

RS31389 Stackable 16V, 80A eFuse with Current Monitoring

Features

Protection

- Wide input voltage range: 4.5 V to 16 V
- Adjustable current limit during startup and steady-state
- Adjustable short-circuit current limit
- Fast-trip short-circuit protection
- Input-to-output short-circuit detection
- Latch-off or auto-retry protection response

Current Monitoring & Control

- Integrated 0.6 mΩ pass MOSFET
- Accurate current monitor output
- Adjustable output soft-start time
- Fault indication and Power Good indication

Scalability

- Supports 60 A continuous and 80 A peak current
- Parallel operation for higher-current application
 - Compatible with the [RS31390](#) leader device for PMBus Telemetry

Status & Diagnostics

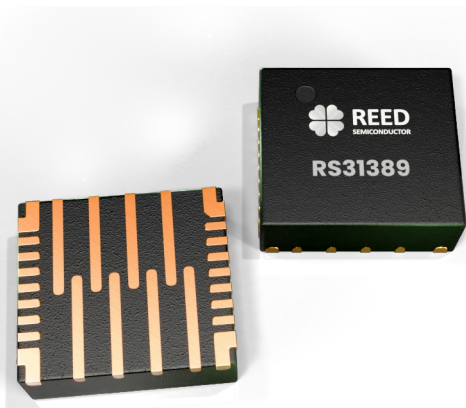
- Fault indication and Power-Good reporting

Compliance & Package

- ROHS compliant
- 4.5mm × 5mm QFN package

Applications

- Graphics and accelerator cards
- Servers and high-performance computing
- Networking cards



Description

The RS31389 is an integrated eFuse and hot-swap protection device designed to safely limit current and voltage during fault conditions. An integrated 0.6 mΩ power MOSFET minimizes power loss while providing fast and reliable circuit protection.

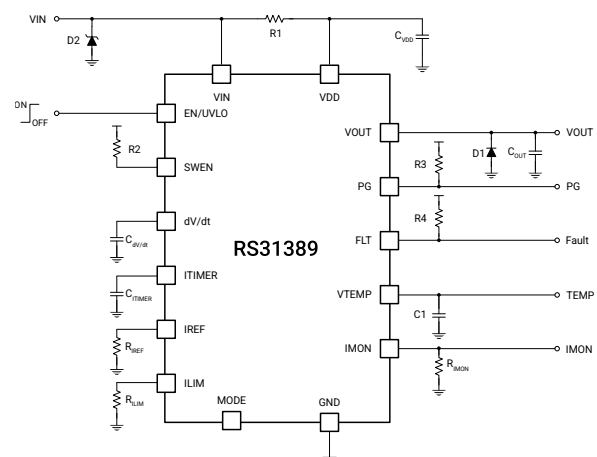
The device features independently programmable current limits for startup and steady-state operation, adjustable output slew rate, accurate load current monitoring, and configurable fault response with either latch-off or automatic retry operation. Comprehensive protection includes overcurrent, short-circuit, input-to-output short-circuit, and fault indication functions for robust system operation.

Multiple RS31389 devices can be connected in parallel to support higher-current applications while maintaining current sharing and system protection. For intelligent power management, the RS31389 is compatible with the [RS31390](#) leader device, enabling centralized PMBus telemetry and digital monitoring for parallel power systems.

