

Features

Regulated Converter

- 1kVDC or 2kVDC Isolation
- SMD Package Styles
- Single Regulated Output (Internal Linear Regulator)
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Fully Encapsulated
- Efficiency to 62 %
- Built-In EN55022 Class A Filter

Description

The R0.5Z series DC/DC converter has been designed for isolating or converting DC power rails where board space is at a premium. Although no larger than a standard unregulated SMD converter, the R0.5Z series also incorporates an internal linear regulator to deliver a stable output voltage which makes it ideal for powering logic level or supply voltage sensitive circuitry.

Specifications (measured at $T_A = 25^\circ\text{C}$, nominal input voltage, full load and after warm-up)

| Part Number SMD | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) | Max Capacitive Load ⁽¹⁾ |
|-----------------|---------------------|----------------------|---------------------|----------------|------------------------------------|
| R0.5Z-xx05* | 5, 12, 15, 24 | 5 | 100 | 50 | 1000 μF |
| R0.5Z-xx12* | 5, 12, 15, 24 | 12 | 42 | 60 | 220 μF |
| R0.5Z-xx15* | 5, 12, 15, 24 | 15 | 33 | 62 | 220 μF |

xx = Input Voltage

* add Suffix "P" for Continuous Short Circuit Protection, e.g. R0.5Z-0505/P

* add Suffix „H" for 2kVDC Isolation Voltage, e.g. R0.5Z-0505/H

* add suffix -R for tape & reel packing e.g. R0.5Z-0505-R, R0.5Z.0505/P-R

For more details and dimensions of the tapes and reels see Application Notes

Specifications (Core Operating Area)

| | | |
|--|---|---|
| Input Voltage Range | | $\pm 5\%$ |
| Output Voltage Accuracy | | $\pm 5\%$ |
| Line Voltage Regulation | | 1% max. |
| Load Voltage Regulation (10% to 100% full load) | | 1% max. |
| Output Ripple and Noise (20MHz limited) | | 100mVp-p max. |
| Operating Frequency | | 20kHz min. / 50kHz typ. / 90kHz max. |
| Efficiency at Full Load | | 50% min. / 60% typ. |
| Minimum Load | | 10% ⁽²⁾ |
| No Load Power Consumption | | 127mW min. / 155mW typ. / 320mW max. |
| Isolation Voltage | | (tested for 1 second) 1000VDC (rated for 1 minute**) 500VAC / 60Hz |
| Isolation Voltage | H-Suffix | (tested for 1 second) 2000VDC |
| | H-Suffix | (rated for 1 minute**) 1000VAC / 60Hz |
| Isolation Capacitance | | 25pF min. / 75pF max. |
| Isolation Resistance | | 10 G Ω min. |
| Short Circuit Protection | | 1 Second |
| P-Suffix | | Continuous |
| Operating Temperature Range (natural convection) | | -40°C to +85°C (see Graph) |
| Storage Temperature Range | | -55°C to +125°C |
| Reflow Temperature | ROHS compliant | 245°C (30 sec) max. |
| Vapor Phase Process | | 230°C (90 sec) max. |
| | | (for more details see Application Notes) |
| Relative Humidity | | 95% RH |
| Package Weight | | 1.2g |
| Packing Quantity | | 33 pcs per tube 500 pcs per Reel' |
| MTBF (+25°C) | } Detailed Information see Application Notes chapter "MTBF" | using MIL-HDBK 217F 3947 x 10 ³ hours |
| (+85°C) | | using MIL-HDBK 217F 841 x 10 ³ hours |

continued on next page

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

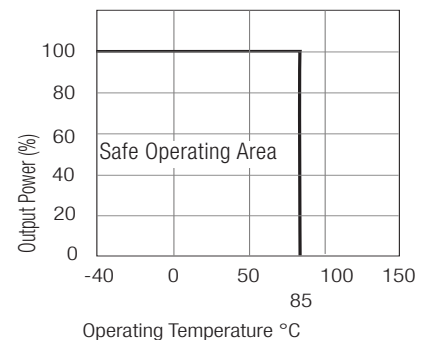
0.5 Watt SMD Isolated Single Output



EN-60950-1 Certified
EN-60601-1 Certified*
UL-60950-1 Certified
(* / H suffix)

