

Features

Unregulated Converters

- Qualified with 65kV/ μ s @ Vcommon mode =1KV
- 6V Output for GaN driver Applications
- Pot-Core Transformer with separated windings
- High 6.4kVDC/sec Isolation in compact size
- Low isolation capacitance (10pF max.)
- UL/IEC/EN62368-1 and IEC/EN60950-1 certified

RECOM
DC/DC Converter

RxxP06S

**1 Watt
SIP7
Output for GaN
Application**



Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

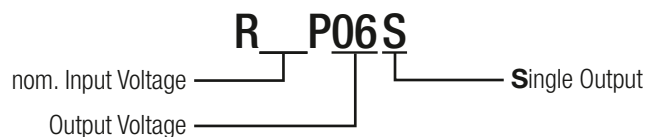
Note2: Max Cap Load is tested at nominal input and full resistive load

UL62368-1 certified
CAN/CSA-C22.2 No. 62368-1-14 certified
IEC/EN62368-1 certified
IEC/EN60950-1 certified
CB Report

Selection Guide

Part Number	nom. Input Voltage [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. ⁽¹⁾ [%]	max. Capacitive Load ⁽²⁾ [μ F]
R05P06S	5	6	167	76	1000
R12P06S	12	6	167	81	1000
R15P06S	15	6	167	79	1000
R24P06S	24	6	167	80	1000

Model Numbering



www.recom-power.com/eval-ref-boards

www.recom-power.com/bier

Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

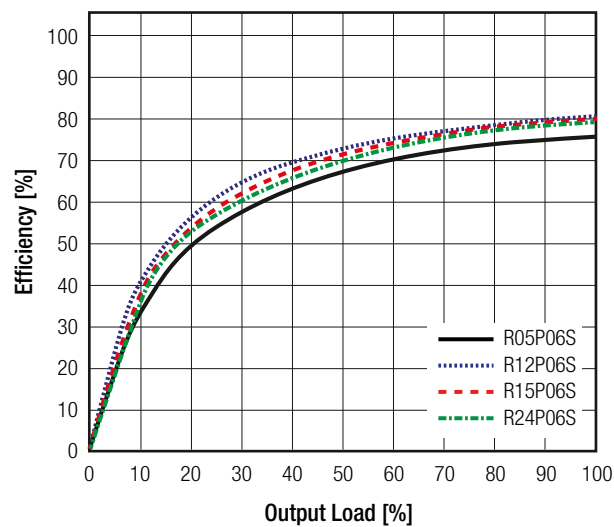
BASIC CHARACTERISTICS

Parameter	Condition	Min.	Typ.	Max.
Internal Input Filter		capacitor type		
Input Voltage Range	5VDC nom. Vin = 12VDC 15VDC 24VDC	4.5VDC 10.8VDC 13.5VDC 21.6VDC		5.5VDC 13.2VDC 16.5VDC 26.4VDC
Minimum Load ⁽³⁾		0%		
Internal Operating Frequency	5VDC, 12VDC, 15VDC nom. Vin = 24VDC	20kHz	55kHz 60kHz	
Output Ripple and Noise	20MHz BW			200mVp-p

Notes:

Note3: Operation below 10% load won't harm the converter, but specifications may not be met

