

RS31321 – 5.5V/18V, 4.5A Dual-Input Power MUX with Priority Selection

Features

High-Performance Power Path

- Dual input ranges:
 - IN1: 4V to 5.5V
 - IN2: 4V to 18V
- Up to 4.5A continuous output current
- Low on-resistance: 40mΩ typ. (IN1), 64mΩ typ. (IN2)
- Low 10μA shutdown current

Flexible Power MUX Control

- Adjustable input-source priority selection
- Manual input-source selection
- Fast 1μs input switchover
- Adjustable input settling time
- Adjustable output soft-start time
- Channel status indication

Integrated Protection

- Adjustable overcurrent protection (OCP)
- Adjustable input undervoltage 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 and Adapter Power Selection
- Backup and Standby Power
- Power-Path Management
- Servers and Networking Equipment
- Surveillance Systems
- Telematics and Tracking Systems



Description

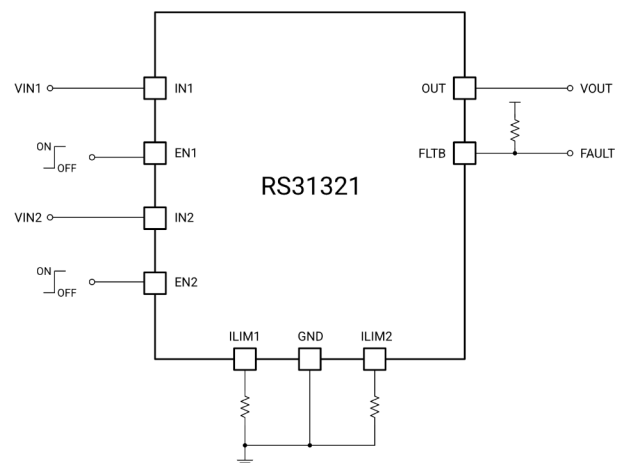
The RS31321 is a dual-input, single-output Power MUX designed for seamless power-path selection between two different-voltage input sources. IN1 supports operation up to 5.5V, while IN2 supports operation up to 18V, making the device well suited for systems that select between a low-voltage source and a higher-voltage supply. The device supports up to 4.5A continuous output current and integrates back-to-back MOSFETs with low on-resistance of 40mΩ typical for IN1 and 64mΩ typical for IN2.

Independent enable control and priority selection provide flexible source management, while fast switchover minimizes output-voltage disturbance during transitions between input sources. Integrated reverse-current blocking prevents current from flowing back into an inactive or lower-voltage source.

The RS31321 integrates adjustable overcurrent protection (OCP), input undervoltage and overvoltage protection, overtemperature protection (OTP), and fault-status indication, providing comprehensive power-path protection and system monitoring.

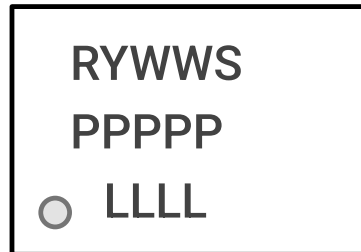
Offered in a compact 2mm × 2.5mm, 12-pin VQFN package, the RS31321 is well suited for battery and adapter selection, backup and standby power, redundant power sources, and other multi-source power-path applications.

Typical Application Schematic



Ordering Information

PART NUMBER	PACKAGE	SIZE	MSL RATING	SHIPPING METHOD	PACKAGE MARKING
RS31321R	VQFN-12	2 × 2.25mm	Level-1	3000u Tape & Reel	R31321

