Features

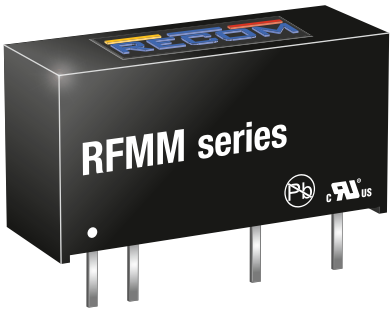
Unregulated Converters

- Low cost 1W converter
- Industry standard pinout
- SIP7 package
- 4kVDC isolation
- Efficiency up to 80%
- Wide operating temperature range -40°C to +85°C
- UL60950-1, CAN/CSA C22.2 No. 60950-1 certified

RECOM
DC/DC Converter

RFMM

1 Watt SIP7 Single Output



UL60950-1 certified
CAN/CSA-C22.2 No 60950-1 certified
EN55032 compliant

Description

The RFMM DC/DC converter is typically used in cost sensitive general purpose power isolation and voltage matching applications. Despite its low cost, it is a fully specified converter with 4kVDC isolation, industrial operating temperature range of -40°C to +85°C without derating and UL/EN certifications.

Selection Guide

Part Number	Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency (1) max. [%]	Max. Capacitive Load (2) [µF]
RFMM-0505S	5	5	200	80	1000

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient
Note2: Max. Cap Load is tested at nominal input and full resistive load

Model Numbering

RFMM-0505S

- 05 — Input Voltage
- 05 — Output Voltage
- S — **S**ingle

Specifications (measured @ Ta= 25°C, nominal input voltage, full load and after warm-up)

BASIC CHARACTERISTICS				
Parameter	**Condition**	**Min.**	**Typ.**	**Max.**
Internal Input Filter				capacitor
Input Voltage Range			±10%	
Input Surge Voltage	100µs			10VDC
Input Current	max. load		250mA	
Quiescient Current	nom. Vin = 5VDC		25mA	30mA
Minimum Load (3)		0%		
Internal Operating Frequency		50kHz	80kHz	100kHz
Output Ripple and Noise (4)	20MHz BW		40mVp-p	100mVp-p
Reflected Back Ripple Current	20MHz BW, no external choke		20mAp-p	

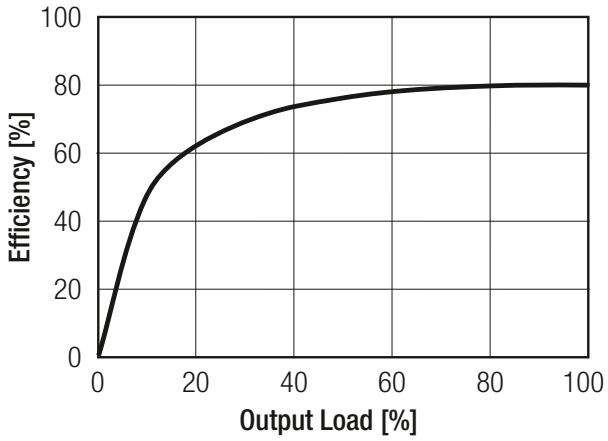
Notes:

Note3: Operation below 10% load won't harm the converter, but specifications may not be met
Note4: Measurements are made with a 100nF MLCC across output (low ESR)

continued on next page

Specifications (measured @ Ta= 25°C, nominal input voltage, full load and after warm-up)

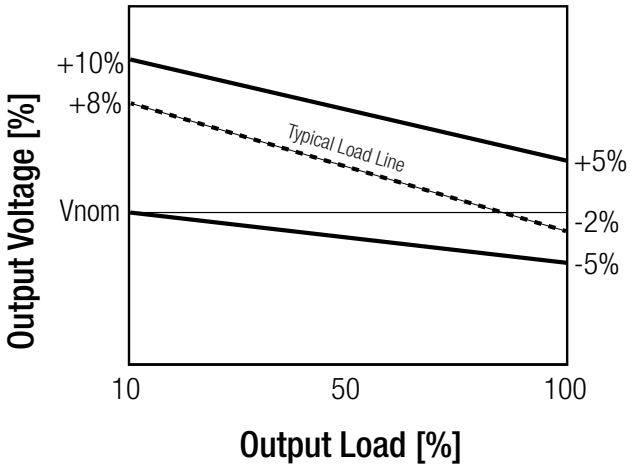
Efficiency vs. Load
(nominal Vin= 5VDC)



REGULATIONS

Parameter	Condition	Values
Output Accuracy		±5.0% max.
Line Regulation	low line to high line, full load	±1.2% typ. / ±1.0% max.
Load Regulation	10% to 100%	±10% typ. / ±15% max.

