

Features

Regulated Converter

- 1kVDC Isolation
- SMD Package Styles
- Single Regulated Output (Internal Linear Regulator)
- UL94V-0 Package Material
- Optional Continuous Short Circuit Protected
- Fully Encapsulated
- Efficiency to 62 %

ECONOLINE

DC/DC-Converter

with 3 year Warranty



0.5 Watt SMD Isolated Single Output

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 ⁽¹⁾
R0.5Z-xx05	5, 12, 15, 24	5	100	50	1000 μF
R0.5Z-xx12	5, 12, 15, 24	12	42	60	470 μF
R0.5Z-xx15	5, 12, 15, 24	15	33	62	470 μF

xx = Input Voltage

* add Suffix "P" for Continuous Short Circuit Protection, e.g. R0.5Z-0505/P

* 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



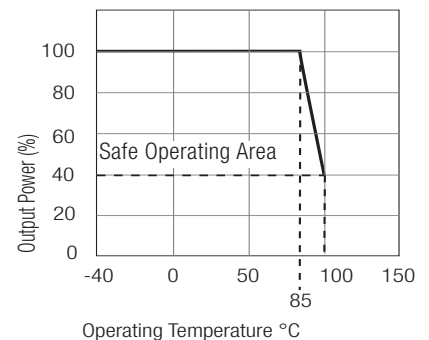
EN-60950-1 Certified

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	50kHz min. / 100kHz typ. / 105kHz max.		
Efficiency at Full Load			50% min. / 60% typ.
Minimum Load			0%
No Load Power Consumption	127mW min. / 155mW typ. / 320mW max.		
Isolation Voltage	(tested for 1 second)	1000VDC	
	(rated for 1 minute)	500VAC / 60Hz	
Isolation Capacitance			25pF min. / 75pF max.
Isolation Resistance			10 G Ω 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)	} Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F	3947 x 10 ³ hours
(+71°C)		using MIL-HDBK 217F	1520 x 10 ³ hours

R0.5Z

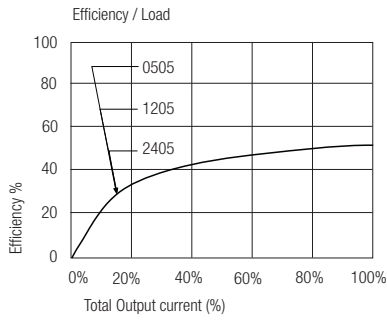
Derating-Graph (Ambient Temperature)



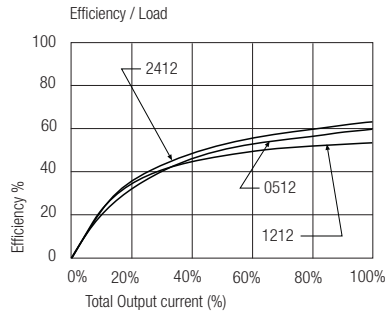
Refer to Application Notes

Typical Characteristics

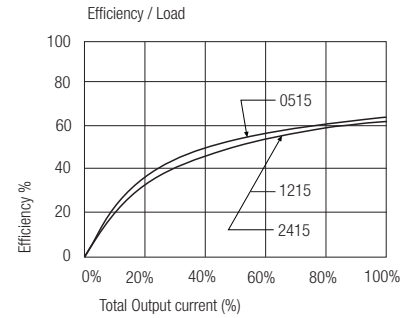
R0.5Z-xx05



R0.5Z-xx12



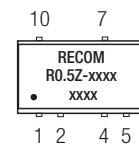
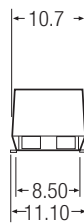
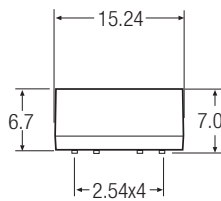
R0.5Z-xx15



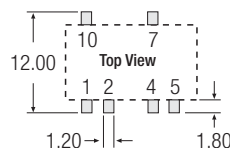
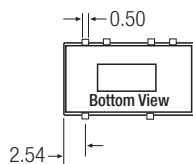
Notes
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter

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