

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			0%
No Load Power Consumption			127mW min. / 155mW typ. / 320mW max.
Isolation Voltage	(rated for 1 minute)		500VAC / 60Hz 1000VDC 2000VDC
	Suffix „H“		
Isolation Capacitance			25pF min. / 75pF max.
Isolation Resistance			10 G Ω min.
Short Circuit Protection P-Suffix			1 Second 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.
Vapour 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
Conducted / Radiated Emissions	EN55022		Level A

continued on next page

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

0.5 Watt SMD Isolated Single Output

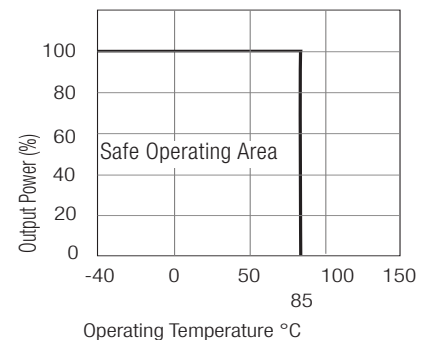


E358085

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

R0.5Z

Derating-Graph (Ambient Temperature)



Refer to Application Notes

Specifications

Certifications

EN General Safety

Report-No.: SPCLVD1005061

EN60950-1:2006+A1:2009

EN Medical Safety

Report: MDD1205098-2 + RM1205098-2

IEC/EN 60601-1 3rd Edition

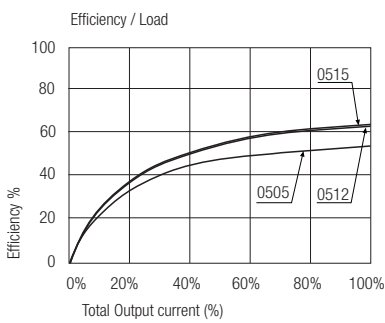
UL General Safety

Report-No.: E358085

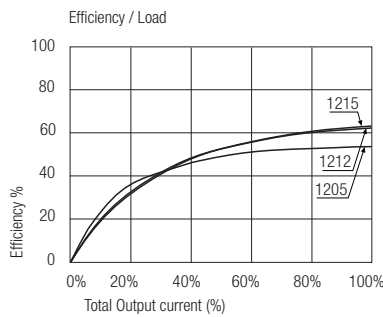
UL60950-1, 2nd Edition

Typical Characteristics

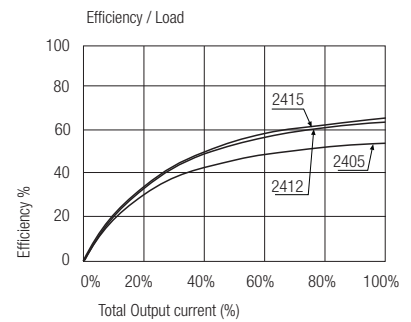
R0.5Z-xx05



R0.5Z-xx12



R0.5Z-xx15

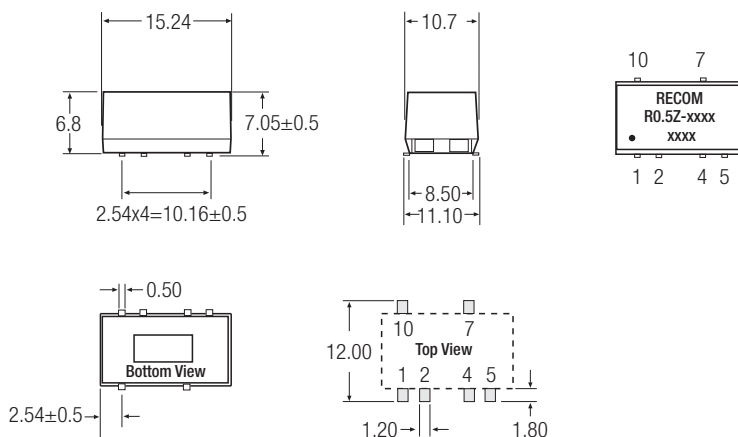


Notes

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

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