

RS31215 – 3.3V, 15A, 2.7mΩ eFuse with Current Monitoring

Features

Power Path & Current Capability

- Integrated 2.7mΩ pass MOSFET
- Adjustable 2A to 15A current limit
- Fast short-circuit protection: <400ns typical
- Adjustable output slew rate

Overcurrent Protection & Fault Response

- Adjustable overcurrent blanking timer for load transients
- Configurable fault response:
 - Latch-off or auto-retry
 - Programmable number of retries
 - Programmable delay between retries

Voltage & Thermal Protection

- Adjustable input undervoltage lockout (UVLO)
- Fixed 3.7V input overvoltage protection
- Integrated overtemperature protection

Monitoring & Control

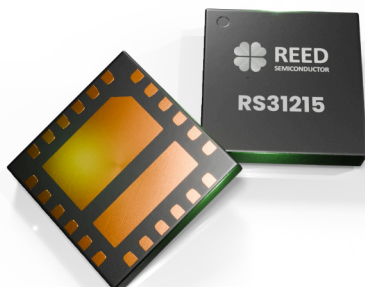
- Accurate current monitoring
- Adjustable load-detect and handshake timer
- Enable (EN) control
- Downstream load-start handshake and timeout protection

Package & Compliance

- 4mm × 4mm LGA-26 package
- RoHS compliant and Green

Applications

- Server and Auxiliary Power Supplies
- PCIe and Add-In Cards
- Networking and Telecom Equipment
- Optical Modules and Transceivers
- Hot-Swap and Power-Path Protection
- Low-Voltage High-Current Power Rails



Description

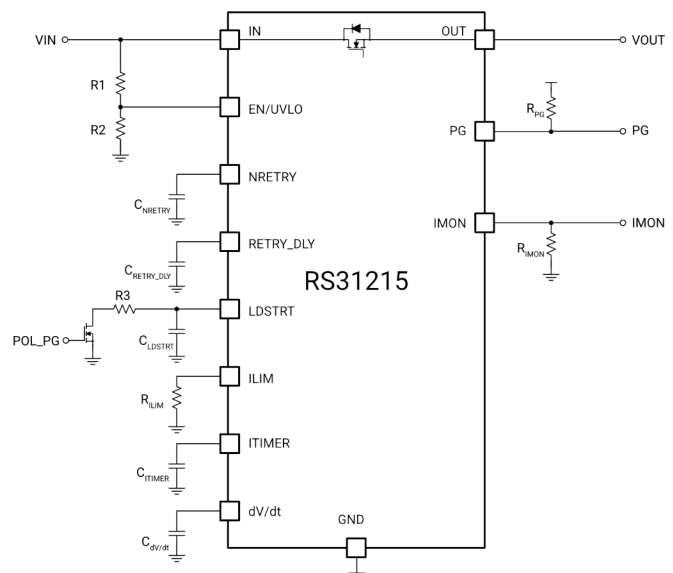
The RS31215 is a highly integrated 3.3V, 15A eFuse designed for power-path and hot-swap protection in low-voltage, high-current applications. An integrated 2.7mΩ pass MOSFET, adjustable 2A to 15A current limit, and fast <400ns typical short-circuit response provide low-loss operation and robust fault protection.

Optimized for 3.3V power rails, the RS31215 integrates fixed 3.7V input overvoltage protection, adjustable UVLO, overtemperature protection, programmable output slew rate, and configurable latch-off or auto-retry fault response.

An accurate current-monitor output supports system monitoring, while the LDSTRT load-start timer provides a downstream readiness handshake after PG asserts, disabling the pass FET if the load does not respond within the programmed time. The RS31215 is well suited for servers, PCIe and add-in cards, networking equipment, and protected 3.3V rails supplying downstream point-of-load (PoL) converters

PART NUMBER	PACKAGE	OVERCURRENT RESPONSE
RS31215A	LGA-26	Current Limiter
RS31215B	LGA-26	Circuit Breaker

Typical Application Schematic



Ordering Information

PART NUMBER	PACKAGE	SIZE	MSL RATING	SHIPPING METHOD	PACKAGE MARKING
RS18G32R	QFN-60	7 × 7mm	Level-3	3000u Tape & Reel	R18G32

