

## 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 <sup>(1)</sup>
R0.5Z-xx05*	5, 12, 15, 24	5	100	50	1000 $\mu\text{F}$
R0.5Z-xx12*	5, 12, 15, 24	12	42	60	220 $\mu\text{F}$
R0.5Z-xx15*	5, 12, 15, 24	15	33	62	220 $\mu\text{F}$

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% <sup>(2)</sup>		
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 $\Omega$ min.		
Short Circuit Protection	1 Second		
P-Suffix	Continuous		
Operating Temperature Range (natural convection)	$-40^\circ\text{C}$ to $+85^\circ\text{C}$ (see Graph)		
Storage Temperature Range	$-55^\circ\text{C}$ to $+125^\circ\text{C}$		
Reflow Temperature	ROHS compliant	245 $^\circ\text{C}$ (30 sec) max.	
Vapor 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 <sup>3</sup> hours
( $+85^\circ\text{C}$ )		using MIL-HDBK 217F	841 x 10 <sup>3</sup> hours

continued on next page

## ECONOLINE

## DC/DC-Converter

with 3 year Warranty

RECOM

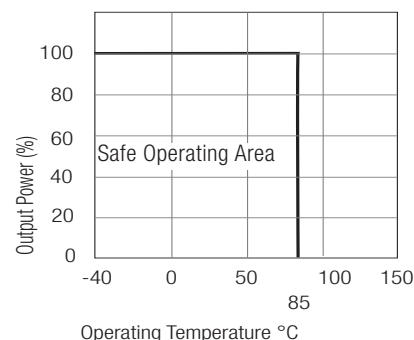
## 0.5 Watt SMD Isolated Single Output



**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)

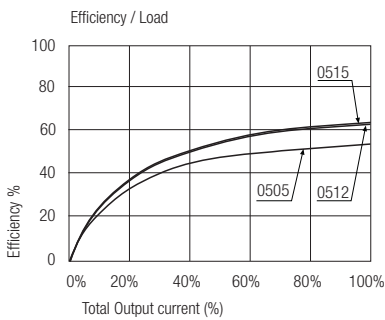
Conducted / Radiated Emissions	EN55022	Level A
Certifications		
EN General Safety	Report-No.: SPCLVD1211033-3	EN60950-1:2006 + A12:2011
EN Medical Safety	Report: MDD1205098-2 + RM1205098-2	IEC/EN 60601-1 3rd Edition
	Medical Report + ISO14971 Risk Assessment	
UL General Safety	Report-No.: E358085	UL60950-1,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

### Notes

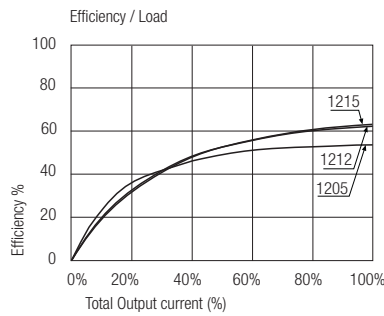
- Note 1: Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter
- Note 2: The R0.5Z series requires a minimum of 10% load on the output to maintain specified regulation. Operating under no-load conditions will not damage these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

### Typical Characteristics

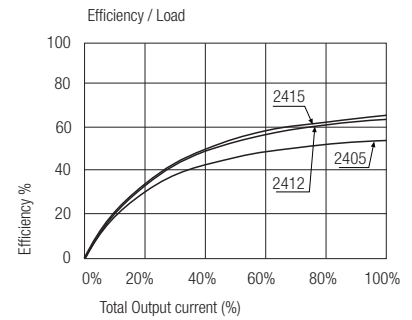
#### R0.5Z-xx05



#### R0.5Z-xx12

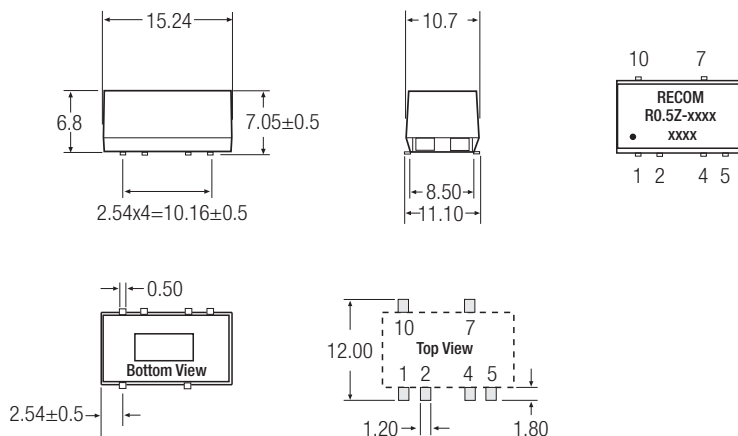


#### R0.5Z-xx15



### 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

# AMEYA360

## Components Supply Platform

Authorized Distribution Brand :



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