RS31322 — 22V, 4.5A Dual-Input Power MUX with Adjustable OVP & Priority

Features

Power Path

- 2.97V to 22V operating input range
- Up to 4.5A continuous output current
- Low operating quiescent current
- Low 10μA shutdown current
- Reverse-current blocking

Flexible Power MUX Control

- Dual-input, single-output power MUX
- Priority selection between input sources
- Independent enable control for each input
- Fast input switchover with quick recovery
- Reverse-current blocking during switchover
- Fault-status indication

Integrated Protection

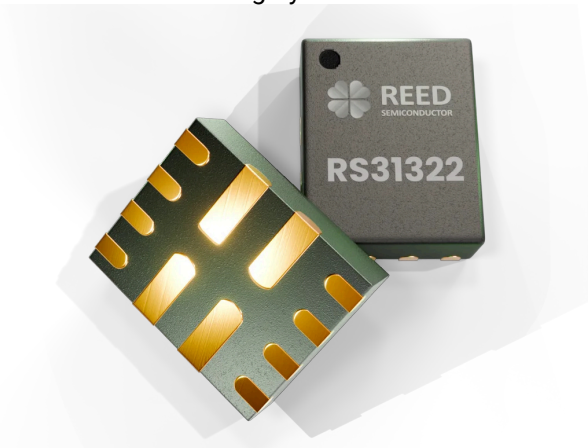
- Adjustable overcurrent protection (OCP)
- Input undervoltage protection (UVP)
- Input overvoltage protection (OVP)
- Overtemperature protection (OTP)

Package & Integration

- Compact 2mm × 2.5mm, 12-pin VQFN package
- RoHS compliant and Green

Applications

- Multiple and Redundant Power Sources
- Battery-Powered Systems
- Backup and Standby Power
- Power-Path Management
- Servers and Networking Equipment
- Surveillance Systems
- Telematics and Tracking Systems



Description

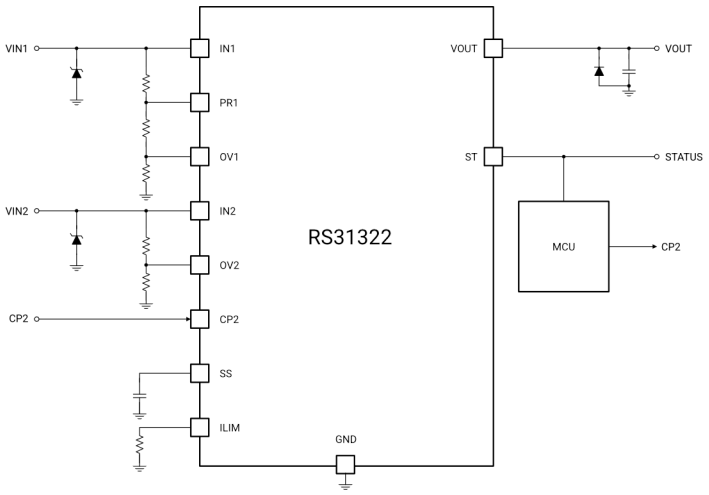
The RS31322 is a dual-input, single-output Power MUX designed for flexible selection and seamless switchover between two power sources. Operating from 2.97V to 22V and supporting up to 4.5A continuous output current, the device integrates back-to-back MOSFETs to provide reverse-current blocking and a compact power-path solution.

Adjustable input-source priority and manual source selection provide flexible control of the two input channels. Fast 1μs switchover helps minimize output-voltage disturbance during source transitions, while adjustable input settling and output soft-start times allow system behavior to be optimized for the application.

Integrated protection includes adjustable overcurrent protection (OCP), adjustable input overvoltage protection (OVP), and overtemperature protection (OTP). Channel status indication provides additional system-level monitoring of the power path.

The RS31322 is offered in a compact 2mm × 2.5mm, 12-pin VQFN package and is well suited for redundant power sources, battery and adapter selection, backup and standby power, networking equipment, industrial systems, surveillance, and telematics applications.

