

## RS31323 – 18V/18V, 4.5A Dual-Input Power MUX with Priority Selection

### Features

#### High-Performance Power Path

- Dual 4V to 18V input voltage range
- 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

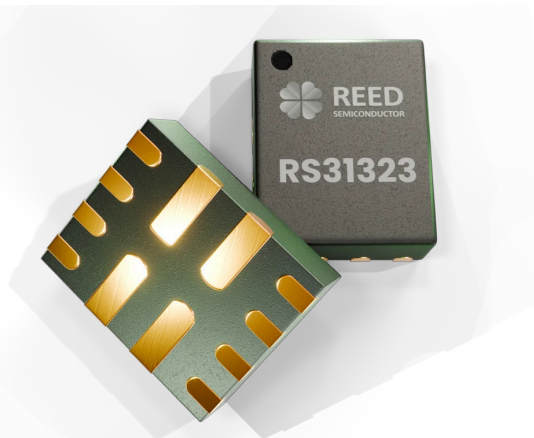
- Adjustable overcurrent protection (OCP)
- Adjustable input overvoltage protection (OVP)
- Overtemperature protection (OTP)

#### Package & Integration

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

### Applications

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



### Description

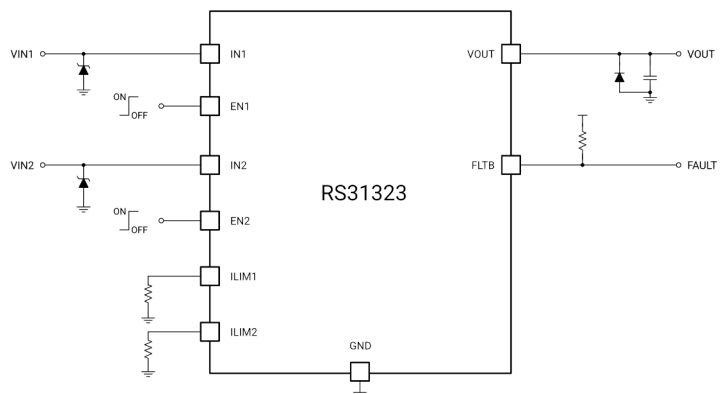
The RS31323 is a dual-input, single-output Power MUX designed for seamless power-path selection between two input sources. Both IN1 and IN2 support operation from 4V to 18V, providing flexible source selection across a wide range of power architectures. The device supports up to 4.5A continuous output 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 RS31323 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.

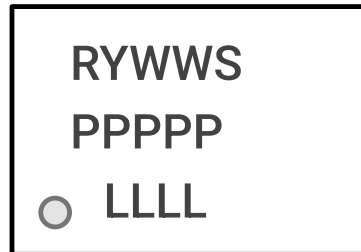
Offered in a compact 2mm × 2.5mm, 12-pin VQFN package, the RS31323 is well suited for redundant power sources, backup and standby power, power-path management, networking equipment, surveillance systems, and other multi-source power applications.

### Typical Application Schematic



**Ordering Information**

| PART NUMBER | PACKAGE | SIZE       | MSL RATING | SHIPPING METHOD   | PACKAGE MARKING |
|-------------|---------|------------|------------|-------------------|-----------------|
| RS31323R    | VQFN-12 | 2 × 2.25mm | Level-1    | 3000u Tape & Reel | R31323          |

**Top Marking**

**Line 1**

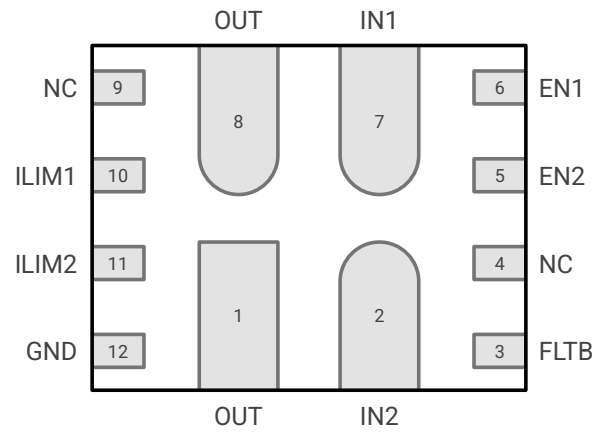
- R: Prefix of Reed Semiconductor (R is replaced by E for engineering lots)
- Y: Year code
- WW: Week code
- S: Assembly site code

