RS31211 • RS31212 • RS31309 • RS31311 - 3.3V • 5V • 12V 4A eFuse

Features

Product Options

- 3.3V eFuse - RS31211
- 5V eFuse - RS31212
- 12V eFuse - RS31311
- 2.97V-18V eFuse - RS31309

Protection Features

- Adjustable 0.5A to 4A current limit
- Fixed output over-voltage clamp
- 3.8V (RS31211)
- 5.7V (RS31212)
- 13.7V (RS31311)
- Over-temperature protection

Control & Configuration

- Programmable output slew rate
- EN control with programmable input UVLO

Performance

- Integrated 34mΩ pass MOSFET

Compliance & Package

- ROHS compliant
- 2mm × 2mm WSON-8 package

Description

The RS31211, RS31212, RS31309, and RS31311 are integrated eFuse protection switches designed to protect downstream circuitry from over-current, over-voltage, and over-temperature fault conditions. An integrated 34mΩ pass MOSFET provides a compact, low-loss power path while minimizing external component count.

The devices feature an adjustable 0.5A to 4A current limit, programmable output slew rate, and EN control with an adjustable input UVLO threshold, allowing designers to optimize startup behavior and fault protection for a wide range of applications.

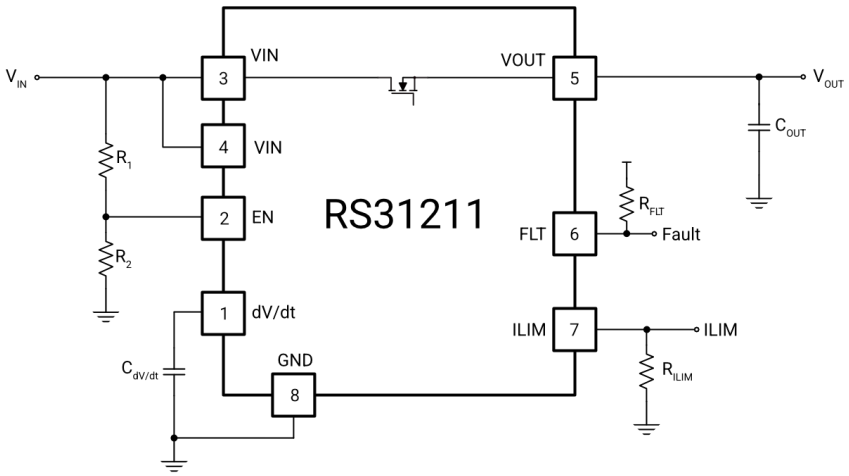
Fixed output over-voltage clamps protect sensitive loads during supply fault conditions. The family includes optimized 3.3V, 5V, and 12V eFuse solutions, along with a wide-input 2.97V to 18V device for greater design flexibility.

Available in a compact 2 × 2 mm WSON package, the RS31211 family is ideal for servers, PCIe cards, storage devices, industrial systems, and other space-constrained applications requiring reliable power-path protection.

Applications

- Server and AUX supplies
- PCI and PCIe cards
- Adapter powered devices
- HDD and SSD

