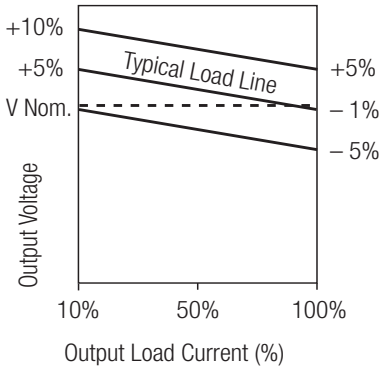
Derating-Graph (Ambient Temperature)



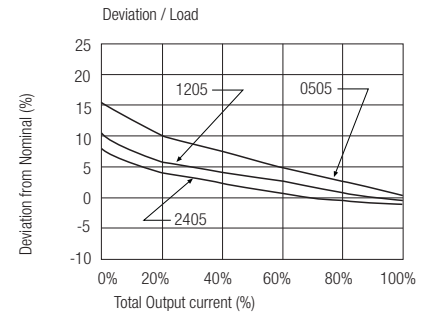
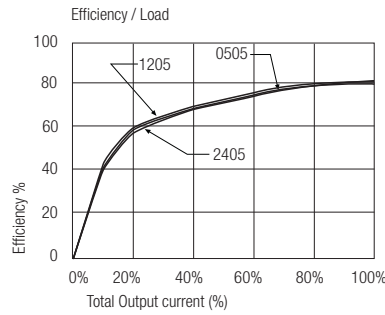
Refer to Application Notes

Typical Characteristics

Tolerance Envelope



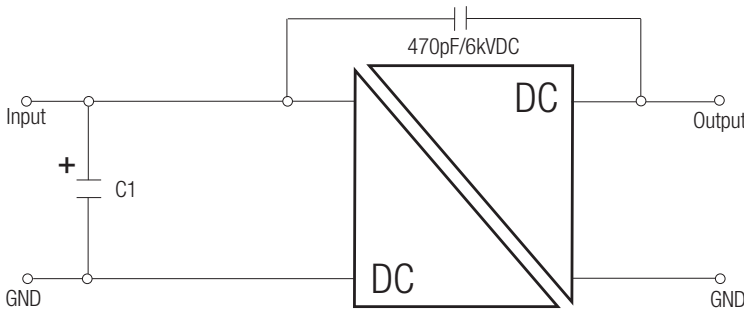
RAM-xx05S



Notes

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

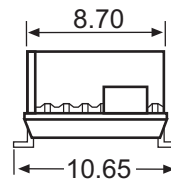
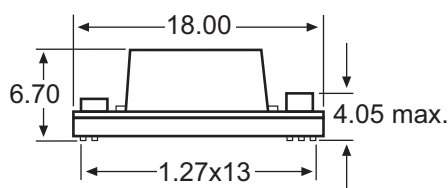
EMC Filtering - Suggestion for EN55022 Class B



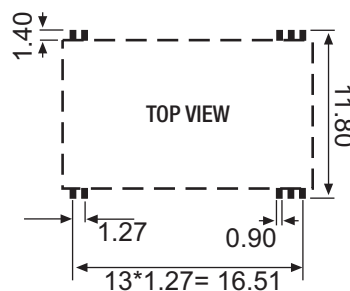
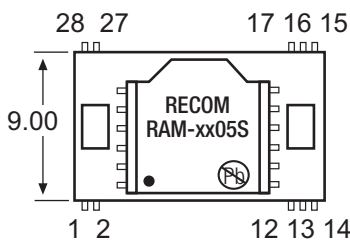
Input Voltage	Inductance/ Capacitance (C1)
5V	10µF
12V	4.7µF
24V	22µF

RAM

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

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