Top Marking

Line 1

- RS: Prefix of Reed Semiconductor (R is replaced by E for engineering lots)
- YY: Year code
- WW: Week code

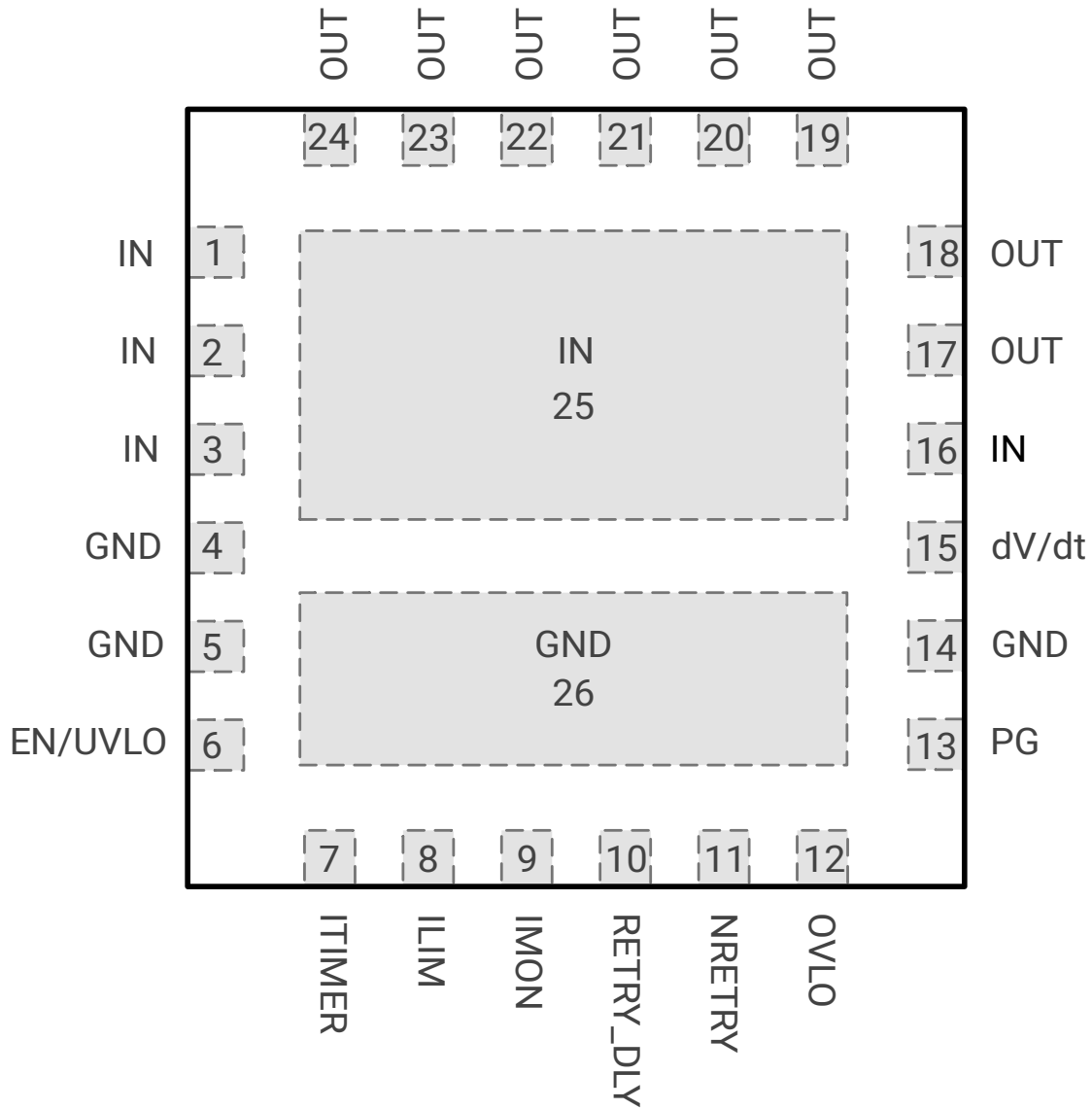
Line 2

- PPPPP: Truncated part number

Line 3

- LLLLL: Lot code
- S: Assembly site code

Package Reference



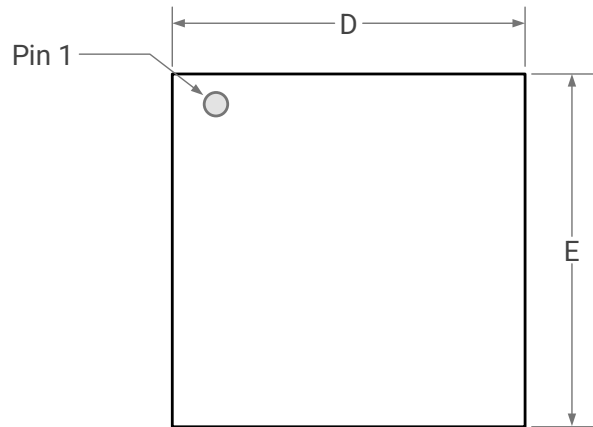
LGA-26 (4 × 4mm)

Pin Descriptions

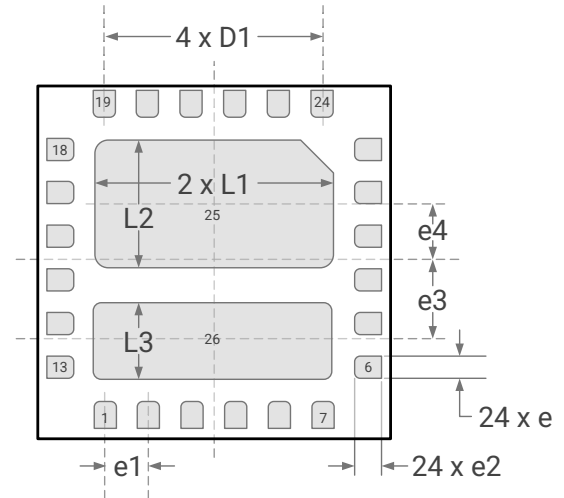
PIN	NAME	TYPE	DESCRIPTION
1–3, 16, 25	IN	P	Power input. Connect the IN pins and thermal pad 1 to the input power plane. Use multiple vias for heat dissipation.
4, 5, 14, 26	GND	P	Device ground. Connect the GND pins and thermal pad 2 to the system ground plane. Use multiple vias for heat dissipation.
6	EN/UVLO	I	Enable and undervoltage lockout programming. Pull high to enable the device and low to disable it. Connect a resistor divider from VIN to GND to set the input UVLO threshold. Do not leave floating.
7	ITIMER	I	Overcurrent blanking timer. Connect a capacitor from this pin to GND to set the interval during which the output current may temporarily exceed the current-limit threshold. Leave open for the fastest overcurrent response.
8	ILIM	I	Current-limit programming. Connect a resistor from this pin to GND to set the current-limit and fast-trip thresholds. Do not leave floating.
9	IMON	O	Output-current monitor. Sources a current proportional to the load current. Connect a resistor from this pin to GND to convert the monitor current to a voltage.
10	RETRY_DLY	I	Fault retry delay. Connect a capacitor from this pin to GND to set the delay between fault shutdown and restart. Connect to GND for latch-off operation.
11	NRETRY	I	Fault retry count. Connect a capacitor from this pin to GND to set the number of restart attempts following a fault shutdown. Connect to GND for unlimited retry attempts.
12	LDSTRT	I	Load-detect and handshake input. Connect a capacitor from this pin to GND to set the interval following PG assertion during which LDSTRT must be pulled low to keep the device enabled. Connect to GND when the load-detect and handshake function is not used. Do not leave floating.
13	PG	O	Power-good output. Open-drain output that indicates output power status.
14	dV/dt	I	Output-voltage slew-rate programming. Connect a capacitor from this pin to GND to set the output-voltage rise time during turn-on.
17–24	OUT	P	Power output. Connect the OUT pins to the load using a wide copper plane.