**Line 2**

- PPPPP: Truncated part number

**Line 3**

- LLLL: Lot code

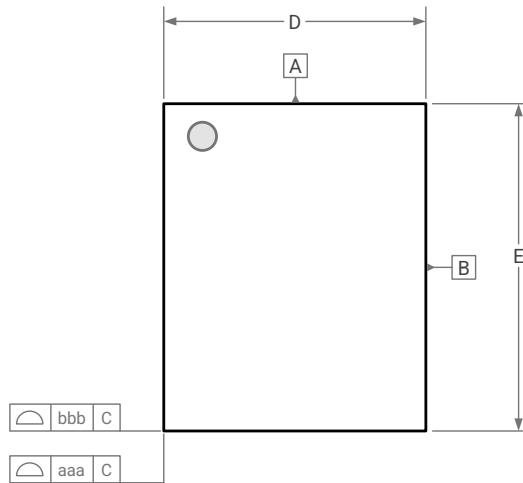
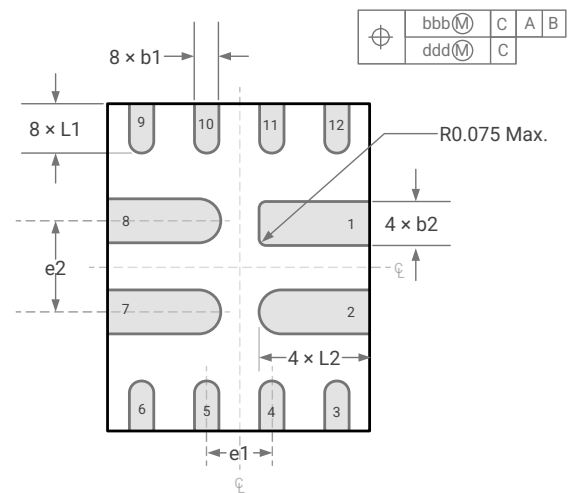
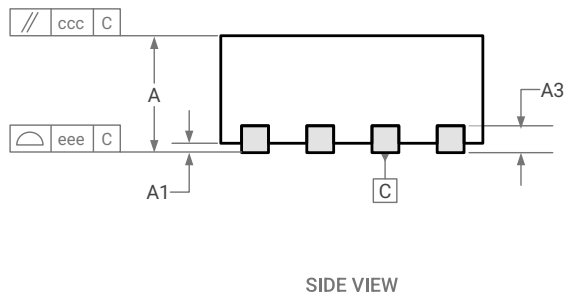
**Package Reference****VQFN-12 (2.0 × 2.5mm)**

