RS31211 RS31212 RS31309 RS31311 Simple 3.3V/5V/12V 4A eFuse Protection Switches

Features

- RS31211 - 3.3V eFuse
- RS31212 - 5V eFuse
- RS31309 – 2.97V to 18V input
- RS31311 - 12V eFuse
- Integrated 34mΩ Pass MOSFET
- Adjustable 0.5A to 4A current limit
- Adjustable output slew rate
- Enable with adjustable input UVLO threshold
- Fixed over-voltage camp: 3.8V for RS31211, 5.7V for RS31212 and 13.7V for RS31311
- Built-on over temperature protection
- Small 2x2mm WSON package
- RoHS compliant and Green

Applications

- Hot-swap, hot-plug
- PCI and PCIe cards
- Adapter powered devices
- HDD and SSD drivers

Description

The RS31211/212/309/311 devices are active circuit protection devices with an integrated MOSFET used to limit current and voltage to safe levels during fault conditions.

The current limit level can be set with a resistor between ILM and ground, and the typical current limit accuracy is ±7.5%.

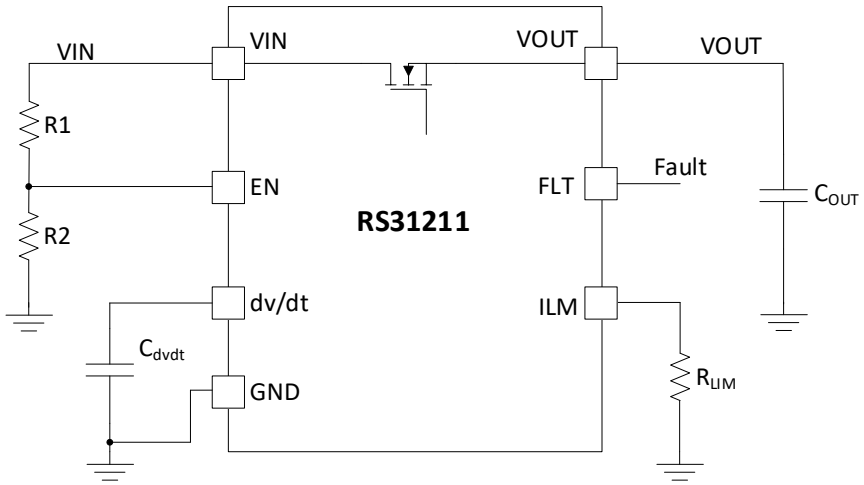
The device has over voltage protection feature which limits the output voltage to a fixed level when over voltage fault occurs.

To limit the inrush current during device turn-on, the rising slew rate of output voltage can be set by a capacitor between dVdt and ground.

The device also offers EN on/off control and input UVLO features.

The device is available in WSON 8 pins, 2x2 mm package.