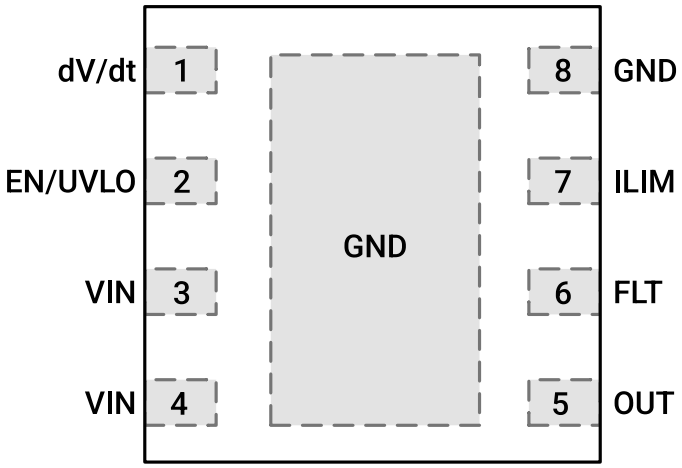
Typical Application Circuit



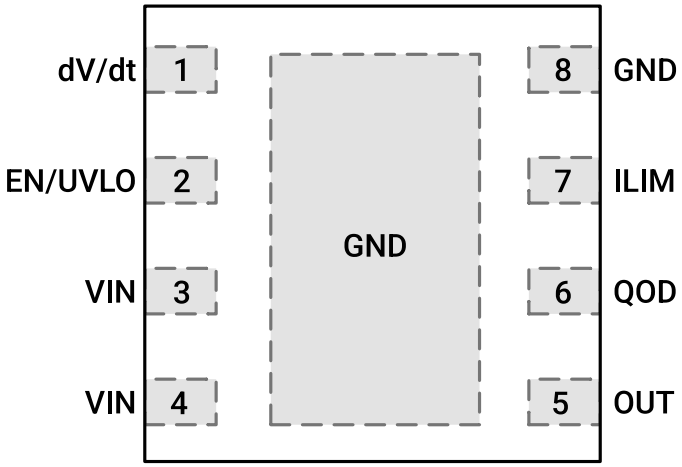
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Package Reference

Top View (RS31211A/B, RS31212A/B, RS31309A/B, RS31311A/B)



Top View (RS31211D, RS31212D)



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Device Comparison Table

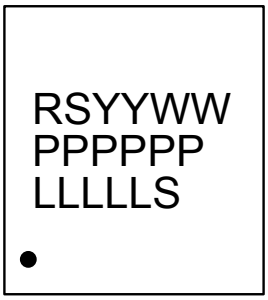
PART NUMBER	OVERVOLTAGE CLAMP (V)	FAULT RESPONSE	QOD (Quick Output Discharge)
RS31211A	3.8	Latch	No
RS31211B	3.8	Auto-retry	No
RS31211D	3.8	Auto-retry	Yes
RS31212A	5.7	Latch	No
RS31212B	5.7	Auto-retry	No
RS31212D	5.7	Auto-retry	Yes
RS31309A	—	Latch	No
RS31309B	—	Auto-retry	No
RS31311A	13.7	Latch	No
RS31311B	13.7	Auto-retry	No

Ordering Information

PART NUMBER	PACKAGE	SIZE (mm)	MSL	SHIPPING METHOD	PACKAGE MARKING
RS31211AR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	211A
RS31211BR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	211B
RS31211DR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	211D
RS31212AR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	212A
RS31212BR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	212B
RS31212DR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	212D
RS31309AR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	309A
RS31309BR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	309B
RS31311AR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	311A
RS31309BR	WSON-8	2 × 2	Level-2	3000u Tape & Reel	311B

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Top Marking



Line 1

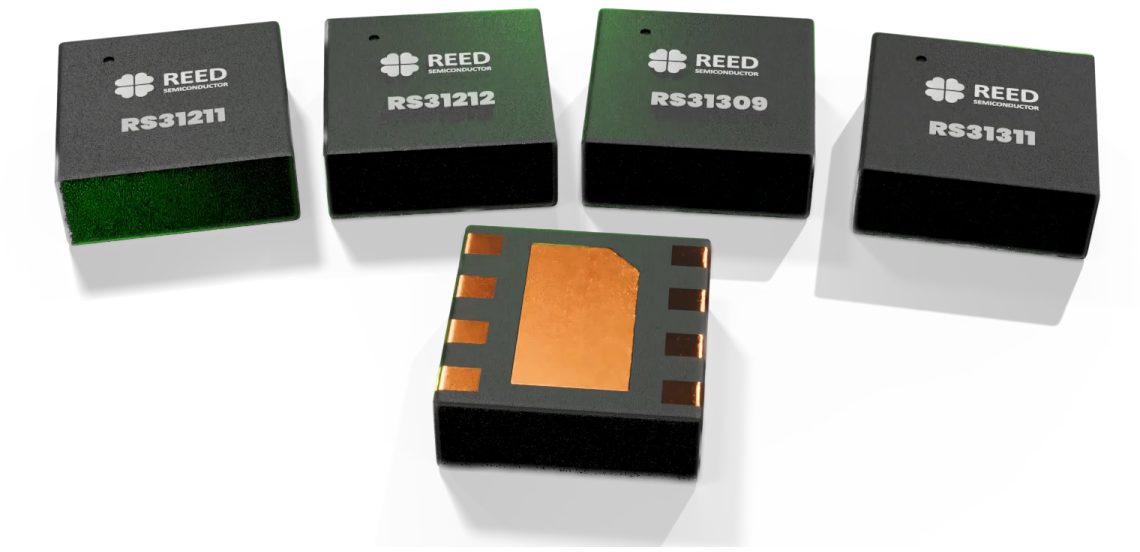
- RS: Prefix of Reed Semiconductor (RS replaced by RE for engineering lot)
- YY: Year code
- WW: Week code