Typical Application Schematic



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Ordering Information

PART NUMBER	PACKAGE	SIZE	MSL RATING	SHIPPING METHOD	PACKAGE MARKING
RS31322R	VQFN-12	2 × 2.25mm	Level-1	3000u Tape & Reel	R31322

Top Marking

Line 1

- R: Prefix of Reed Semiconductor (R is replaced by E for engineering lots)
- Y: Year code
- WW: Week code
- S: Assembly site code

Line 2

- PPPPP: Truncated part number

Line 3

- LLLL: Lot code

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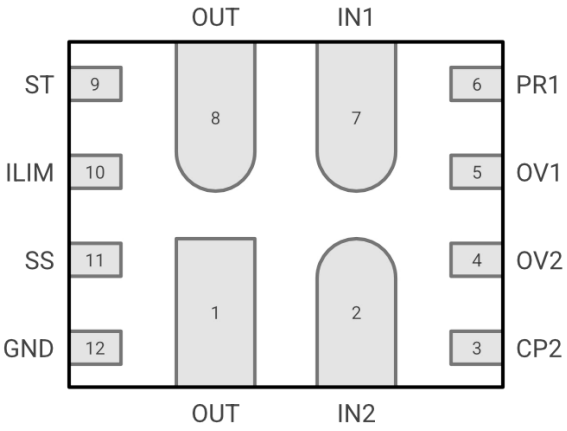
Package Reference



VQFN-12 (2.0 × 2.5mm)

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Pin Descriptions

PIN	NAME	TYPE	DESCRIPTION
1, 8	OUT	P	Power output.
2	IN2	P	Channel 2 power input.
3	CP2	I	Channel 2 priority comparator input. The CP2 voltage is compared with PR1 to determine the input switchover threshold.
4	OV2	I	Channel 2 overvoltage protection configuration input. Connect to GND if unused.
5	OV1	I	Channel 1 overvoltage protection configuration input. Connect to GND if unused.
6	PR1	I	Channel 1 priority configuration input. Connect to IN1 through a resistor divider to set the input switchover threshold. Connect to GND if unused.
7	IN1	P	Channel 1 power input.
9	ST	O	Channel status output indicating the selected input channel. Connect to GND if unused.
10	ILIM	I	Current-limit configuration input for both channels. Connect a resistor from ILIM to GND to set the current-limit threshold.
11	SS	I	Timing configuration input. Connect a capacitor from SS to GND to set the input settling and output soft-start times.
12	GND	G	Device ground.

Type: I = Input, O = Output, I/O = Bidirectional, P = Power, G = Ground, — = No Connect.

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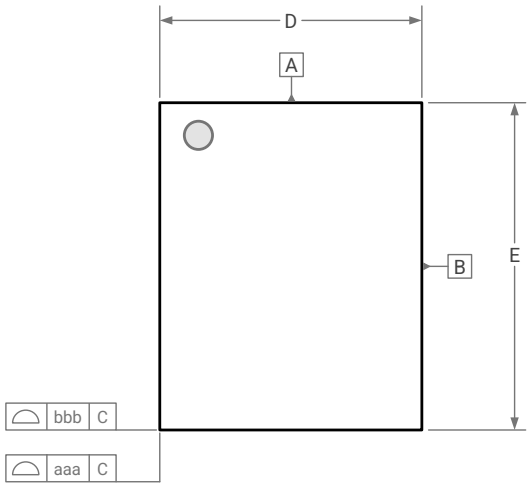
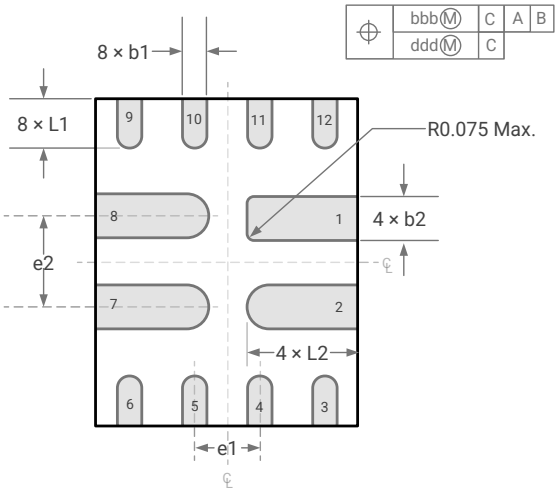
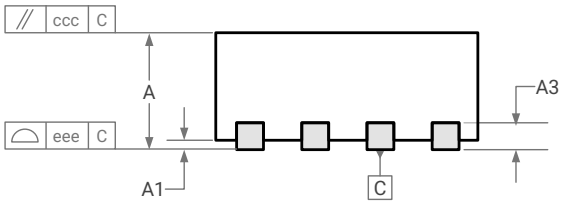
Package Dimensions



