

# Features

## Regulated Converters

- 1kVDC & 2kVDC Isolation
- UL94V-0 Package Material
- RoHS 6/6
- High Temperature Operation
- Toroidal Magnetics
- Optional Continuous Short Circuit Protected

### Selection Guide

Part Number	2kVDC	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Max Capacitive Load <sup>(1)</sup>
<b>Regulated without short circuit protection</b>					
R1Z-xx05	(H)	3.3, 5, 12, 15, 24	5	200	1200µF
R1Z-xx09	(H)	3.3, 5, 12, 15, 24	9	111	1200µF
R1Z-xx12	(H)	3.3, 5, 12, 15, 24	12	42	680µF
<b>Regulated with short circuit protection</b>					
R1Z-xx3.3/P	(H)	3.3, 5, 12, 15, 24	3.3	200	3300µF
R1Z-xx05/P	(H)	3.3, 5, 12, 15, 24	5	200	1200µF

xx= Input Voltage (other input and output voltage combinations available on request  
add suffix -R for tape & reel packing e.g. R1Z-0505-R

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

Input Voltage Range		±5%
Output Voltage Accuracy		±2%
Line Voltage Regulation		1% max.
Load Voltage Regulation		1% max.
Output Ripple and Noise (at 20MHz BW)		100mVp-p max.
Operating Frequency		20kHz min. / 50kHz typ. / 85kHz max.
Efficiency at Full Load		50% min. / 60% typ.
Minimum Load		0%
No Load Power Consumption		134mW min. / 217mW typ. / 350mW max.
Isolation Voltage	(tested for 1 second) (rated for 1 minute)	1000VDC 500VAC / 60Hz
Isolation Voltage	H-Suffix (tested for 1 second) H-Suffix (rated for 1 minute)	2000VDC 1000VAC / 60Hz
Isolation Capacitance		70pF typ.
Isolation Resistance		10 GΩ min.
Short Circuit Protection		1 Second
P-Suffix		Continuous
Operating Temperature Range (natural convection)		-40°C to +100°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)	} For detailed information see Application Notes chapter "MTBF"	using MIL-HDBK 217F
(+71°C)		using MIL-HDBK 217F
		3831 x 10 <sup>3</sup> hours
		1396 x 10 <sup>3</sup> hours

# ECONOLINE

## DC/DC-Converter

with 3 year Warranty



# 1 Watt SMD Miniature Isolated Single Output



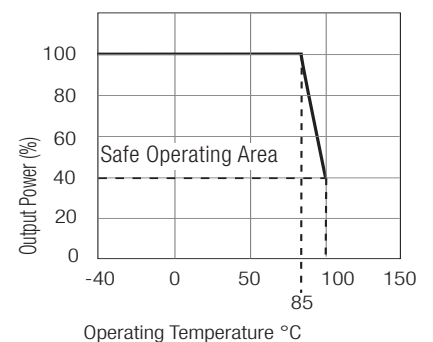
**EN-60950-1 Certified**

# R1Z

### Description

The R1Z series DC/DC converter has been designed for isolating or converting DC power rails where an SMD format with regulated output is required, although it is no larger than a standard unregulated SMD converter.

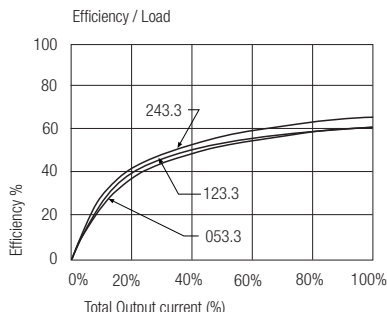
## Derating-Graph (Ambient Temperature)



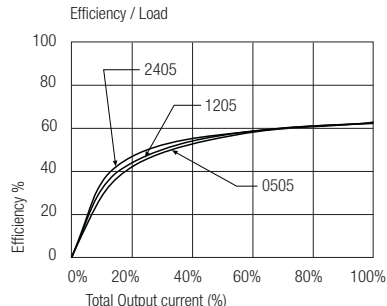
Refer to Application Notes

Typical Characteristics

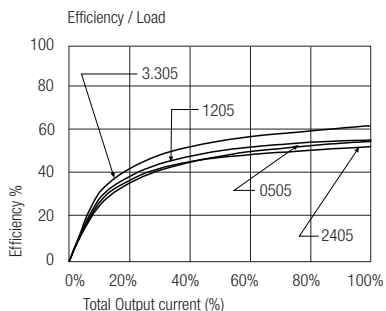
**R1Z-xx3.3/P**



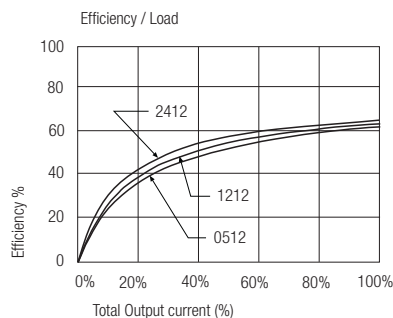
**R1Z-xx05/P**



**R1Z-xx05**



**R1Z-xx12**



Notes

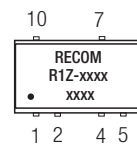
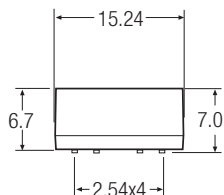
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter

Package Style and Pinning (mm)

Ordering Example: R1Z-0505 (5V Input, 5V Output, not short circuit protected)  
R1Z-0505/HP (5V Input, 5V Output, 2kVDC Isolation and short circuit protection)



10 PIN Single SMD Package



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

Recommended Footprint Details