Line 2

- PPPPPP; Truncated part number

Line 3

- LLLLL: Lot code
- S: Assembly site code



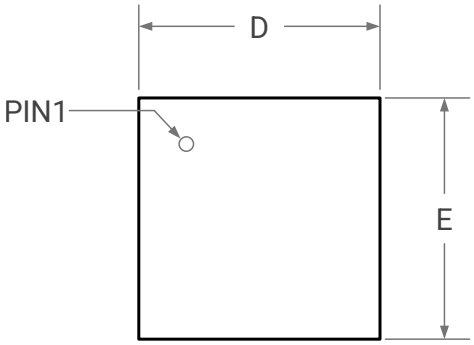
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Pin Descriptions

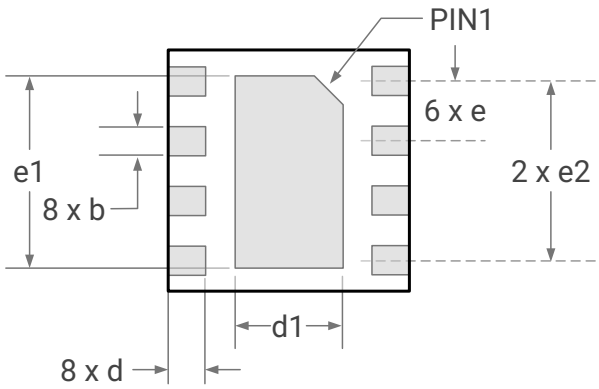
PIN	NAME	TYPE	DESCRIPTION
1	dV/dt	I	Connect a capacitor to GND to program the output slew rate and limit inrush current during startup.
2	EN/UVLO	I	Logic enable input and programmable input UVLO threshold. Connect to a resistor divider from VIN to GND to set the UVLO threshold.
3 - 4	VIN	P	Input supply voltage.
5	OUT	O	Protected output voltage.
6	FLT	O	**FLT (RS31211A/B, RS31212A/B, RS31309A/B, RS31311A/B)** Open-drain fault indicator output. The pin is pulled low during a fault condition. Connect to the desired logic supply through an external pull-up resistor.
	QOD	O	**QOD (RS31211D and RS31212D)** Quick output discharge (QOD) pin. Connect directly to OUT or through an external resistor to enable controlled output discharge.
7	ILIM	I	Connect a resistor to GND to program the current limit.
8	GND	G	Device ground and exposed thermal pad connection.

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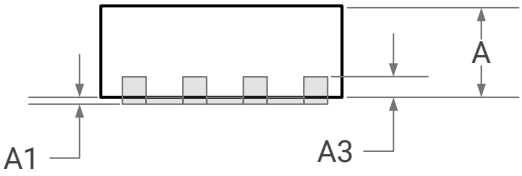
PACKAGE DIMENSIONS



