Features

Unregulated Converters

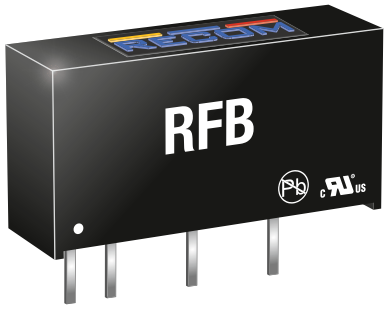
- Low cost 1W converter
- Industry standard pinout
- SIP7 package
- 1kVDC isolation
- Efficiency up to 80%
- UL60950-1, CAN/CSA C22.2 No. 60950-1 certified

RECOM
DC/DC Converter

RFB

1 Watt SIP7 Single Output

3 YEAR warranty



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

Description

The RFB 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 1kVDC 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) typ. [%]	Max. Capacitive Load (2) [µF]
RFB-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

RFB-0505S

- Input Voltage
- Output Voltage
- Single

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	-0.65VDC		9VDC
Input Current	max. load		250mA	
Quiescient Current	nom. Vin = 5VDC		25mA	30mA
Minimum Load (3)		0%		
Internal Operating Frequency		50kHz	82kHz	105kHz
Output Ripple and Noise (4)	20MHz BW		55mVp-p	100mVp-p
Reflected Back Ripple Current	20MHz BW, no external choke		20mAp-p	

Notes:

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

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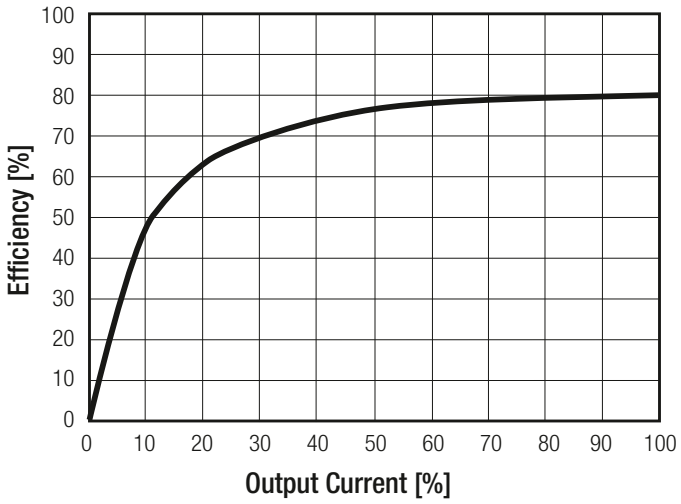
Specifications (measured @ Ta= 25°C, nominal input voltage, full load and after warm-up)

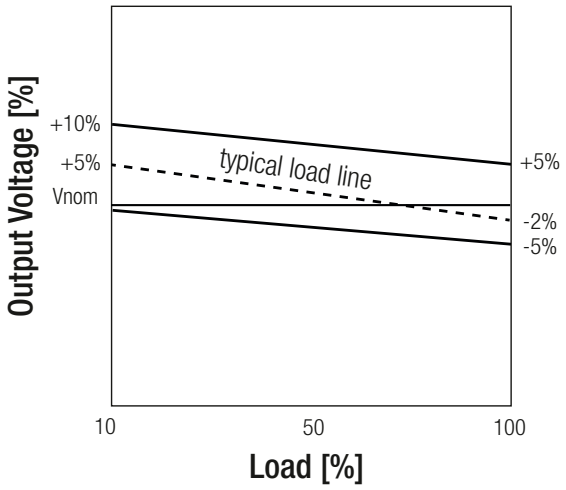
Efficiency vs. Load
(nominal Vin= 5VDC)



REGULATIONS

Parameter	Condition	Values
Output Accuracy		-2% typ. / ±5.0% max.
Line Regulation	low line to high line, full load	±1.2% typ. / ±1% max.
Load Regulation	10% to 100%	±10% typ. / ±15% max.

Tolerance Envelope



PROTECTIONS

Parameter	Condition		Value
Short Circiut Protection (SCP)	below 100mΩ		short term protection mode
Isolation Voltage [5]	I/P to O/P	tested for 1 second rated for 1 minute	1kVDC 500VAC/60Hz
Isolation Resistance			1GΩ min.
Isolation Capacitance			75pF max.
Leakage Current	500VAC, 50Hz		1µA max.
Insulation Grade			Functional

Notes:

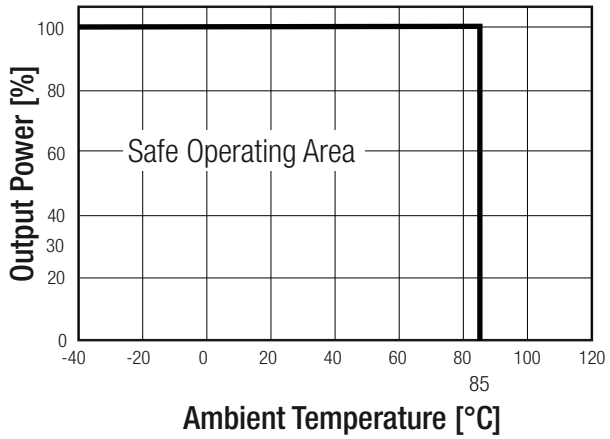
Note5: For repeat Hi-Pot testing, reduce the time and/or the test voltage