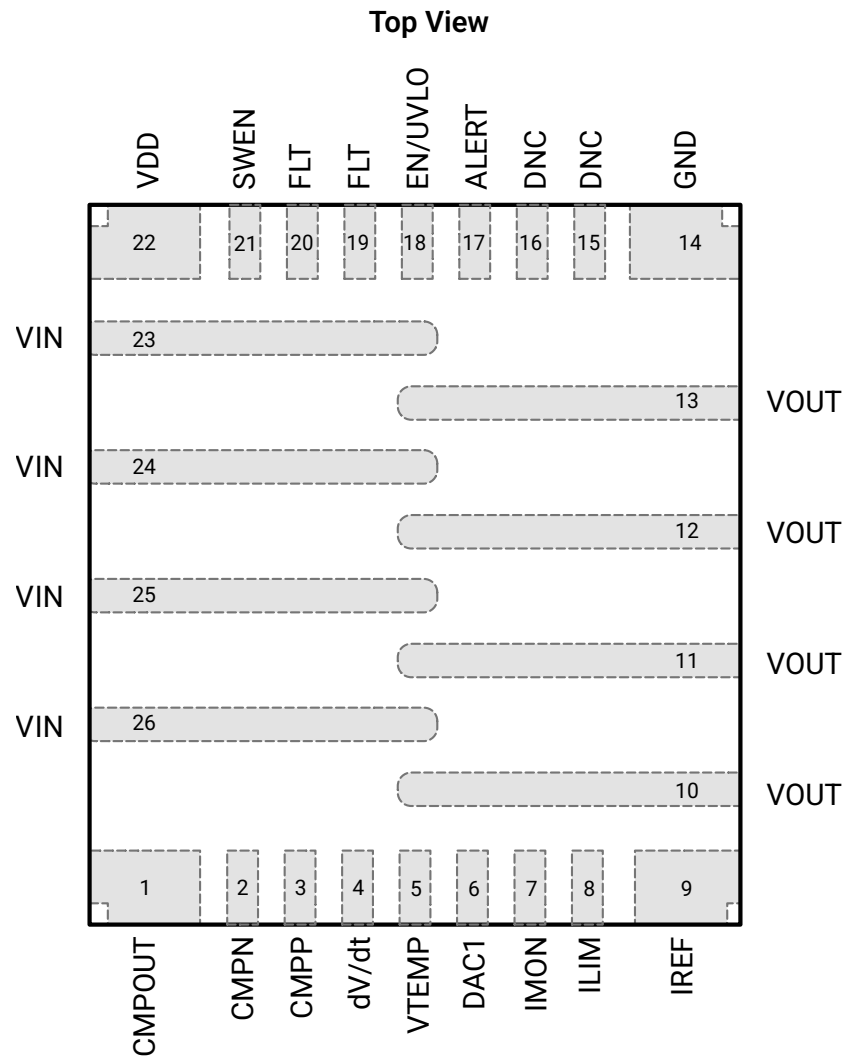
The RS31389 is available in a compact 26-pin 4.5 mm × 5.0 mm QFN package and is compliant with RoHS environmental requirements.

PART NUMBER	PACKAGE	BODY SIZE
RS31389	QFN-26	4.5 × 5 mm

Typical Application Circuit



Package Reference

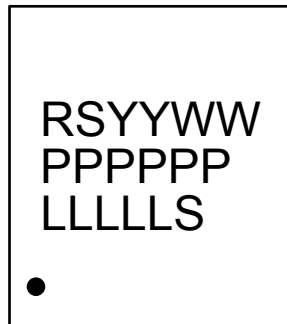


QFN-26 (4.5 × 5mm)

Ordering Information

PART NUMBER	PACKAGE	SIZE	MSL	SHIPPING METHOD	PACKAGE MARKING
RS31389AR	QFN-26	4.5 × 5 mm	Level-1	5ku Tape & Reel	R1389A
RS31389BR	QFN-26	4.5 × 5 mm	Level-1	5ku Tape & Reel	R1389V