## 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

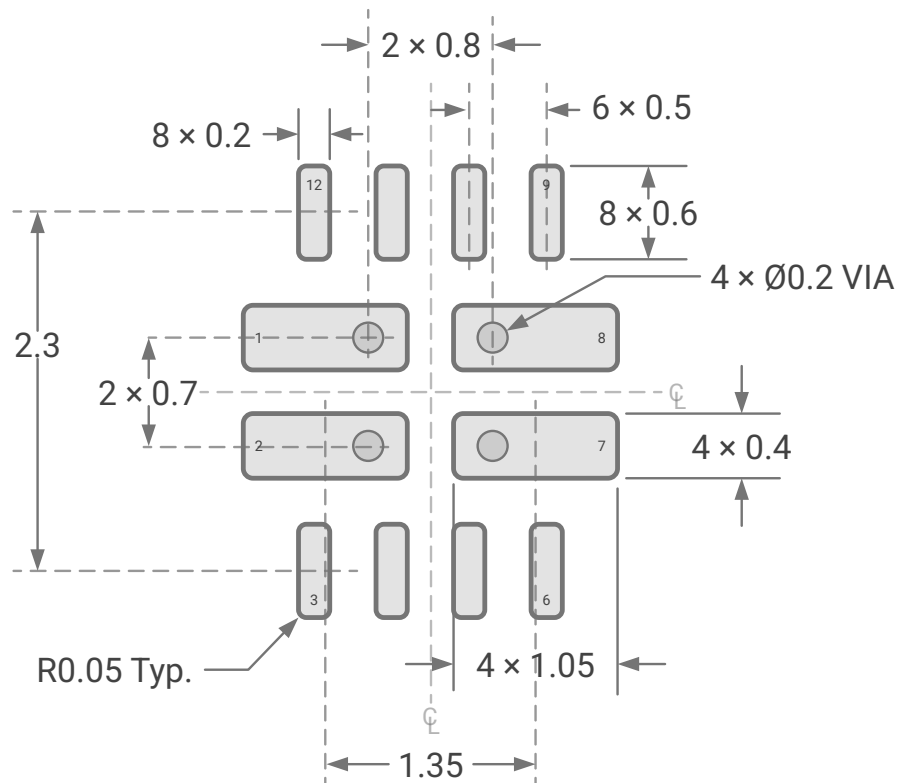


### Notes

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       |       |       |

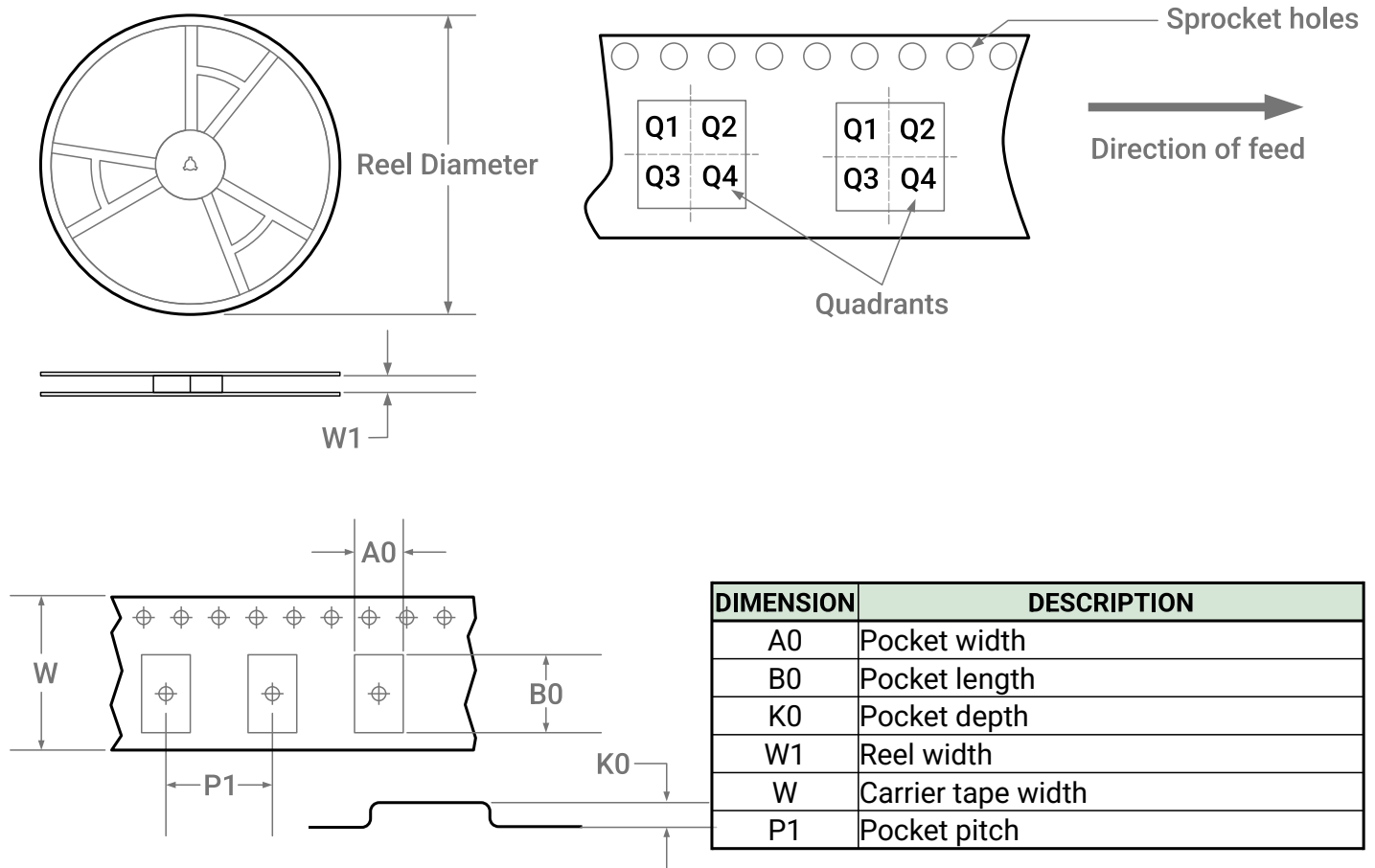
## Recommended Land Pattern



### Note:

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

