

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 $+85^\circ\text{C}$ (see Graph)	
Storage Temperature Range	-55°C to $+125^\circ\text{C}$	
Reflow Temperature	ROHS compliant	245 $^\circ\text{C}$ (30 sec) max.
Vapour Phase Process		230 $^\circ\text{C}$ (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 ($+25^\circ\text{C}$)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F 3947 x 10^3 hours
($+85^\circ\text{C}$)		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

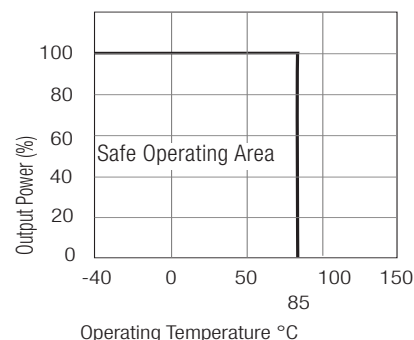
0.5 Watt SMD Isolated Single Output



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

R0.5Z

Derating-Graph (Ambient Temperature)



Refer to Application Notes

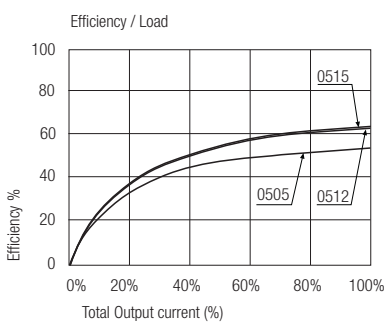
Specifications

Certifications

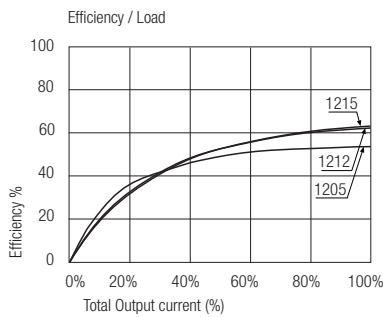
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EN Medical Safety	Report: MDD1205098-2 + RM1205098-2	IEC/EN 60601-1 3rd Edition
UL General Safety	Medical Report + ISO14971 Risk Assessment	UL60950-1, 2nd Edition
	Report-No.: E358085	

Typical Characteristics

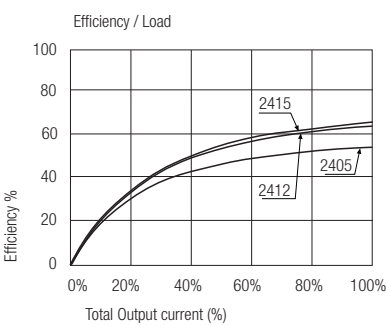
R0.5Z-xx05



R0.5Z-xx12



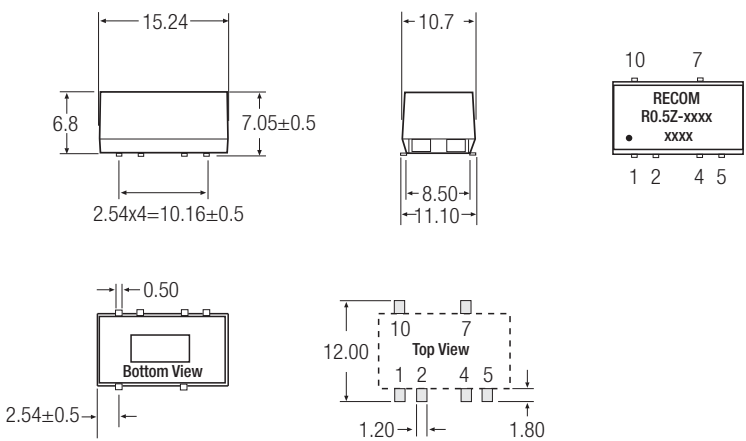
R0.5Z-xx15



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