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
-

APPLICATION INFORMATION

Application Schematic

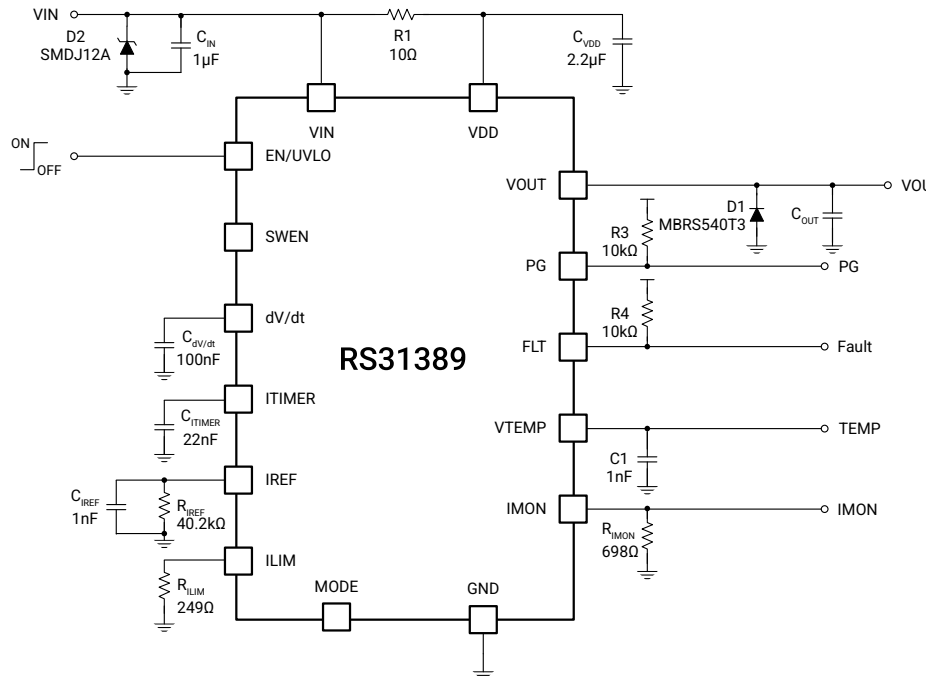