Efficiency vs. Load



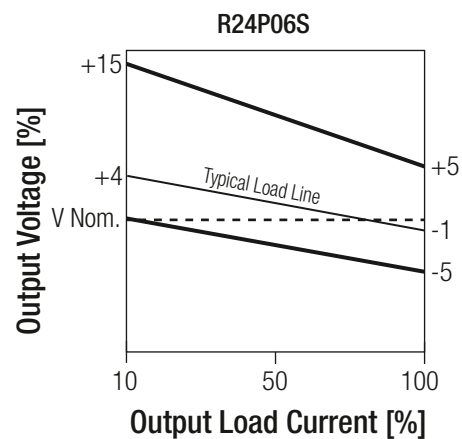
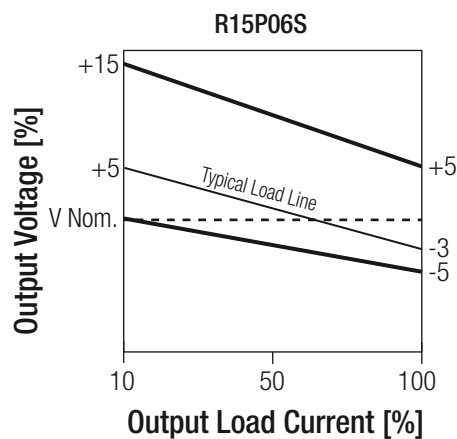
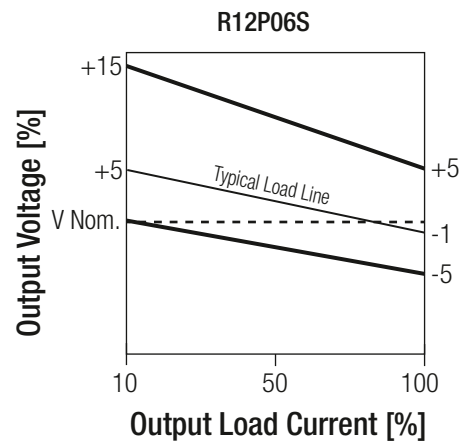
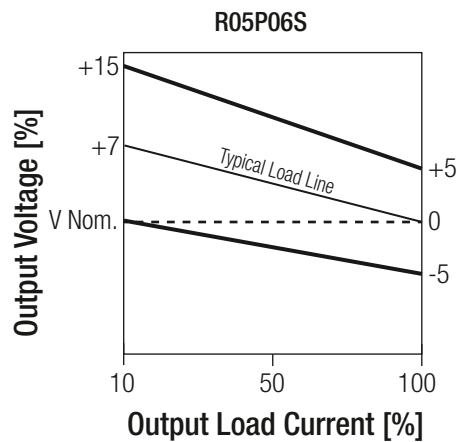
REGULATIONS

Parameter	Condition		Value
Output Accuracy			±5.0% max.
Line Regulation	low line to high line, full load		1.2% typ. / 1% of Vin
Load Regulation	10% to 100% load	5VDC, 12VDC	6.0% typ. / 15.0% max.
		nom. Vin = 15VDC	5.0% typ. / 15.0% max.
		24VDC	4.0% typ. / 15.0% max.

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Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Tolerance Envelope



PROTECTIONS

Parameter	Type		Value
Isolation Voltage ⁽⁴⁾	I/P to O/P	tested for 1 second	6.4kVDC
		rated for 1 minute	5.2kVDC
Isolation Resistance			15GΩ min.
Isolation Capacitance			10pF max.
Insulation Grade			basic
Internal	clearance/creepage		2.0mm
External	clearance/creepage		7.0mm

Notes:

Note4: For repeat Hi-Pot testing, reduce the time and/or the test voltage

Note5: Refer to local safety regulations if input over-current protection is required. Recommended fuse: slow blow type

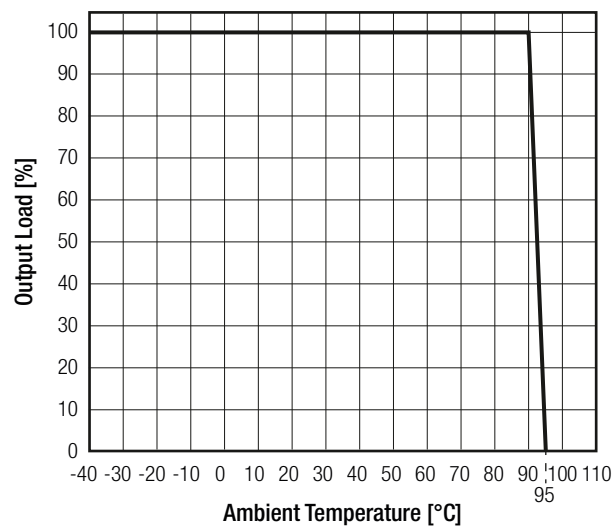
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