R0.5Z

Derating-Graph (Ambient Temperature)



**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.

Refer to Application Notes

Specifications (Core Operating Area)

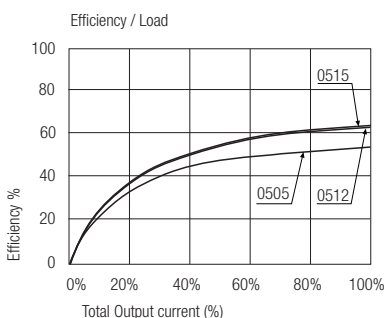
| | | |
|--------------------------------|---|----------------------------|
| Conducted / Radiated Emissions | EN55022 | Level A |
| Certifications | | |
| EN General Safety | Report-No.: SPCLVD1211033-3 | EN60950-1:2006 + A12:2011 |
| EN Medical Safety | Report: MDD1205098-2 + RM1205098-2 | IEC/EN 60601-1 3rd Edition |
| | Medical Report + ISO14971 Risk Assessment | |
| UL General Safety | Report-No.: E358085 | UL60950-1, 2nd Edition |

Notes

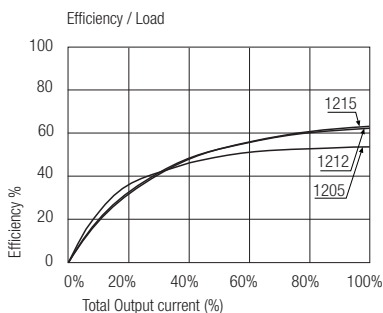
- Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter
- Note 2: The R0.5Z series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions will not damage these devices; however, they may not meet all listed specifications.

Typical Characteristics

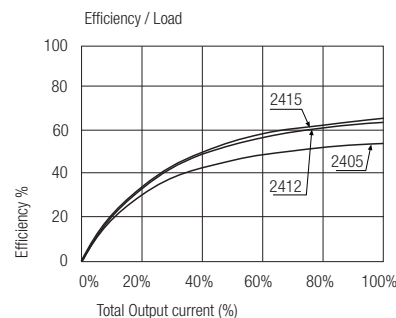
R0.5Z-xx05



R0.5Z-xx12

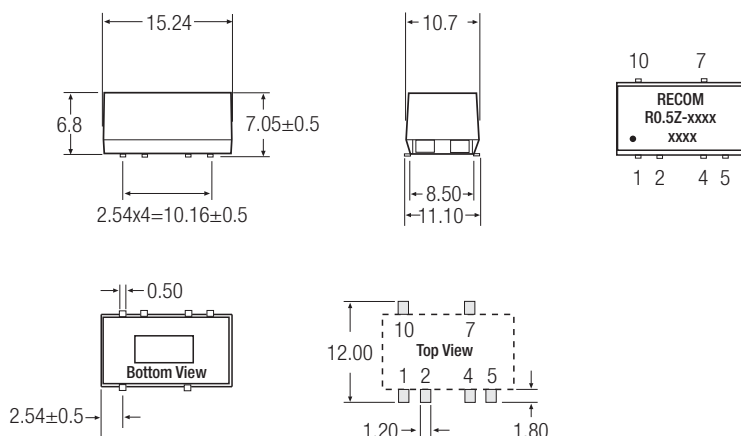


R0.5Z-xx15



Package Style and Pinning (mm)

10 PIN Single SMD Package



Recommended Footprint Details

Pin Connections

| Pin # | Function |
|-------|----------|
| 1 | -Vin |
| 2 | +Vin |
| 4 | -Vout |
| 5 | -Vout |
| 7 | +Vout |
| 10 | NC |

NC= No Connection

XX.X ± 0.5 mm
XX.XX ± 0.25 mm



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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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