Figure 4. 12V Input, 60A Output, OCP set to 80A

Parallel Application

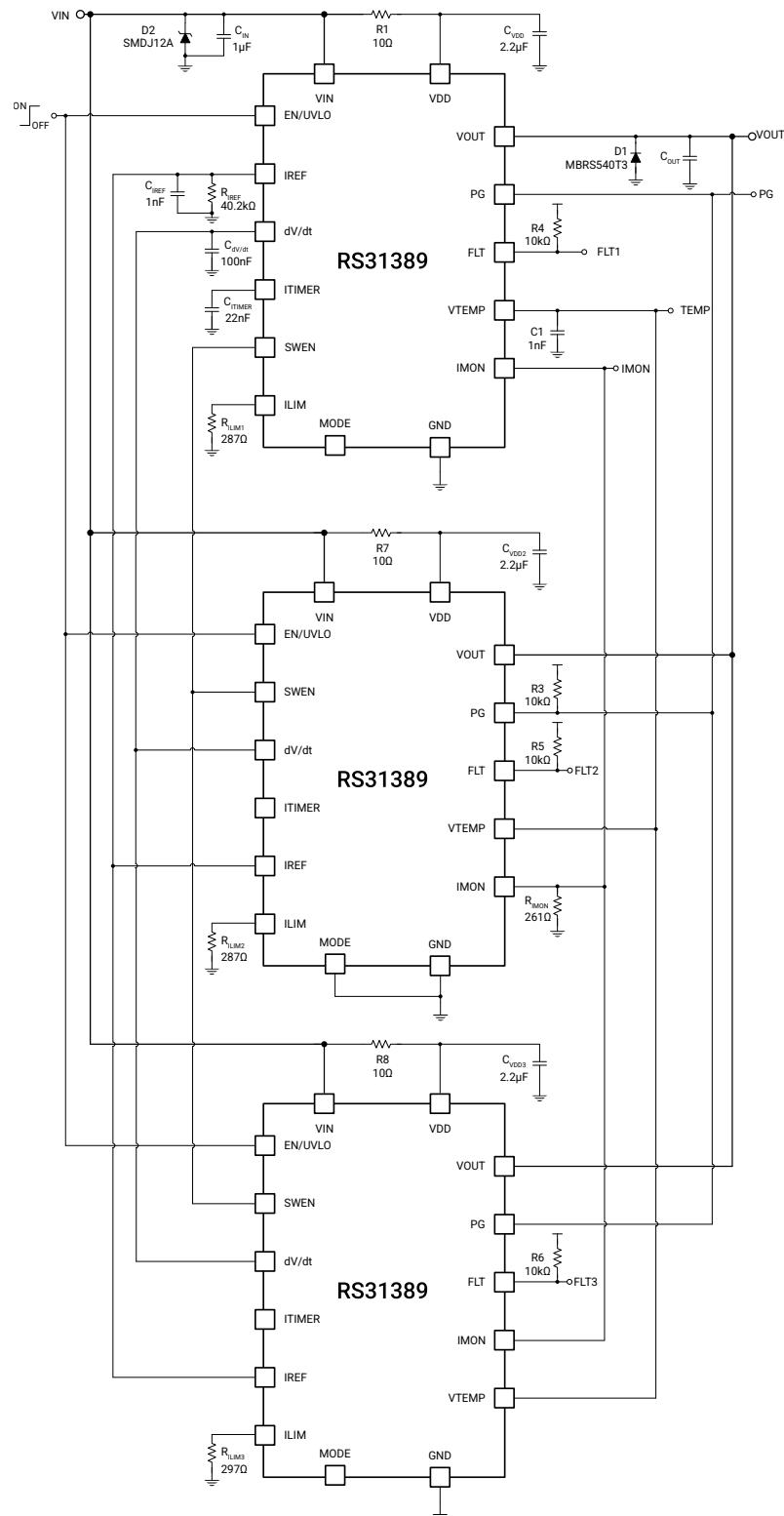
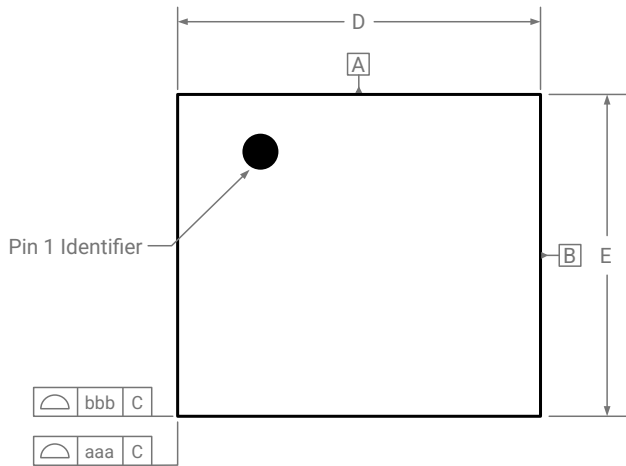
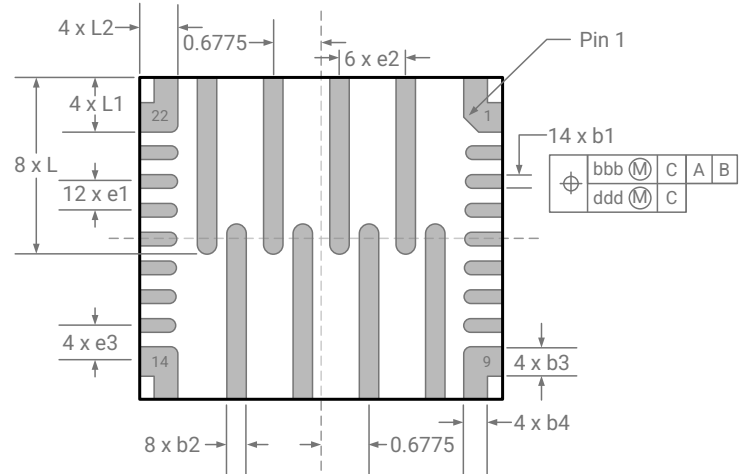


