

## Features

## Regulated Converters

Rev.0

- 1kVDC & 2kVDC Isolation
- UL94V-0 Package Material
- No Heatsink Required
- No External Components Required
- Toroidal Magnetics
- Optional Continuous Short Circuit Protected

# ECONOLINE

DC/DC-Converter

# RSZ/P Series

## 1 Watt SMD Miniature Isolated Single Output



### Description

The RSZ 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 RSZ 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.

### Selection Guide

Part Number		Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)
<b>Regulated without short circuit protection</b>				
RSZ-xx05	(H)	3.3, 5, 12, 15, 24	5	200
RSZ-xx09	(H)	3.3, 5, 12, 15, 24	9	111
RSZ-xx12	(H)	3.3, 5, 12, 15, 24	12	42
<b>Regulated with short circuit protection</b>				
RSZ-xx3.3/P	(H)	3.3, 5, 12, 15, 24	3.3	200
RSZ-xx05/P	(H)	3.3, 5, 12, 15, 24	5	200

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

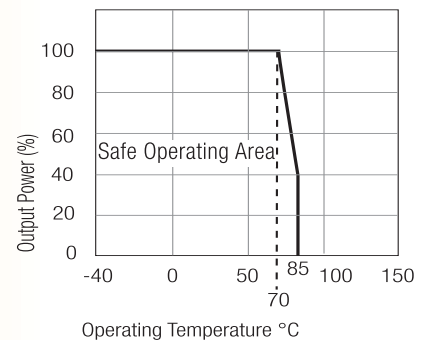
Ordering Example: RSZ-0505 (5V Input, 5V Output, not short circuit protected)  
RSZ-0505/HP (5V Input, 5V Output, 2kVDC Isolation and short circuit protection)

### 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.	
No Load Power Consumption		134mW min. / 217mW typ. / 350mW max.	
Maximum Capacitive Load		47 $\mu\text{F}$	
Isolation Voltage	(tested for 1 second)	1000VDC min.	
Rated Working Voltage	(long term isolation)	see Application Notes	
Isolation Voltage	H-Suffix (tested for 1 second)	2000VDC min.	
Rated Working Voltage	H-Suffix (long term isolation)	see Application Notes	
Isolation Capacitance		70pF typ.	
Isolation Resistance		10 G $\Omega$ min.	
Short Circuit Protection		1 Second	
P-Suffix		Continuous	
Operating Temperature Range (free air)		-40 $^\circ\text{C}$ to +70 $^\circ\text{C}$ (see Graph)	
Storage Temperature Range		-55 $^\circ\text{C}$ to +125 $^\circ\text{C}$	
Reflow Temperature	ROHS compliant (for more details see Application Notes)	245 $^\circ\text{C}$ (30 sec) max.	
Relative Humidity		95% RH	
Package Weight		2.7g	
P-Suffix		2.6g	
MTBF (+25 $^\circ\text{C}$ )	} For detailed information see Application Notes chapter "MTBF" using MIL-HDBK 217F	RSZ types	1210 x 10 <sup>3</sup> hours
		RSZ/P types	1688 x 10 <sup>3</sup> hours
(+70 $^\circ\text{C}$ )		RSZ types	149 x 10 <sup>3</sup> hours
		RSZ/P types	418 x 10 <sup>3</sup> hours

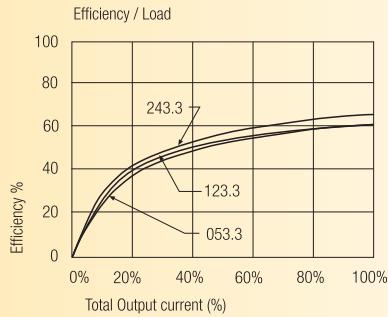
# RECOM

## Derating-Graph (Ambient Temperature)

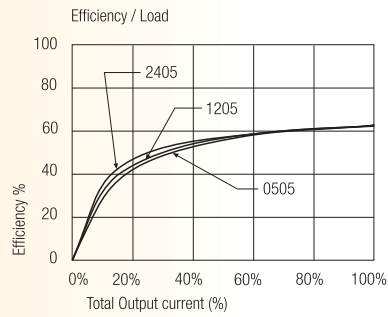


**Typical Characteristics**

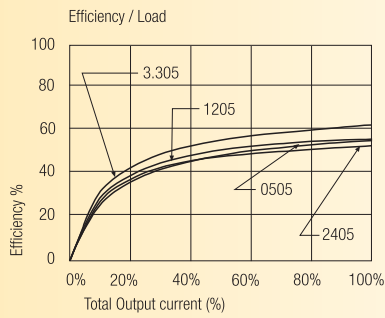
**RSZ-xx3.3/P**



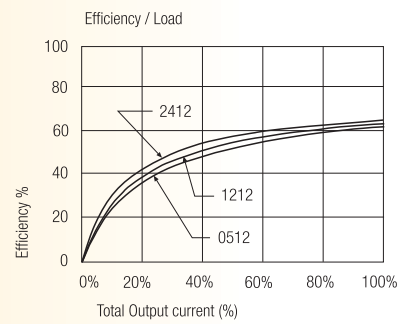
**RSZ-xx05/P**



**RSZ-xx05**



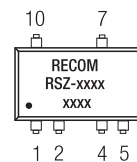
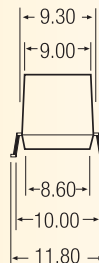
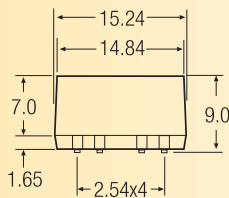
**RSZ-xx12**



**Package Style and Pinning (mm)**



**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**

