

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 SMD	2kVDC	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Max Capacitive Load ⁽¹⁾
Regulated without short circuit protection					
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
Regulated with short circuit protection					
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		$\pm 5\%$
Output Voltage Accuracy		$\pm 2\%$
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) 1000VDC (rated for 1 minute) 500VAC / 60Hz
Isolation Voltage	H-Suffix H-Suffix	(tested for 1 second) 2000VDC (rated for 1 minute) 1000VAC / 60Hz
Isolation Capacitance		70pF typ.
Isolation Resistance		10 GΩ min.
Short Circuit Protection P-Suffix		1 Second 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) (+71°C)	For detailed information see Application Notes chapter "MTBF"	using MIL-HDBK 217F 3831 x 10 ³ hours
		using MIL-HDBK 217F 1396 x 10 ³ hours

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

1 Watt SMD Miniature Isolated Single Output



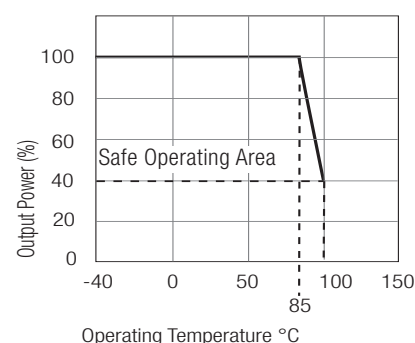
EN-60950-1 Certified

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.

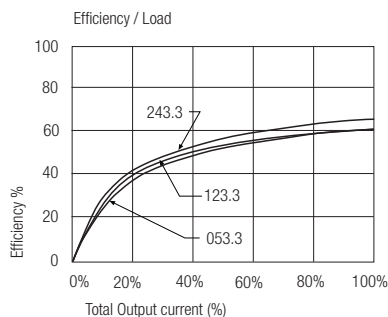
Derating-Graph (Ambient Temperature)



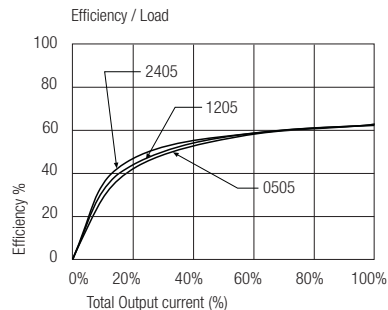
Refer to Application Notes

Typical Characteristics

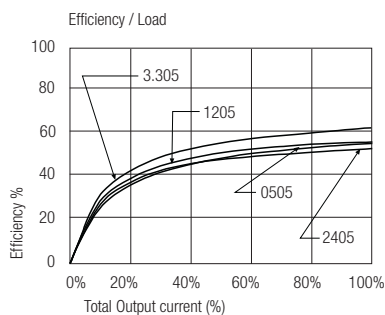
R1Z-xx3.3/P



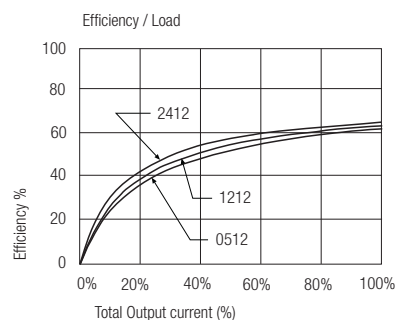
R1Z-xx05/P



R1Z-xx05



R1Z-xx12



Notes

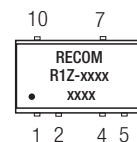
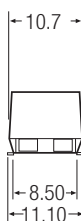
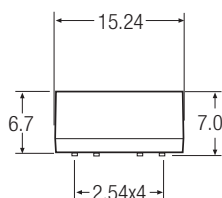
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter

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)

3rd angle projection

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