TOP VIEW



BOTTOM VIEW



SIDE VIEW

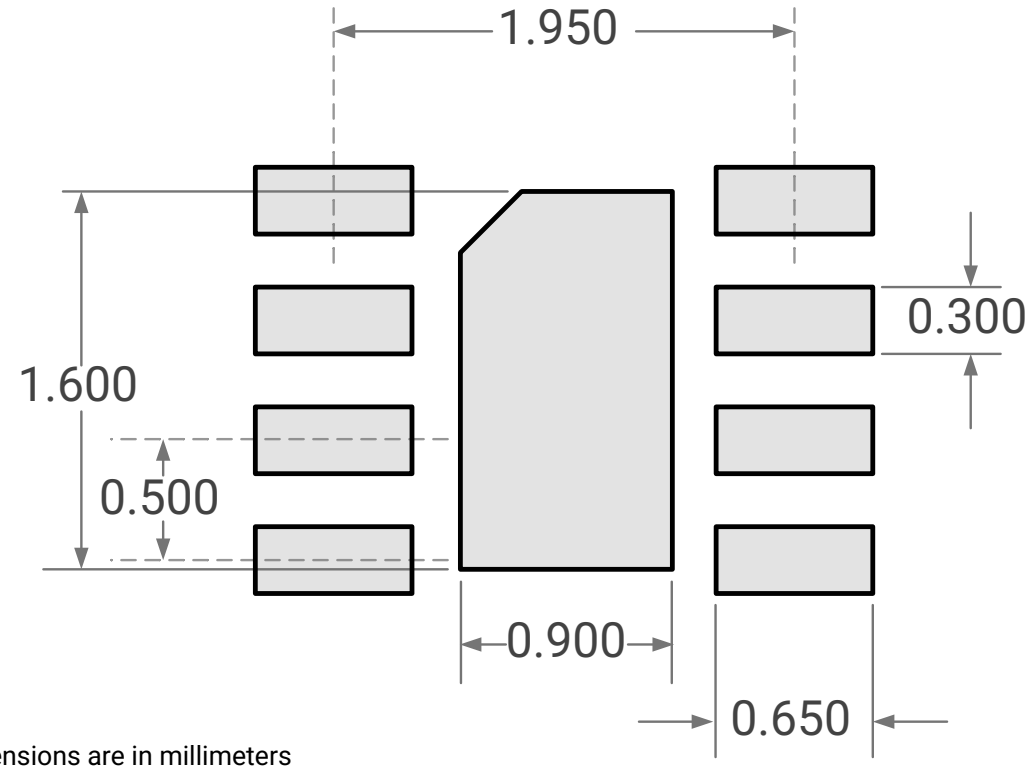
REF	MIN	NOM	MAX
A	—	0.75	0.800
A1	—	—	0.005
A3		0.203 Ref.	
D	1.90	2.00	2.10
E	1.90	2.00	2.10
d1	0.80	0.90	1.00
e1	1.50	1.60	1.70
e		0.50 BSC	
d		0.30 BSC	
b		0.25 Ref.	
e2		1.50 Ref.	

Notes

1. All dimensions are in millimeters.
2. Lead coplanarity shall be 0.1 millimeter max.
3. Drawing is not to scale.

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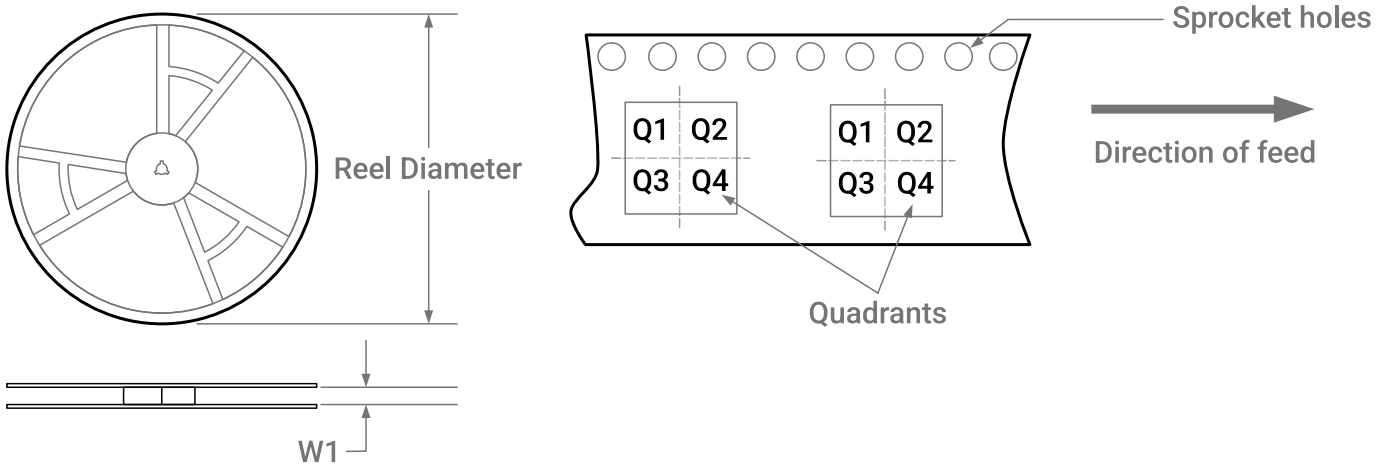
RECOMMENDED LAND PATTERN