## Tape and Reel Information

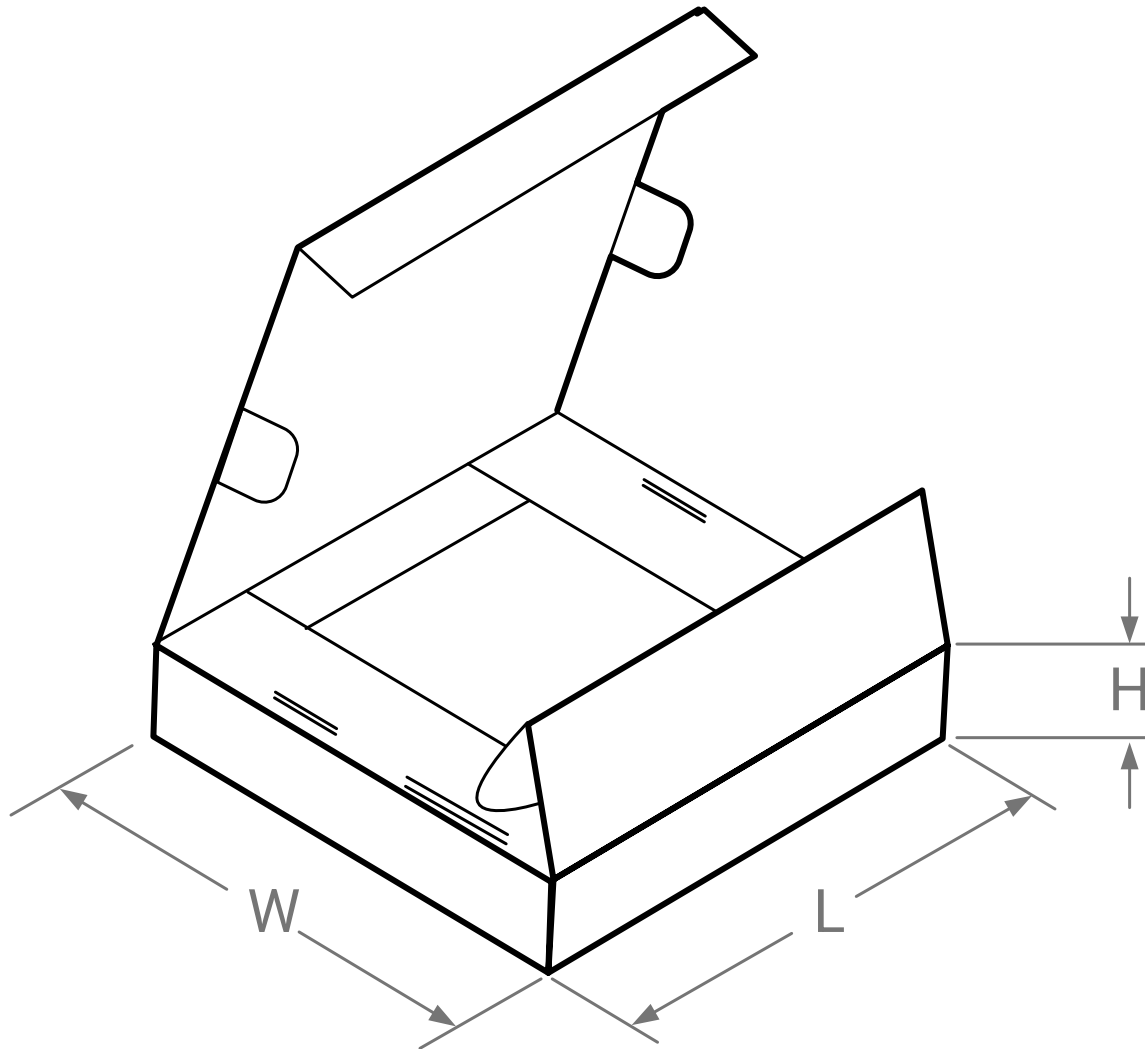


| PACKAGE SIZE | REEL DIAMETER | W1 | A0  | B0  | K0  | P1  | W   | QUADRANT |
|--------------|---------------|----|-----|-----|-----|-----|-----|----------|
| 2 × 2.5      | 178           | 8  | 2.2 | 2.7 | 1.0 | 4.0 | 8.0 | Q1       |

**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.