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)

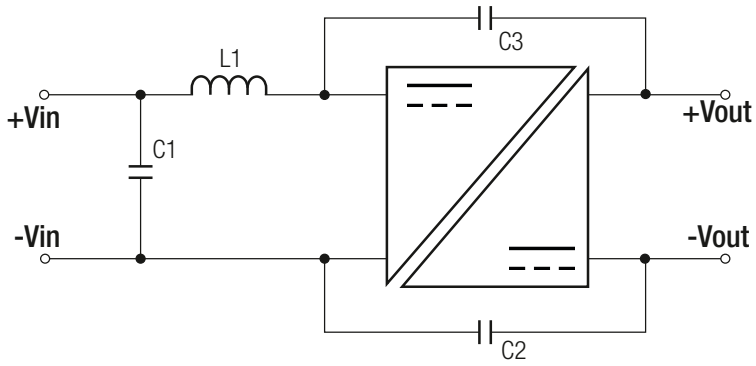


SAFETY AND CERTIFICATIONS

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 A, B

EMC Filtering - Suggestions for Class A and B



Component List Class A			
C1	L1	C2	C3
6.8µF	-	-	-

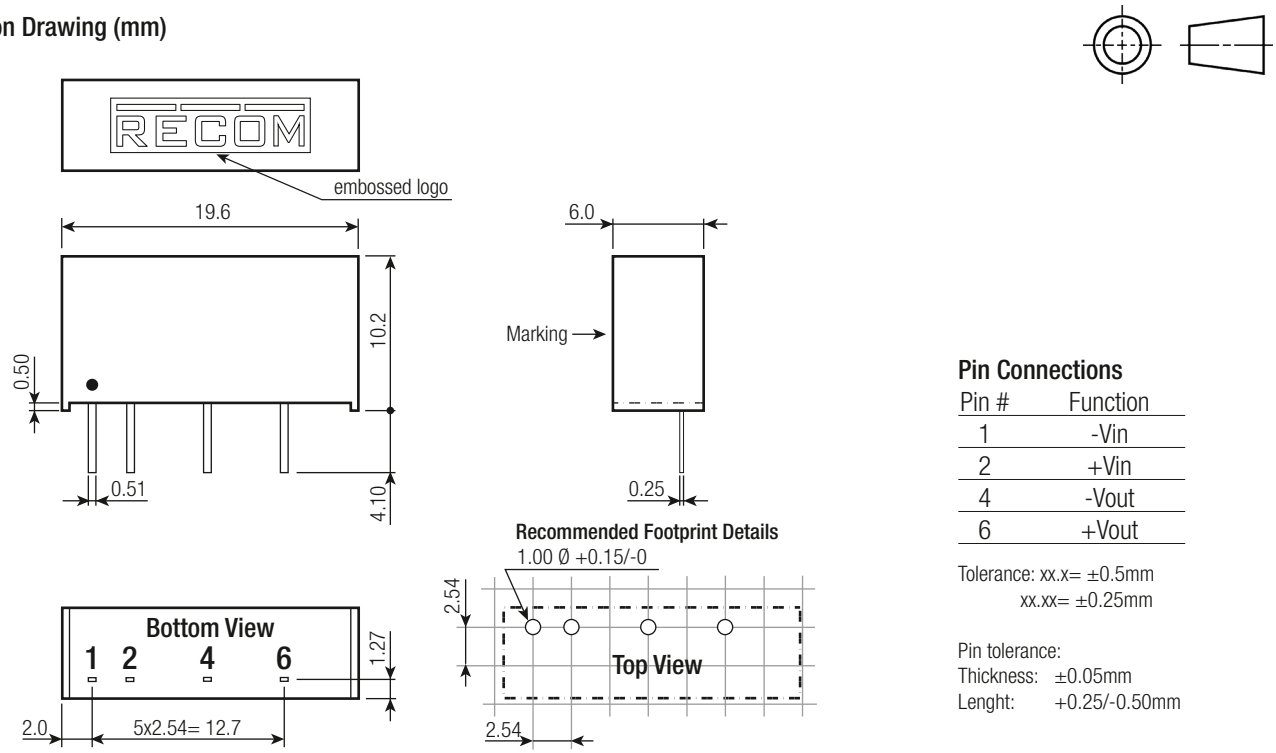
Component List Class B			
C1	L1	C2	C3
10µF	22µH	1nF/1kV	2.2nF/1kV

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-2)
Package Dimension (LxWxH)		19.6 x 6.0 x 10.2mm
Package Weight		2.2g

Dimension Drawing (mm)



Pin Connections

Pin #	Function
1	-Vin
2	+Vin
4	-Vout
6	+Vout

Tolerance: xx.x= ±0.5mm
xx.xx= ±0.25mm

Pin tolerance:
Thickness: ±0.05mm
Lenght: +0.25/-0.50mm

PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	520.0 x 16.0 x 9.0mm
Packaging Quantity		25pcs
Storage Temperature Range		-55°C to +125°C
Storage Humidity		5% - 95%, RH