Tolerance Envelope



PROTECTIONS

Parameter	Condition		Value
Short Circuit Protection (SCP)	below 100mΩ		short term protection mode
Isolation Voltage [5]	I/P to O/P	tested for 1 second	4kVDC
Isolation Resistance			1GΩ min.
Isolation Capacitance			75pF max.
Leakage Current	500VAC, 50Hz		1µA max.
Insulation Grade			Functional

Notes:

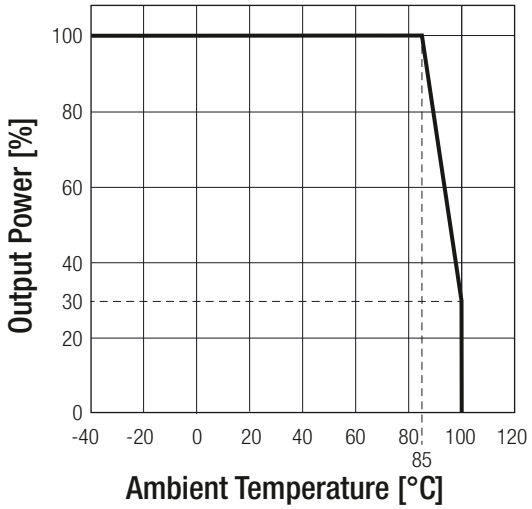
Note5: For repeat Hi-Pot testing, reduce the time and/or the test voltage

Specifications (measured @ Ta= 25°C, nominal input voltage, full load and after warm-up)

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	(@ natural convection 0.1m/s) (see graph)	without derating	-40°C to +85°C
Maximum Case Temperature			+105°C
Temperature Coefficient			±0.05%/°C
Thermal Impedance	0.1m/s, horizontal direction		40°C/W
Operating Altitude			2000m
Operating Humidity	non-condensing		95% RH max.
Pollution Degree			PD2
Vibration			MIL-STD-202G
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +85°C	13200 x 10^3 hours 5200 x 10^3 hours

Derating Graph
(@ Chamber and natural convection 0.1m/s)

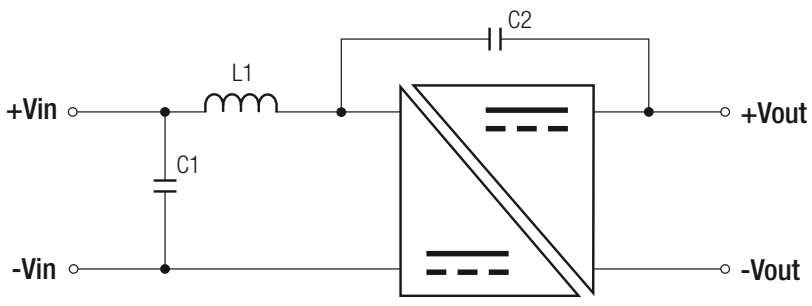


SAFETY AND CERTIFICATIONS (designed to meet)

Certificate Type (Safety)	Report/File Number	Standard
Information Technology Equipment, General Requirements for Safety	E358085-A4	UL60950-1, 2nd Edition, 2007
		CSA C22.2 No. 60950-1-07, 2nd Edition, 2007
RoHs 2+		RoHS 10/10, 2015

EMC Compliance	Condition	Standard / Criterion
Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	with external filter (see below filter suggestion)	EN55032, Class B