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

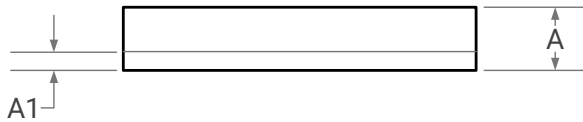
Package Dimensions



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Notes

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

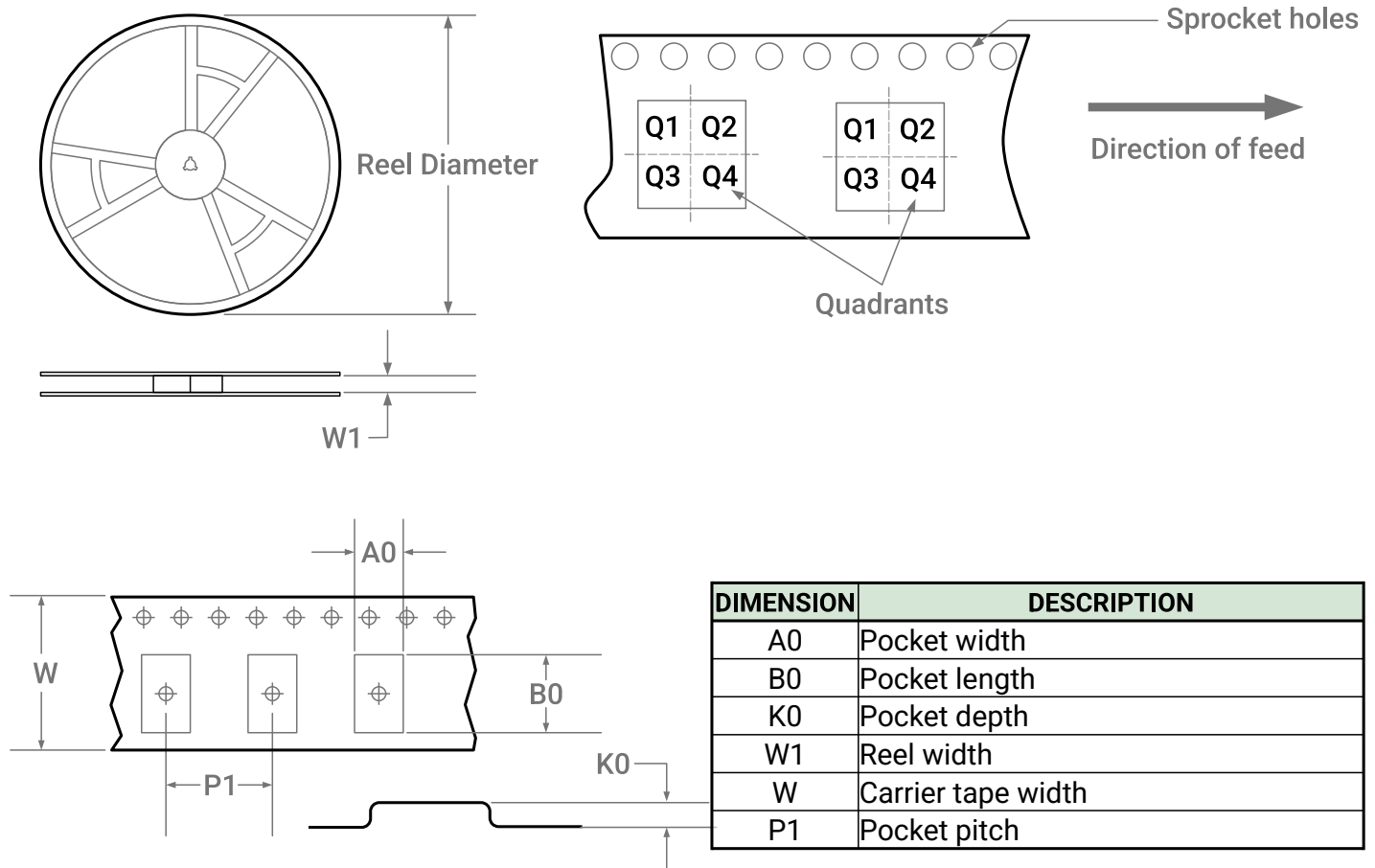
REF	MIN	NOM	MAX
A	0.80	0.90	1.00
A1	0.400 BSC		
D	3.90	4.00	4.10
E	3.90	4.00	4.10
D1	2.40	2.50	2.60
e	0.19	0.24	0.29
e1	0.50 BSC		
e2	0.275 BSC		
e3	0.925 BSC		
e4	0.625 BSC		
L1	2.60	2.70	2.80
L2	1.35	1.45	1.55
L3	0.84	0.85	0.86
L4	0.10 BSC		