Top Marking

Line 1

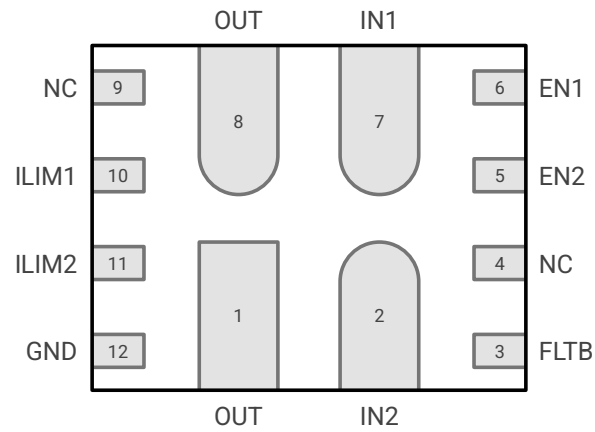
- R: Prefix of Reed Semiconductor (R is replaced by E for engineering lots)
- Y: Year code
- WW: Week code
- S: Assembly site code

Line 2

- PPPPP: Truncated part number

Line 3

- LLLL: Lot code

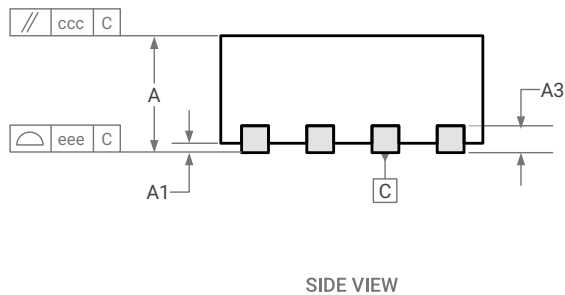
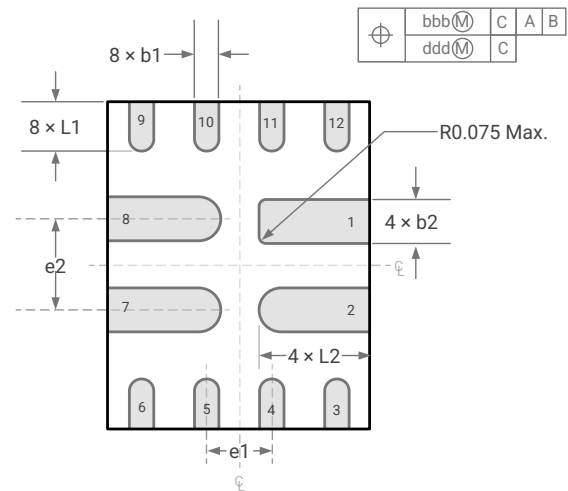
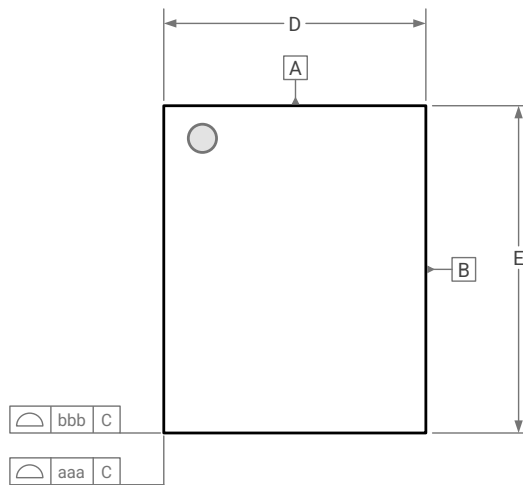
Package Reference**VQFN-12 (2.0 x 2.5mm)**

Pin Descriptions

PIN	NAME	TYPE	DESCRIPTION
1, 8	OUT	P	Power output.
2	IN2	P	Channel 2 power input.
3	FLT B	O	Open-drain fault output. Pulls low when a fault condition is detected.
4, 9	NC	—	No internal connection.
5	EN2	I	Channel 2 enable input. Drive high to enable Channel 2 and low to disable Channel 2.
6	EN1	I	Channel 1 enable input. Drive high to enable Channel 1 and low to disable Channel 1.
7	IN1	P	Channel 1 power input.
10	ILIM1	I	Channel 1 current-limit configuration input. Connect a resistor from ILIM1 to GND to set the current-limit threshold.
11	ILIM2	I	Channel 2 current-limit configuration input. Connect a resistor from ILIM2 to GND to set the current-limit threshold.
12	GND	G	Device ground.