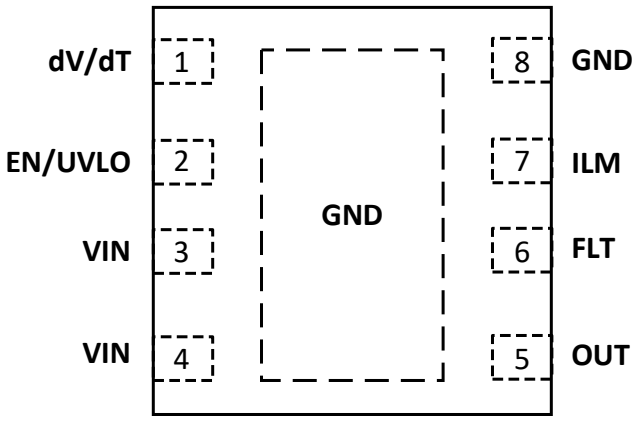
Typical Application Circuit



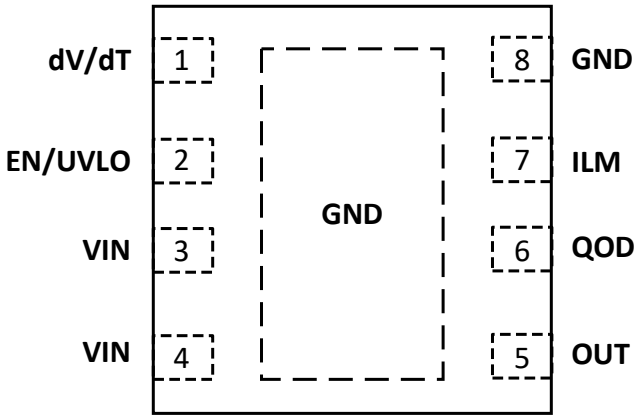
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Package Reference

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



Top View (RS31211D, RS31212D)



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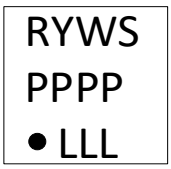
Device Comparison Table

Part Number	Output OV	Protection	Enable	QOD (Quick output Discharge)
RS31211A	3.8V	Latch	Active high	No
RS31211B	3.8V	Auto retry	Active high	No
RS31211D	3.8V	Auto retry	Active high	Yes
RS31212A	5.7V	Latch	Active high	No
RS31212B	5.7V	Auto retry	Active high	No
RS31212D	5.7V	Auto retry	Active high	Yes
RS31309A	No OV	Latch	Active high	No
RS31309B	No OV	Auto retry	Active high	No
RS31311A	13.7V	Latch	Active high	No
RS31311B	13.7V	Auto retry	Active high	No

Order Information

Part Number	Package	Size	MSL	Shipping Method	Package Marking
RS31211AR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	211A
RS31211BR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	211B
RS31211DR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	211D
RS31212AR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	212A
RS31212BR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	212B
RS31212DR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	212D
RS31309AR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	309A
RS31309BR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	309B
RS31311AR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	311A
RS31311BR	WSON-8	2x2 mm	Level-2	3000u Tape & Reel	311B

Top Marking



Line 1

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

Line 2

- PPPP: Truncated part number. Example: 311A represents the full part number RS31311A

Line 3

- LLL: Lot code

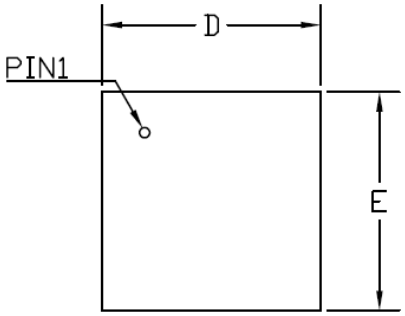
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Pin Description

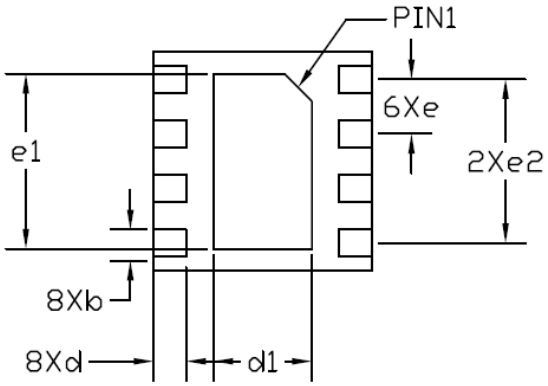
No.	NAME	TYPE	Description
1	dVdt	O	Connect a capacitor from this pin to GND to set output voltage rising slew rate during turn-on
2	EN/UVLO	I	Active high enable. Pull high to enable the device, and pull low to disable the device. Connect the pin to a resistor divider from Vin to GND to set input UVLO threshold. Do not leave the pin floating.
3, 4	VIN	I	Input supply voltage
5	OUT	O	Output of the device
6	FLT	O	**RS31211A/B, RS31212A/B, RS31309A/B, RS31311A/B**: Open drain pin. Fault event indicator. Connect the pin to external voltage through pull-up resistor.
	QOD	O	**RS31211D and RS31212D**: Quick output discharge pin. Tie QOD pin to output directly or through external resistor
7	ILM	O	Dual function pin to limit and monitor the output current. An external resistor from the pin to GND sets the output current limit. The pin voltage can be used to monitor the output current. Do not leave floating.
8	GND	G	The GND pad is used as device ground as well as thermal pad to dissipate heat.

