

# 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			0%
No Load Power Consumption	127mW min. / 155mW typ. / 320mW max.		
Isolation Voltage	(rated for 1 minute)	500VAC / 60Hz	
		1000VDC	
	Suffix „H“	2000VDC	
Isolation Capacitance			25pF min. / 75pF max.
Isolation Resistance			10 G $\Omega$ 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 <sup>3</sup> hours
(+85°C)		using MIL-HDBK 217F	841 x 10 <sup>3</sup> hours
Conducted / Radiated Emissions	EN55022		Level A

continued on next page

# ECONOLINE

## DC/DC-Converter

with 3 year Warranty



## 0.5 Watt SMD Isolated Single Output



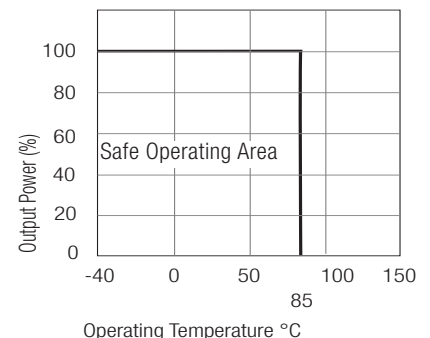
**EN-60950-1 Certified**

**EN-60601-1 Certified**

**UL-60950-1 Certified**

# R0.5Z

## Derating-Graph (Ambient Temperature)



Refer to Application Notes

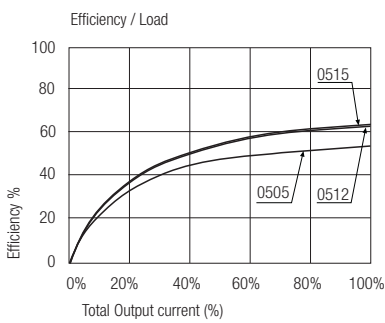
**Specifications**

Certifications

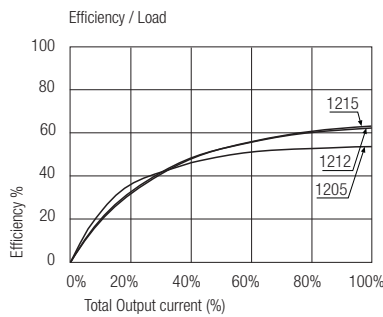
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EN Medical Electrical Equipment	Report-No.: SPC1005061	EN60601-1:1990+A3:1996
UL General Safety	Report-No.: E224736	UL60950-1, 2nd Edition

**Typical Characteristics**

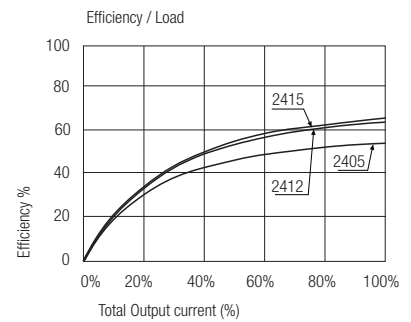
**R0.5Z-xx05**



**R0.5Z-xx12**



**R0.5Z-xx15**

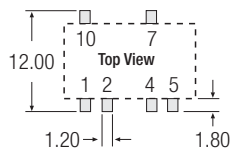
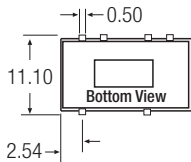
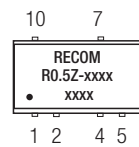
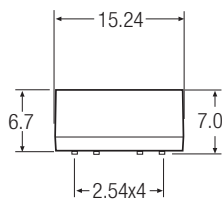


Notes

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