

Features

Regulated Converters

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

Description

The RSZ 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.

Selection Guide

Part Number SMD	2kVDC	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Max Capacitive Load ⁽¹⁾
Regulated without short circuit protection					
RSZ-xx05	(H)	3.3, 5, 12, 15, 24	5	200	1200μF
RSZ-xx09	(H)	3.3, 5, 12, 15, 24	9	111	1200μF
RSZ-xx12	(H)	3.3, 5, 12, 15, 24	12	42	680μF
Regulated with short circuit protection					
RSZ-xx3.3/P	(H)	3.3, 5, 12, 15, 24	3.3	200	3300μF
RSZ-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. RSZ-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) (rated for 1 minute)	1000VDC 500VAC / 60Hz
Isolation Voltage	H-Suffix H-Suffix	(tested for 1 second) (rated for 1 minute) 2000VDC 1000VAC / 60Hz
Isolation Capacitance	70pF typ.	
Isolation Resistance	10 $\text{G}\Omega$ min.	
Short Circuit Protection	1 Second	
P-Suffix	Continuous	
Operating Temperature Range (free air)	-40°C to $+70^\circ\text{C}$ (see Graph)	
Storage Temperature Range	-55°C to $+125^\circ\text{C}$	
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	2.7g	
P-Suffix	2.6g	
Packing Quantity	33 pcs per tube 500 pcs per Reel	
MTBF ($+25^\circ\text{C}$)	} For detailed information see Application Notes chapter "MTBF"	RSZ types 1210 x 10^3 hours
($+70^\circ\text{C}$)		RSZ/P types 1688 x 10^3 hours
using MIL-HDBK 217F		RSZ types 149 x 10^3 hours
		RSZ/P types 418 x 10^3 hours

ECONOLINE

DC/DC-Converter

with 3 year Warranty



1 Watt SMD Miniature Isolated Single Output



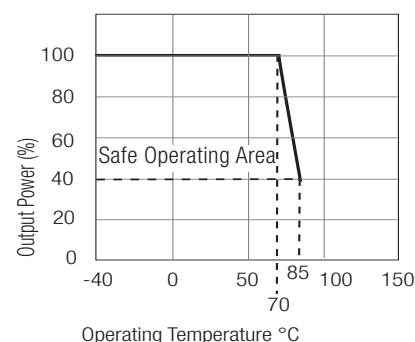
EN-60950-1 Certified

RSZ

EOL Dec.2011

END OF LIFE: Please do not use for new design, replace with new SMD converter R1Z.

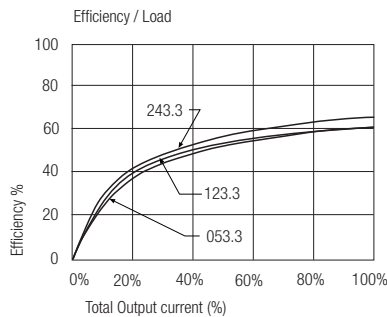
Derating-Graph (Ambient Temperature)



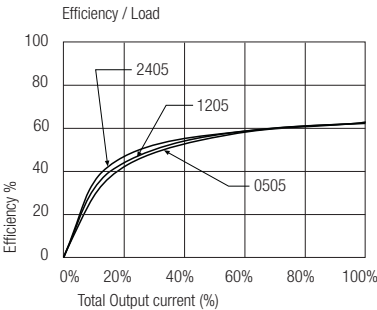
Refer to Application Notes

Typical Characteristics

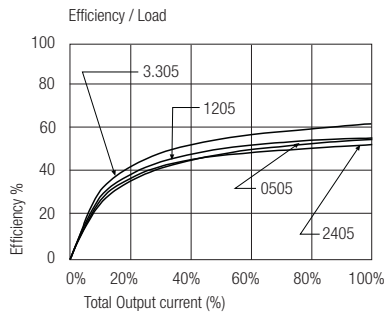
RSZ-xx3.3/P



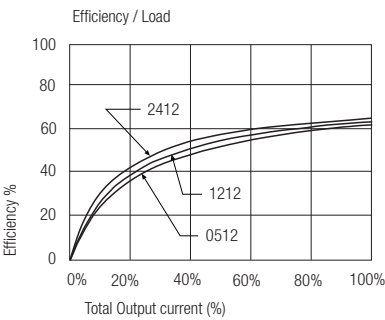
RSZ-xx05/P



RSZ-xx05



RSZ-xx12



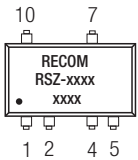
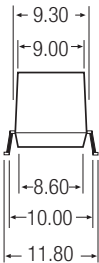
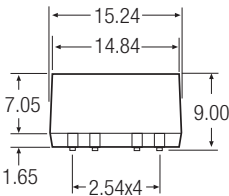
Notes
Note 1 Maximum capacitive load is defined as the capacitive load that will allow start up in under 1 second without damage to the converter