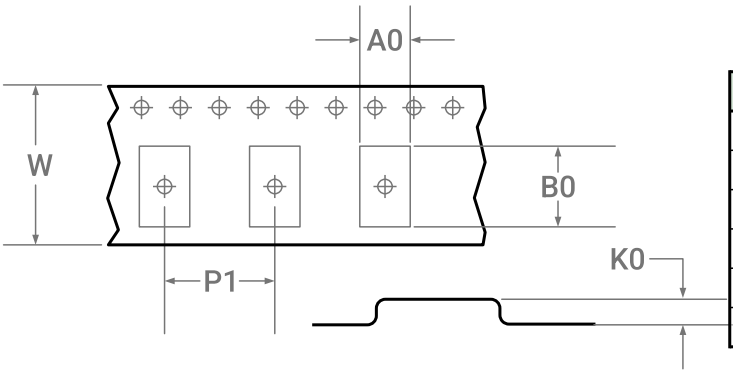


Note: All dimensions are in millimeters

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TAPE AND REEL INFORMATION





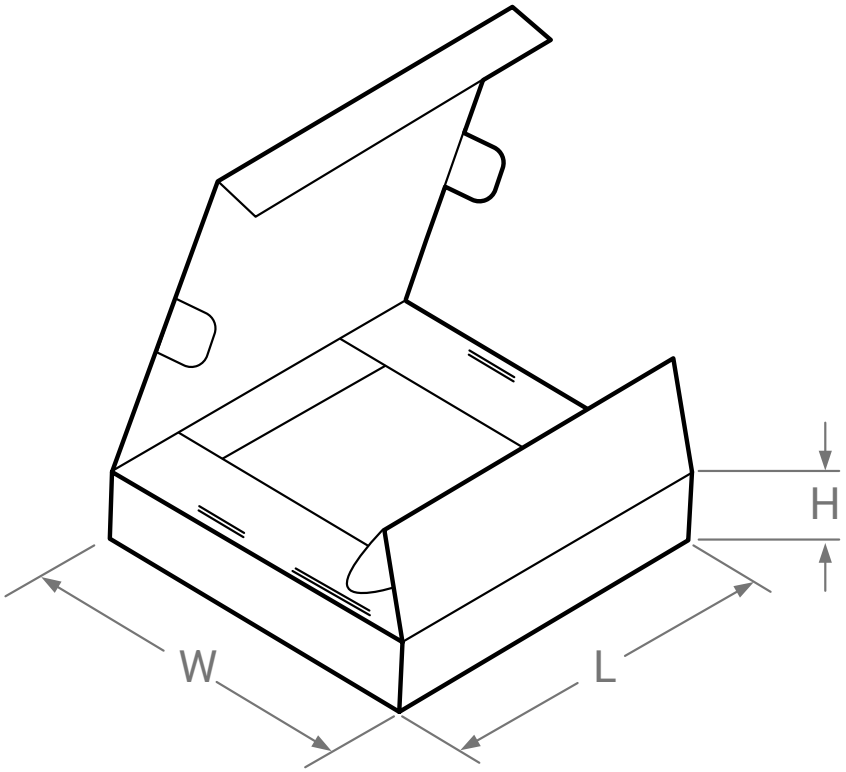
DIMENSION	DESCRIPTION
A0	Pocket width
B0	Pocket length
K0	Pocket depth
W1	Reel width
W	Carrier tape width
P1	Pocket pitch

DEVICE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUAD
2 × 2	178	9.5	2.2	2.2	1.1	4.0	8.0	Q2

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

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PIZZA BOX DIMENSIONS



DEVICE DIM (mm)	**UNITS / BOX**	**L (mm)**	**W (mm)**	**H (mm)**
2 × 2	3000	205	200	25

Note: All measurements are nominal

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