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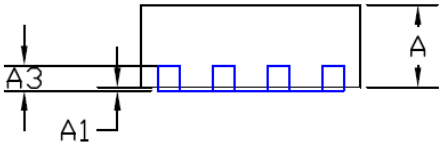
PACKAGE DIMENSION



TOP VIEW



BOTTOM VIEW



SIDE VIEW

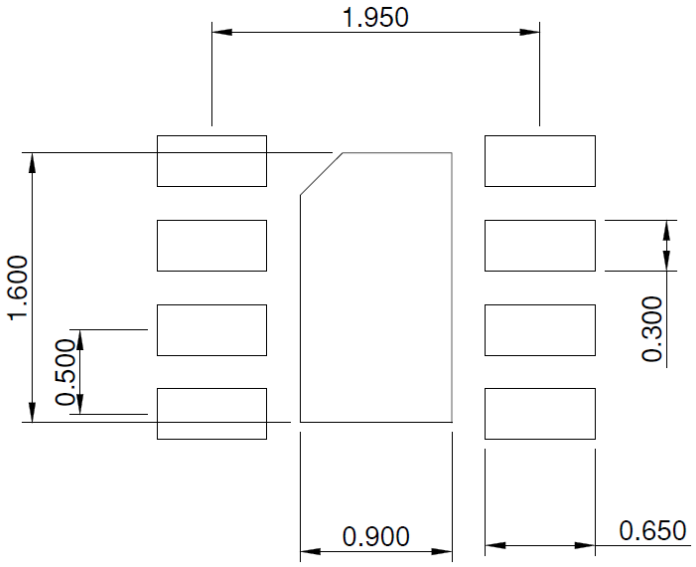
REF	MIN	NOM	MAX
A		0.750	0.800
A1			0.005
A3		0.203 REF	
D	1.900	2.000	2.100
E	1.900	2.000	2.100
d1	0.800	0.900	1.000
e1	1.500	1.600	1.700
e		0.500 BSC	
d		0.300 BSC	
b		0.250 REF	
e2		1.500 REF	

NOTE:

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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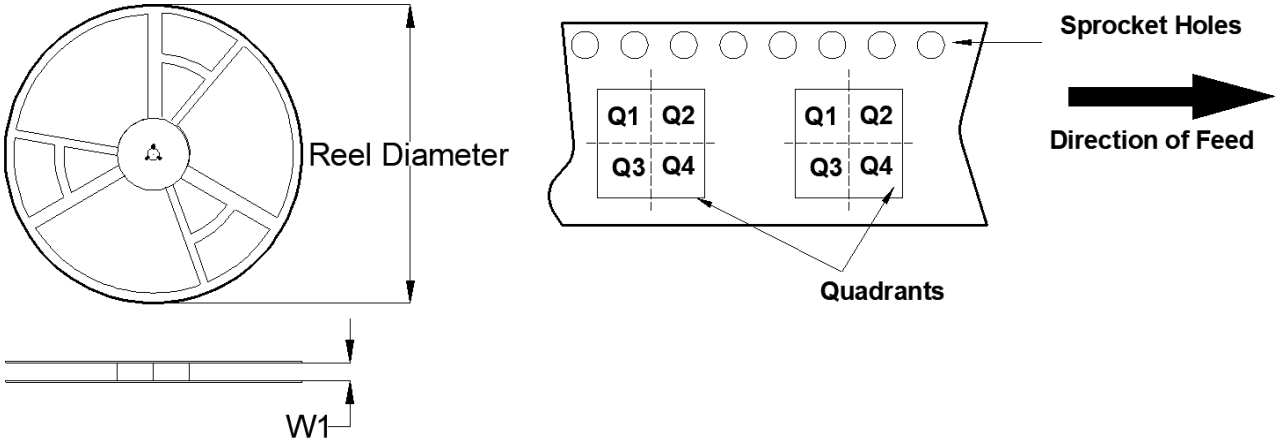
RECOMMENDED LAND PATTERN