Fig. 1

Fig. 2

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

Tape and Reel Information

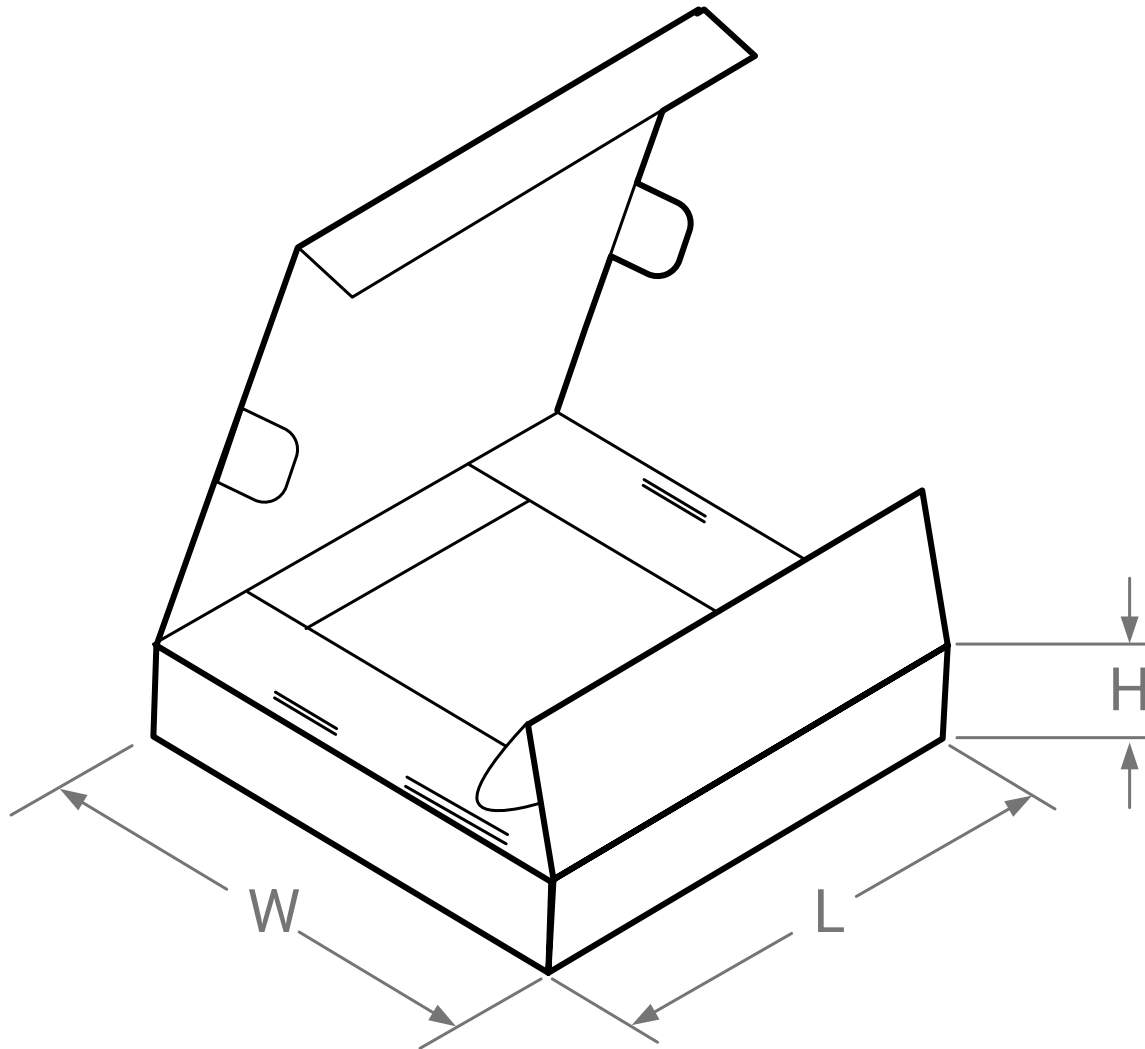


PACKAGE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUADRANT
4 × 4	330	12.4	4.2	4.2	1.1	8	12	Q2

Note:

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

Pizza Box Dimensions



PACKAGE SIZE	UNITS / BOX	LENGTH	WIDTH	HEIGHT
4 × 4	5000	358	341	50

Notes:

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