ENVIRONMENTAL

Parameter	Condition		Value
Operating Temperature Range	full load @ natural convection 0.1m/s (see graph)		-40°C to +90°C
Maximum Case Temperature			+105°C
Temperature Coefficient			±0.02%/K
Thermal Impedance	0.1m/s, horizontal		30K/W
Operating Humidity	non-condensing		5% - 95% RH max.
Operating Altitude			3000m
Pollution Degree			PD2
MTBF	according to MIL-HDBK-217F, G.B.	+25°C +90°C	2000 x 10 ³ hours 700 x 10 ³ hours

Derating Graph

(@ Chamber and natural convection 0.1m/s)



SAFETY AND CERTIFICATIONS

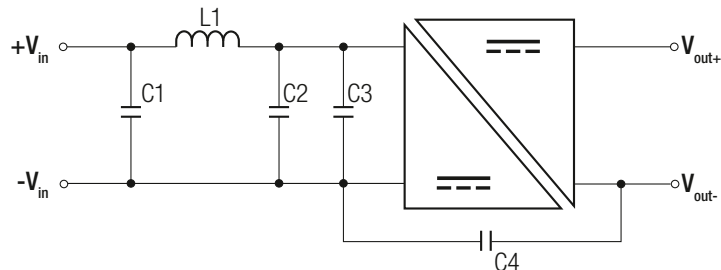
Certificate Type	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E224736-A56-UL	UL60950-1, 2nd Edition, 2014 CAN/CAS-C22.2 No. 60950-1-07, 2nd Edition, 2014
Information Technology Equipment, General Requirements for Safety (LVD)	1602031	EN60950-1, 2nd Edition 2006, +A2:2013 IEC60950-1, 2nd Edition 2005 + A2:2013
Audio/Video, information and communication technology equipment - Part1: Safety requirements (CB Scheme)	ATTCB106076	IEC62368-1:2014, 2nd Edition
Audio/Video, information and communication technology equipment - Part1: Safety requirements		EN62368-1:2014 + A11:2017
Audio/Video, information and communication technology equipment - Part1: Safety requirements	E224736-A56-UL	UL62368-1, 2nd Edition, 2014 CSA CAN No. 62368-1-14, 2nd Edition
EAC	RU-AT.49.09571	TP TC 004/2011
RoHS 2+		RoHS 10/10, 2011/65/EU + AM-2015/863

EMI Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment - Emission requirements	with external components (see filter suggestions)	EN55032, Class B

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Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

EMC Filtering Suggestion according to EN55032 Class A and Class B



Component List Class A

MODEL	C1	C2	C3	C4	L1		
R05P06S	N/A	22µF MLCC	N/A	N/A	N/A		
R12P06S		10µF MLCC	4.7µF MLCC				
R15P06S							
R24P06S							

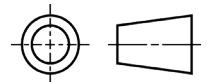
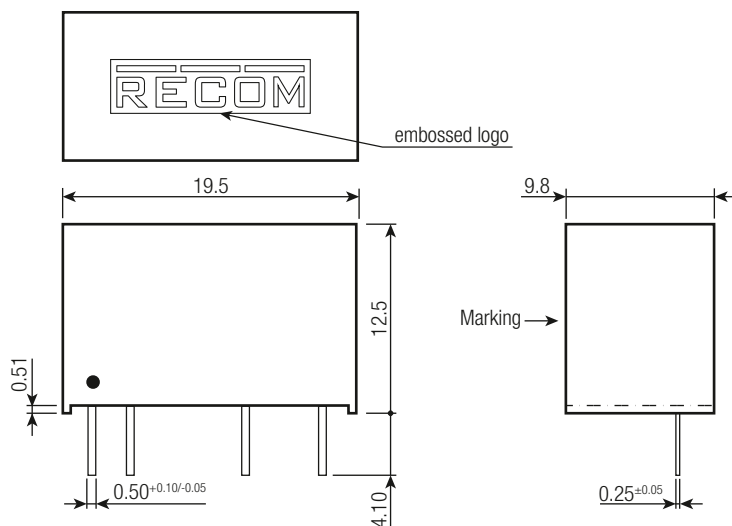
Component List Class B

MODEL	C1	C2	C3	C4	L1
R05P06S R12P06S R15P06S R24P06S	10µF MLCC	10µF MLCC	N/A	1nF / 10kV	470µH, 0.44A, 0.969W Würth: 744776247

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting PCB	non-conductive black plastic, (UL94 V-0) epoxy, (UL94 V-0) FR4, (UL94 V-0)
Dimension (LxWxH)		19.5 x 9.8 x 12.5mm
Weight		4.3g typ.