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Notes

1. All dimensions are in millimeters.
2. Drawing is not to scale.

REF	MIN	NOM	MAX
A	0.700	0.750	0.800
A1	—	—	0.050
A3		0.203 Ref.	
D	1.900	2.000	2.100
E	2.400	2.500	2.600
b1	0.150	0.200	0.250
b2	0.300	0.350	0.400
e		0.500 BSC	
e1		0.700 BSC	
L1	0.350	0.400	0.450
L2	0.800	0.850	0.900
Geometric Tolerancing			
aaa		0.10	
bbb		0.10	
ccc		0.10	
ddd		0.05	
eee		0.08	

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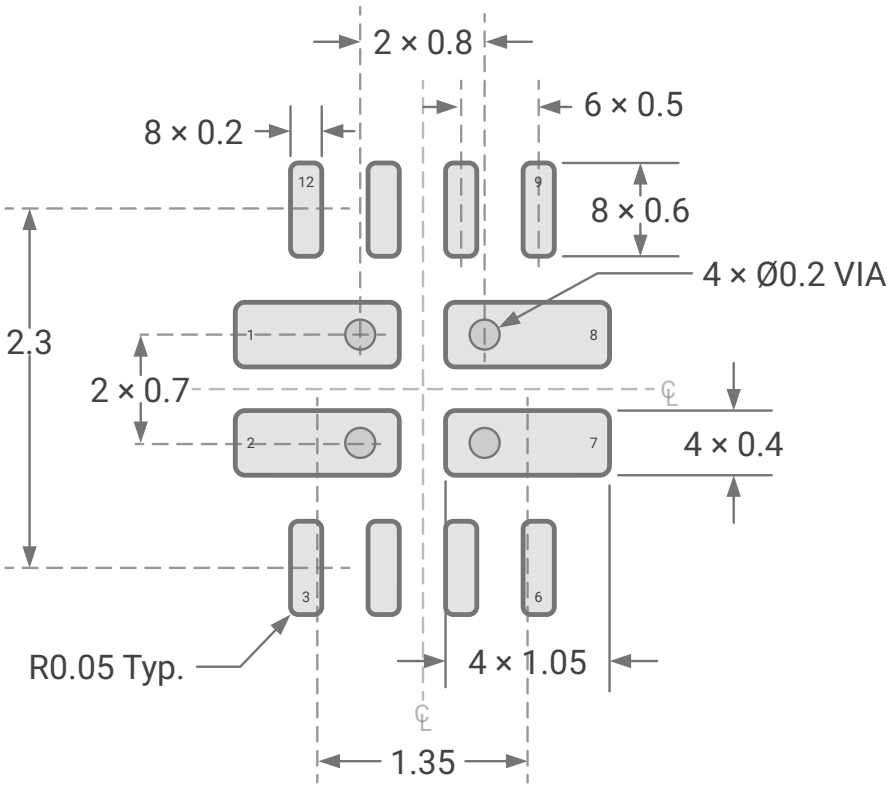
Recommended Land Pattern



Note:

1. All dimensions are in millimeters.
2. Drawing is not to scale.

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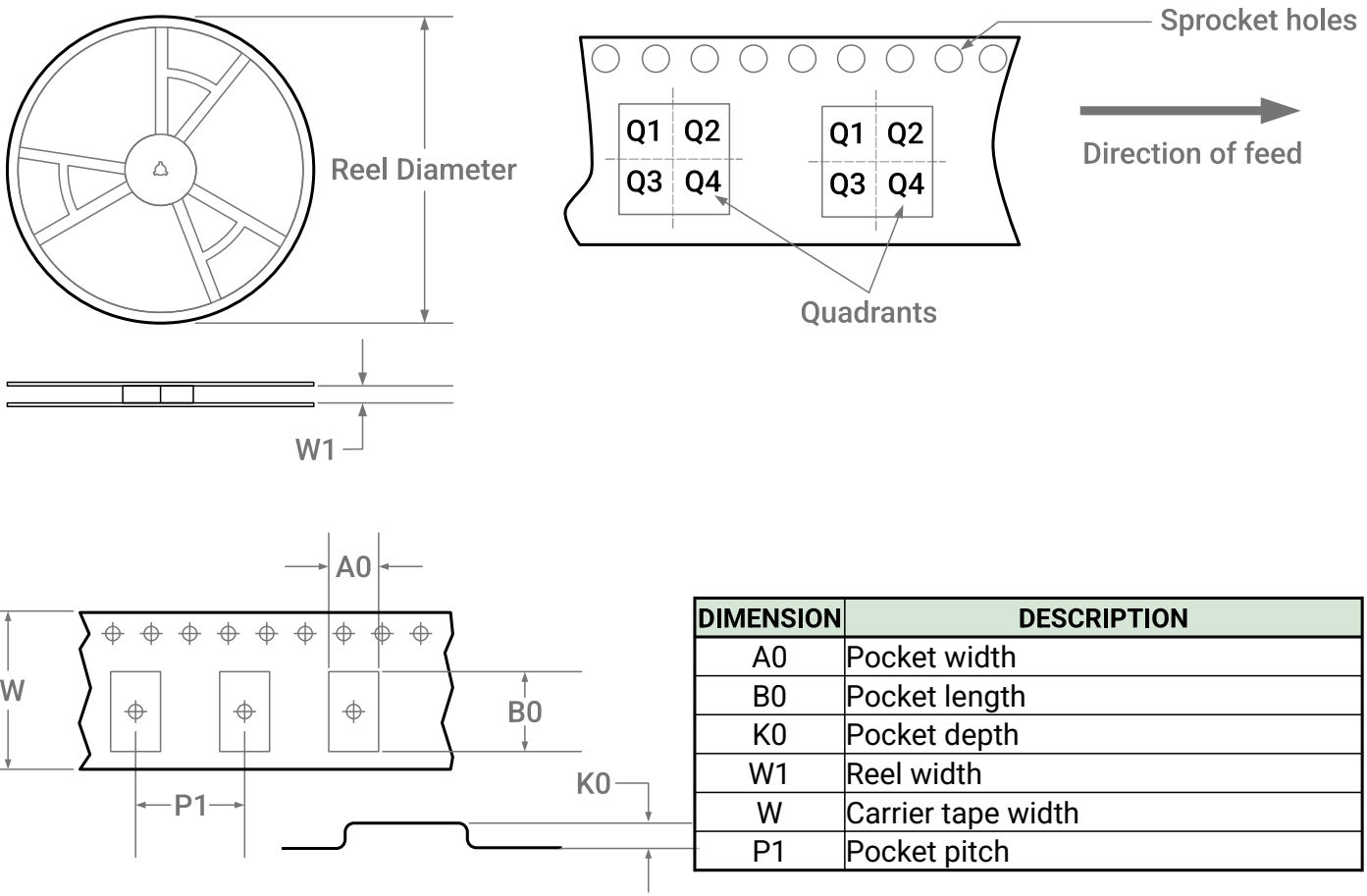
Tape and Reel Information



DIMENSION	DESCRIPTION
A0	Pocket width
B0	Pocket length
K0	Pocket depth
W1	Reel width
W	Carrier tape width
P1	Pocket pitch

PACKAGE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUADRANT
2 × 2.5	178	8	2.2	2.7	1.0	4.0	8.0	Q1

Note:
1. All dimensions are nominal
2. All dimensions are in millimeters (mm)