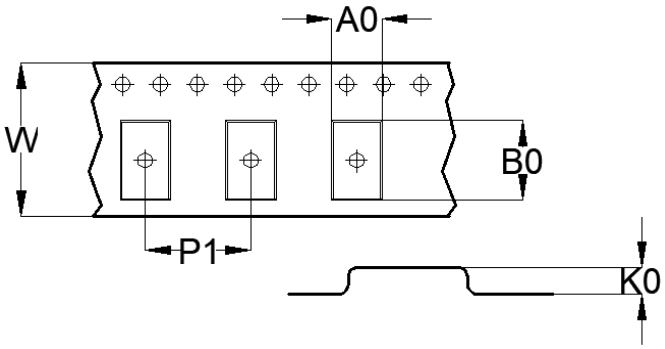


Note: All the data is nominal

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TAPE AND REEL INFORMATION





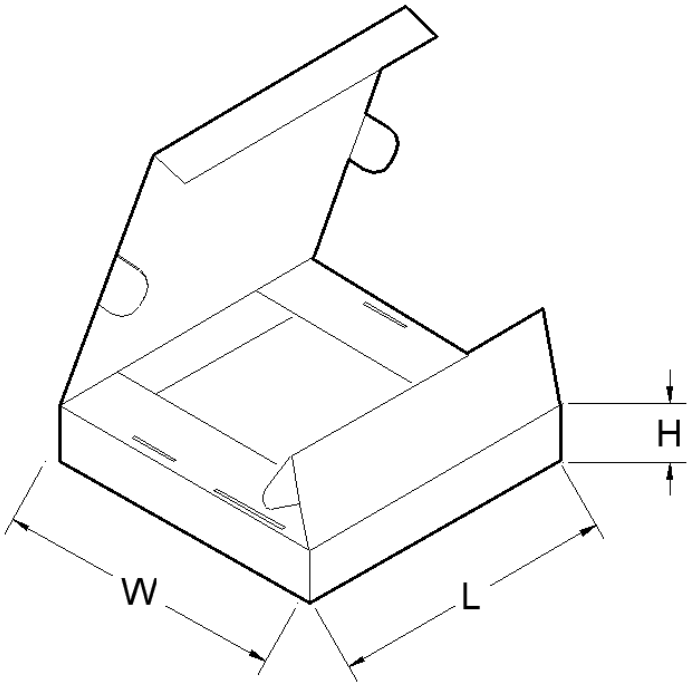
A0	Pocket width
B0	Pocket length
K0	Pocket thickness
W1	Reel Width
W	Inner width of the carrier tape
P1	Pitch between pocket centers

PKG type (mm)	Reel Diameter (mm)	Reel Width W1(mm)	A0(mm)	B0(mm)	K0(mm)	P1(mm)	W(mm)	Quad
2x2	178	9.5	2.2	2.2	1.1	4.0	8.0	Q2

Note: All the data is nominal

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PIZZA BOX DIMENSION



PKG type (mm)	Units/box	Length(mm)	Width(mm)	Height(mm)
2x2	3000	205	200	25

Note: All the data is nominal

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RS31211DR RS31212BR RS31212DR RS31309AR RS31311AR RS31312R RS31313AR RS31331B RS31210BR RS31211BR RS31310BR RS53328HR RS31211AR RS31212AR RS31309BR RS31317AR RS53317HR