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

Package Dimensions



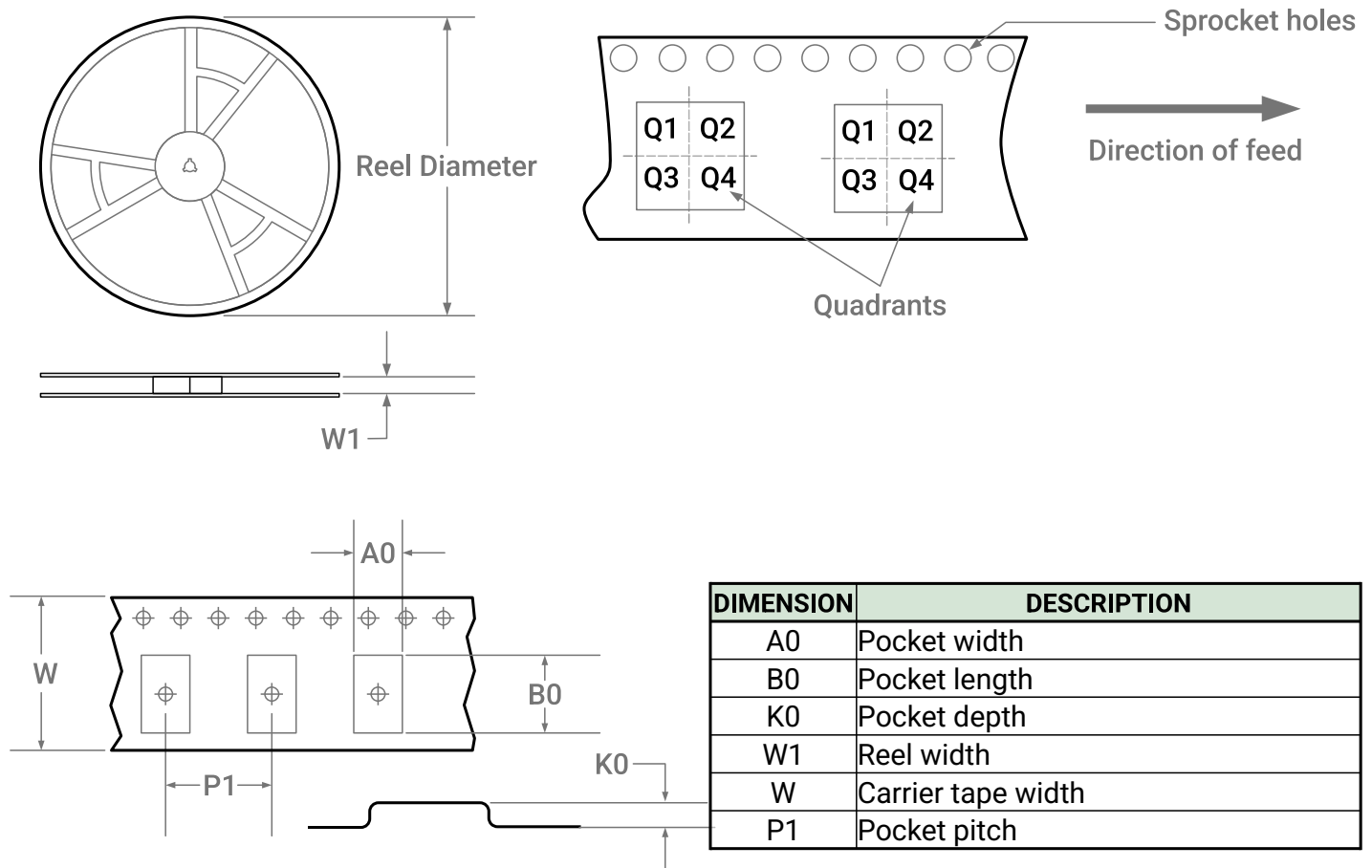
Notes

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		

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

Tape and Reel Information