EMC Filtering - Suggestions for Class B



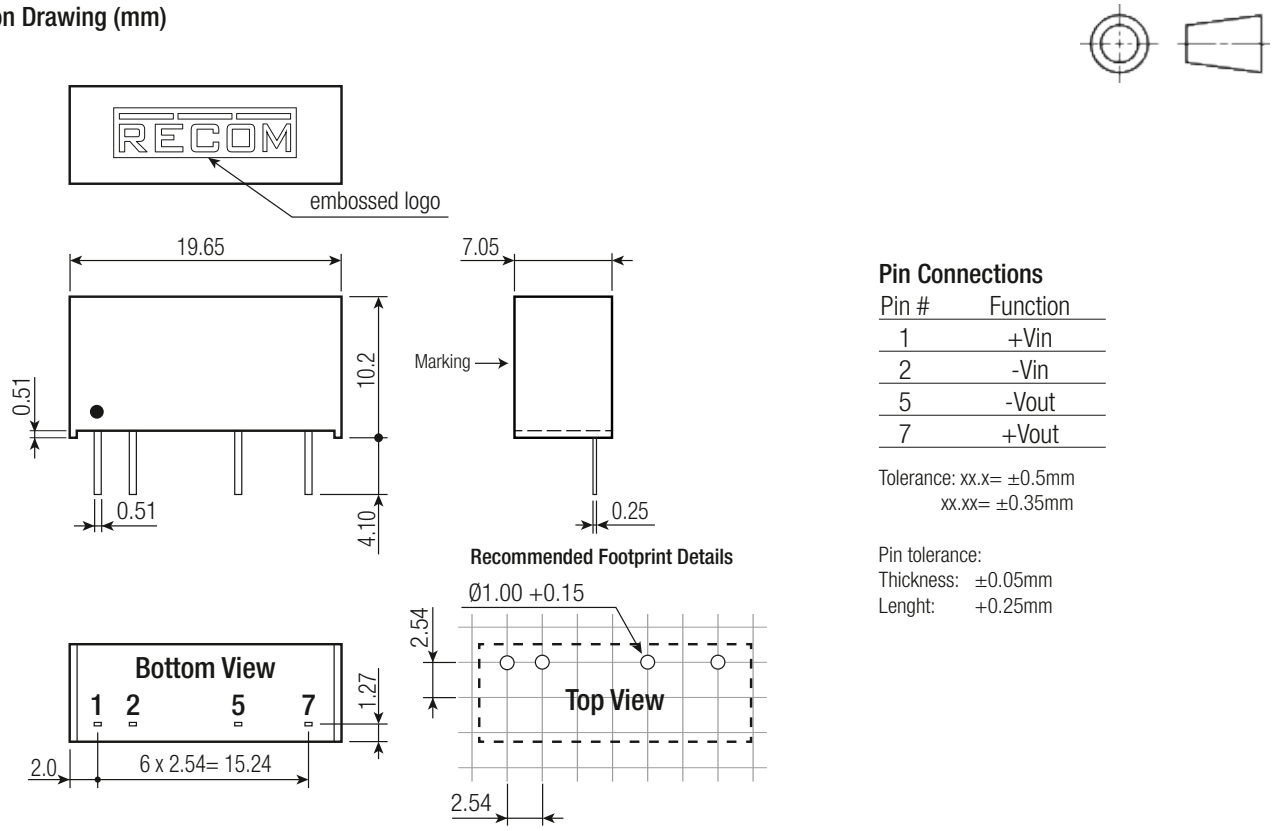
Component List Class B		
C1	L1	C2
10µF	4.7µH choke	470pF/5kVDC

Specifications (measured @ Ta= 25°C, nominal input voltage, full load and after warm-up)

DIMENSION AND PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting	non-conductive black plastic (UL94 V-0) epoxy (UL94 V-0)
Package Dimension (LxWxH)		19.65 x 7.05 x 10.2mm
Package Weight		2.7g typ.

Dimension Drawing (mm)



Pin Connections

Pin #	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

Tolerance: xx.x= ±0.5mm
xx.xx= ±0.35mm

Pin tolerance:
Thickness: ±0.05mm
Lenght: +0.25mm

PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	520.0 x 16.5 x 9.3mm
Packaging Quantity		25pcs
Storage Temperature Range		-55°C to +125°C
Storage Humidity		5% - 95%, RH

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