Dimension Drawing (mm)



Pin Connection

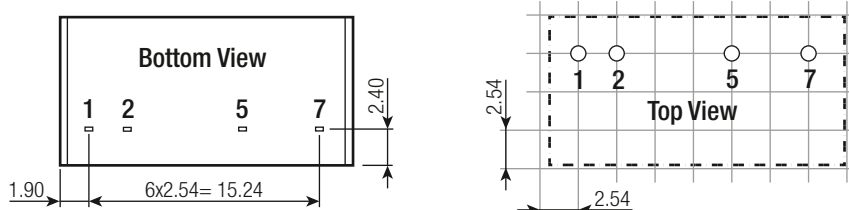
Pin #	Single
1	+Vin
2	-Vin
5	-Vout
7	+Vout

Tolerance: xx.x= ±0.5mm

xx.xx= ±0.25mm

Pin dimension: ±0.1mm

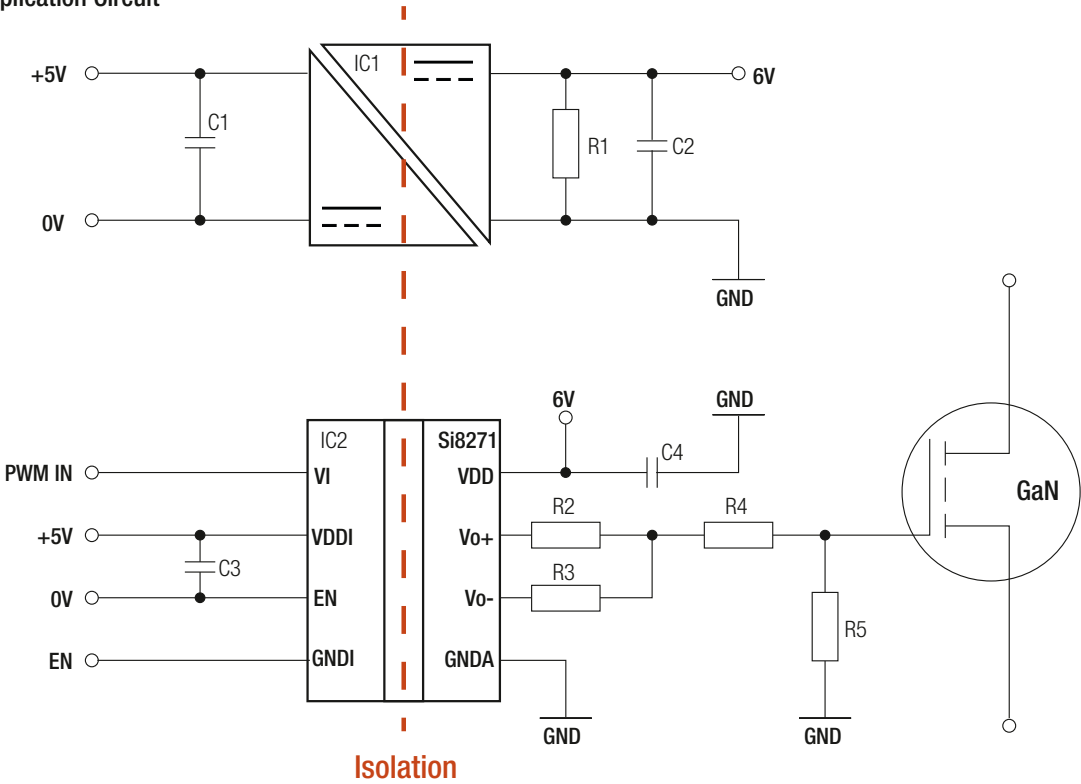
Recommended Footprint Details



Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

INSTALLATION and APPLICATION

Typical GaN Application Circuit



PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	tube	530.0 x 21.0 x 18.0 mm
Packaging Quantity		25pcs
Storage Temperature Range		-55°C to +125°C
Storage Humidity	non-condensing	95% RH max.

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