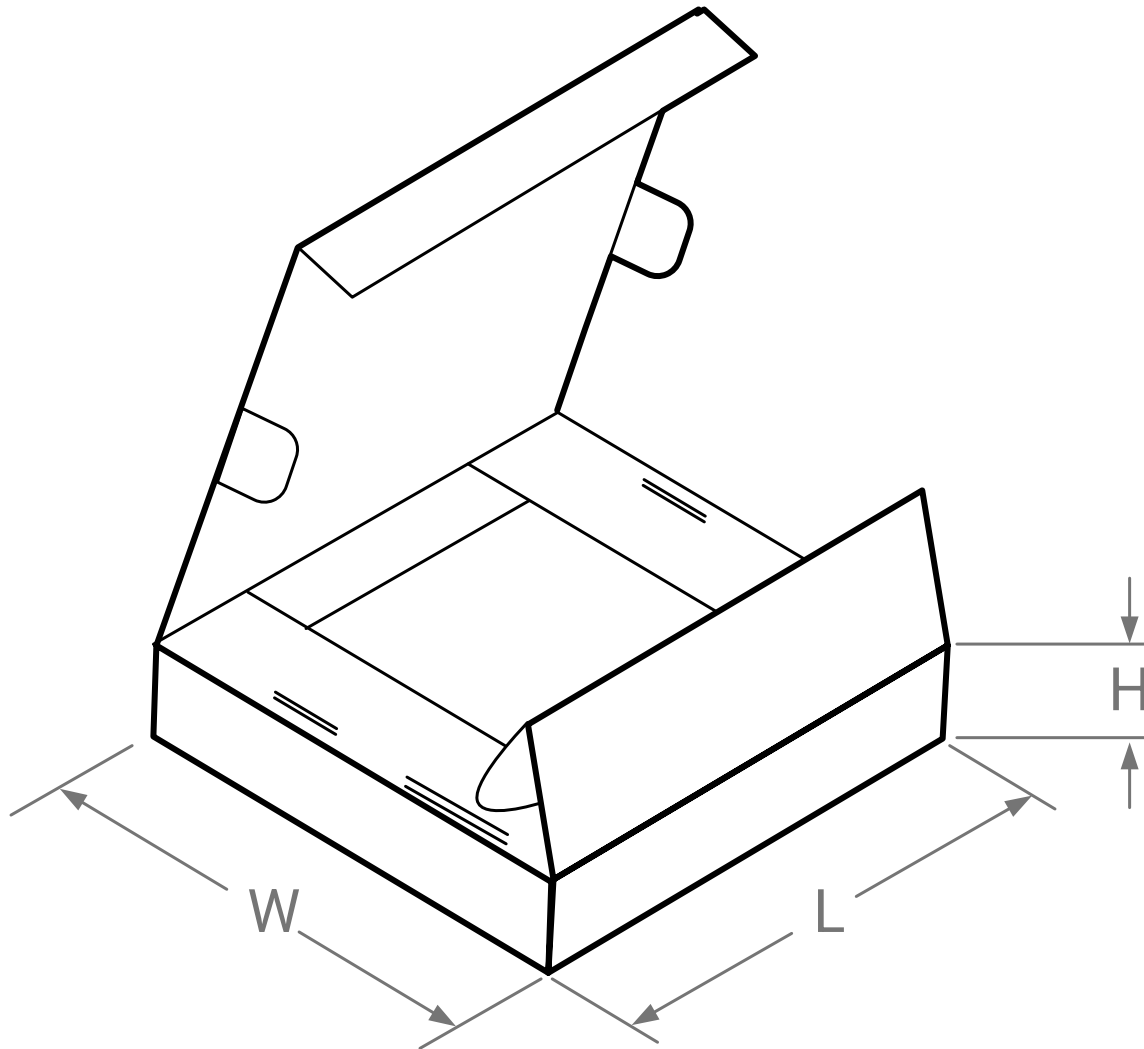


PACKAGE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUADRANT
2 × 2.5	178	8	2.2	2.7	1.0	4.0	8.0	Q1

Note:

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

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.