Package Style and Pinning (mm)

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

3rd angle projection

10 PIN Single SMD Package



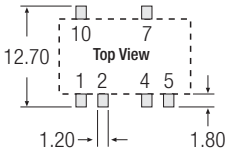
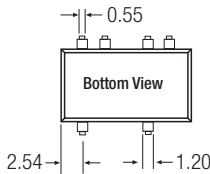
Pin Connections

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



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

RECOM:

[RSZ-0505](#) [RSZ-0505/H](#) [RSZ-0505/HP](#) [RSZ-0505/HP-R](#) [RSZ-0505/H-R](#) [RSZ-0505/P](#) [RSZ-0505/P-R](#) [RSZ-0505-R](#)
[RSZ-0509](#) [RSZ-0509/H](#) [RSZ-0509/H-R](#) [RSZ-0509-R](#) [RSZ-0512](#) [RSZ-0512/H](#) [RSZ-0512/H-R](#) [RSZ-0512-R](#) [RSZ-](#)
[053.3/HP](#) [RSZ-053.3/HP-R](#) [RSZ-053.3/P](#) [RSZ-053.3/P-R](#) [RSZ-1205](#) [RSZ-1205/H](#) [RSZ-1205/HP](#) [RSZ-1205/HP-R](#)
[RSZ-1205/H-R](#) [RSZ-1205/P](#) [RSZ-1205/P-R](#) [RSZ-1205-R](#) [RSZ-1209](#) [RSZ-1209/H](#) [RSZ-1209/H-R](#) [RSZ-1209-R](#)
[RSZ-1212](#) [RSZ-1212/H](#) [RSZ-1212/H-R](#) [RSZ-1212-R](#) [RSZ-123.3/HP](#) [RSZ-123.3/HP-R](#) [RSZ-123.3/P](#) [RSZ-123.3/P-R](#)
[RSZ-1505](#) [RSZ-1505/H](#) [RSZ-1505/HP](#) [RSZ-1505/HP-R](#) [RSZ-1505/H-R](#) [RSZ-1505/P](#) [RSZ-1505/P-R](#) [RSZ-1505-R](#)
[RSZ-1509](#) [RSZ-1509/H](#) [RSZ-1509/H-R](#) [RSZ-1509-R](#) [RSZ-1512](#) [RSZ-1512/H](#) [RSZ-1512/H-R](#) [RSZ-1512-R](#) [RSZ-](#)
[153.3/HP](#) [RSZ-153.3/HP-R](#) [RSZ-153.3/P](#) [RSZ-153.3/P-R](#) [RSZ-2405](#) [RSZ-2405/H](#) [RSZ-2405/HP](#) [RSZ-2405/HP-R](#)
[RSZ-2405/H-R](#) [RSZ-2405/P](#) [RSZ-2405/P-R](#) [RSZ-2405-R](#) [RSZ-2409](#) [RSZ-2409/H](#) [RSZ-2409/H-R](#) [RSZ-2409-R](#)
[RSZ-2412](#) [RSZ-2412/H](#) [RSZ-2412/H-R](#) [RSZ-2412-R](#) [RSZ-243.3/HP](#) [RSZ-243.3/HP-R](#) [RSZ-243.3/P](#) [RSZ-243.3/P-R](#)
[RSZ-3.305](#) [RSZ-3.305/H](#) [RSZ-3.305/HP](#) [RSZ-3.305/HP-R](#) [RSZ-3.305/H-R](#) [RSZ-3.305/P](#) [RSZ-3.305/P-R](#) [RSZ-](#)
[3.305-R](#) [RSZ-3.309](#) [RSZ-3.309/H](#) [RSZ-3.309/H-R](#) [RSZ-3.309-R](#) [RSZ-3.312](#) [RSZ-3.312/H](#) [RSZ-3.312/H-R](#) [RSZ-](#)
[3.312-R](#) [RSZ-3.33.3/HP](#) [RSZ-3.33.3/HP-R](#) [RSZ-3.33.3/P](#) [RSZ-3.33.3/P-R](#)