

Features

Regulated Converters

- 1kVDC & 2kVDC Isolation
- UL94V-0 Package Material
- RoHS 6/6
- Toroidal Magnetics
- Optional Continuous Short Circuit Protected
- Built-In EN55022 Class A Filter

Selection Guide

Part Number	2kVDC	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Max Capacitive Load ⁽¹⁾
R1Z-xx3.3*	(/H)	3.3, 5, 12, 15, 24	3.3	303	2200µF
R1Z-xx05*	(/H)	3.3, 5, 12, 15, 24	5	200	1200µF
R1Z-xx09*	(/H)	3.3, 5, 12, 15, 24	9	111	680µF
R1Z-xx12*	(/H)	3.3, 5, 12, 15, 24	12	84	680µF
R1Z-xx15*	(/H)	3.3, 5, 12, 15, 24	15	66	470µF

xx= Input Voltage (other input and output voltage combinations available on request)

*add suffix -R for tape & reel packing e.g. R1Z-0505-R

*add suffix /P for continuous short circuit protection, e.g. R1Z-0505/P-R

Specifications (measured at T_A = 25°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. / 40kHz typ. / 80kHz 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		1 Second
P-Suffix		Continuous
Operating Temperature Range (natural convection)		-40°C to +70°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		1.6g
Packing Quantity		33 pcs per tube 250 pcs per Reel
MTBF	R1Z (+25°C) (+70°C) R1Z/P (+25°C) (+70°C)	using MIL-HDBK 217F 2203 x 10 ³ hours 391 x 10 ³ hours using MIL-HDBK 217F 2387 x 10 ³ hours 641 x 10 ³ hours using MIL-HDBK 217F
<i>For detailed information see Application Notes chapter "MTBF"</i>		
Conducted / Radiated Emissions	EN55022	Level A
EN Medical Safety	Report: MDD1205098-4 + RM1205098-4	IEC/EN 60601-1 3rd Edition Medical Report + ISO14971 Risk Assessment
UL General Safety	Report: E358085	UL60950-1, 2nd Edition

ECONOLINE

DC/DC-Converter

with 3 year Warranty

RECOM

1 Watt SMD Miniature Isolated Single Output



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

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.

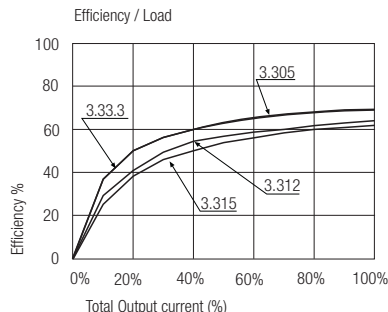
Derating-Graph (Ambient Temperature)



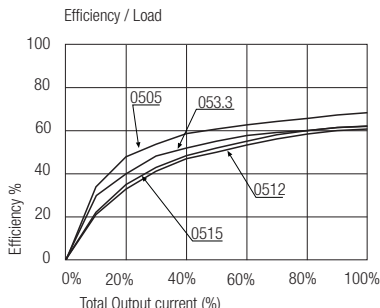
Refer to Application Notes

Typical Characteristics

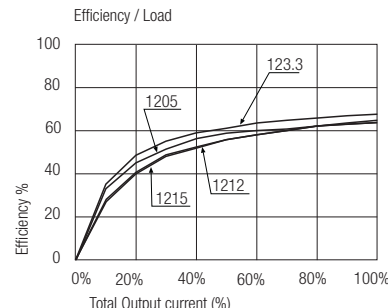
R1Z-3.3xx/P



R1Z-05xx/P



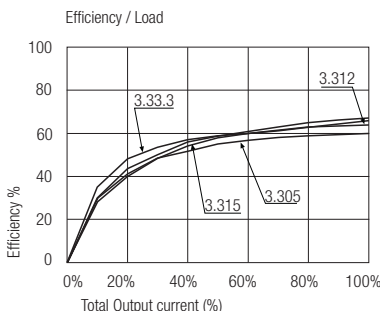
R1Z-12xx/P



R1Z-24xx/P



R1Z-3.3xx



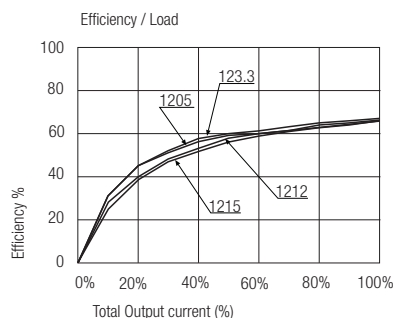
R1Z-05xx



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

R1Z-12xx



R1Z-24xx

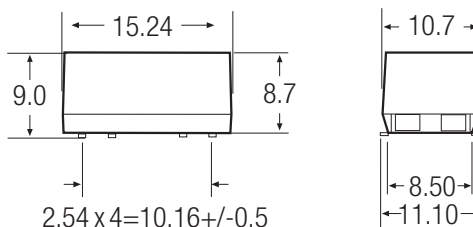


Package Style and Pinning (mm)



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