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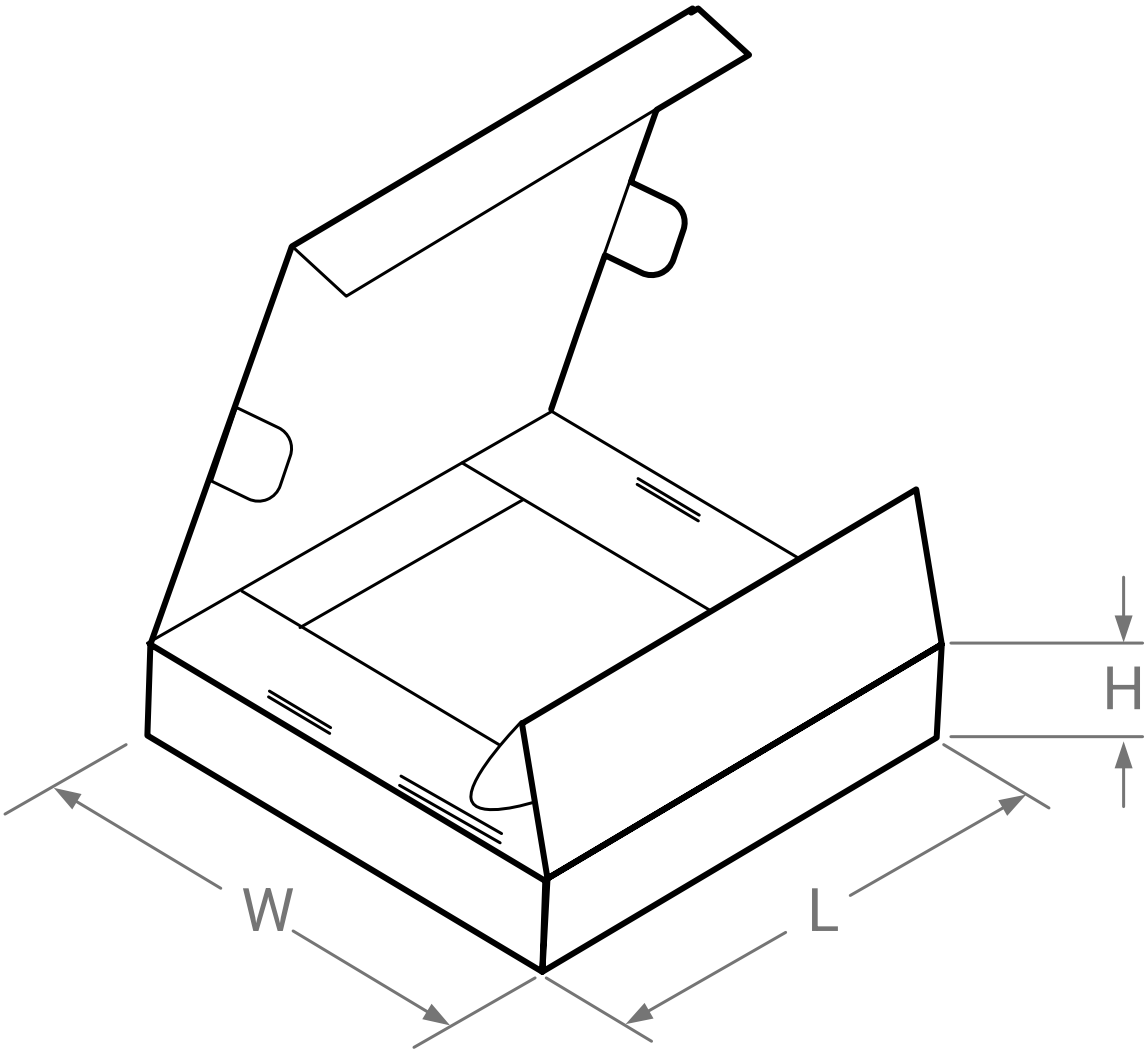
Pizza Box Dimensions



PACKAGE SIZE	UNITS / BOX	LENGTH	WIDTH	HEIGHT
2 × 2.5	3000	205	200	25

Notes:

1. All measurements are in millimeters;
2. All measurements are nominal.

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