Figure 5. 12V, 180A with OCP set to 210A

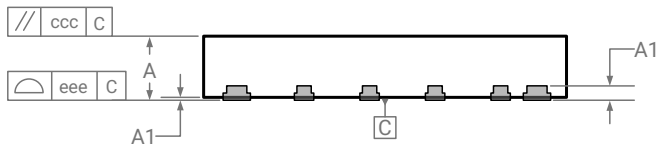
PACKAGE DIMENSIONS



TOP VIEW



BOTTOM VIEW

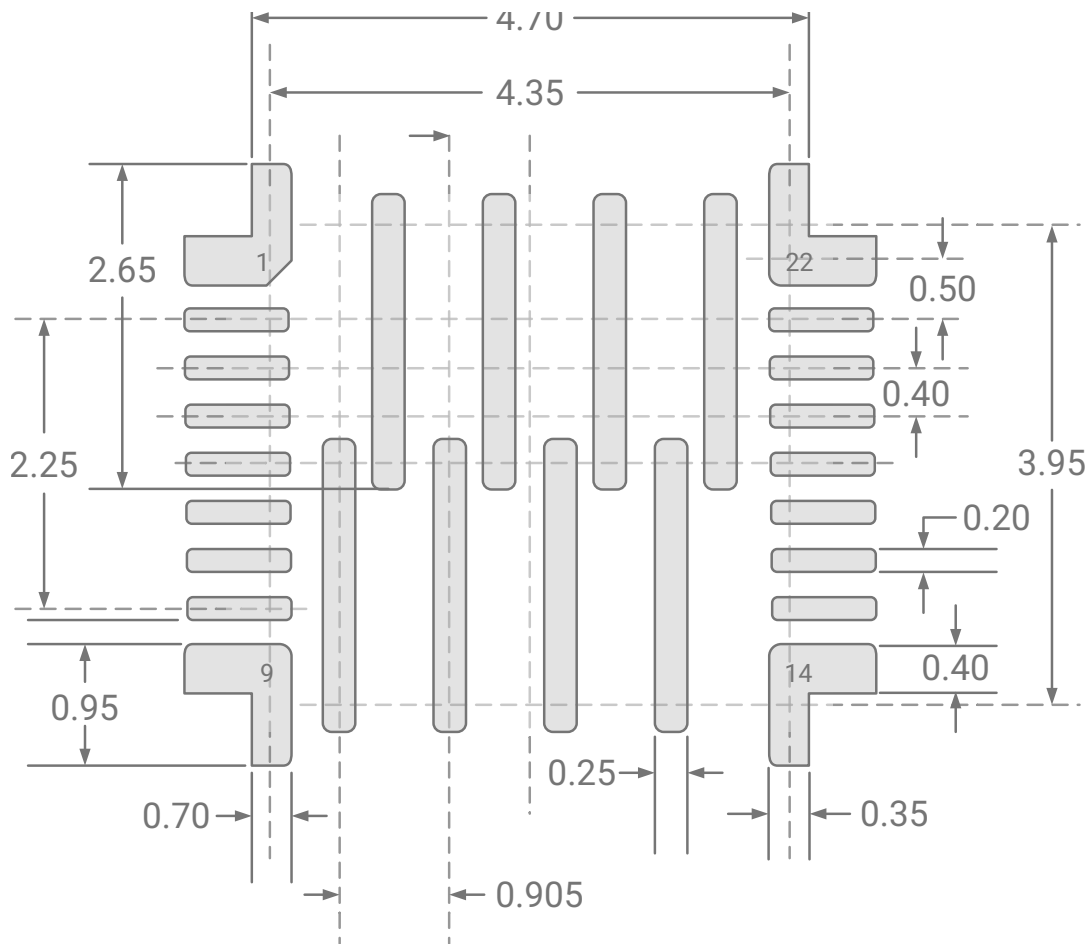


DATUM LEGEND	
A	Top Surface
B	Right Side Surface
C	Bottom Surface (Seating Plane)

NOTE:

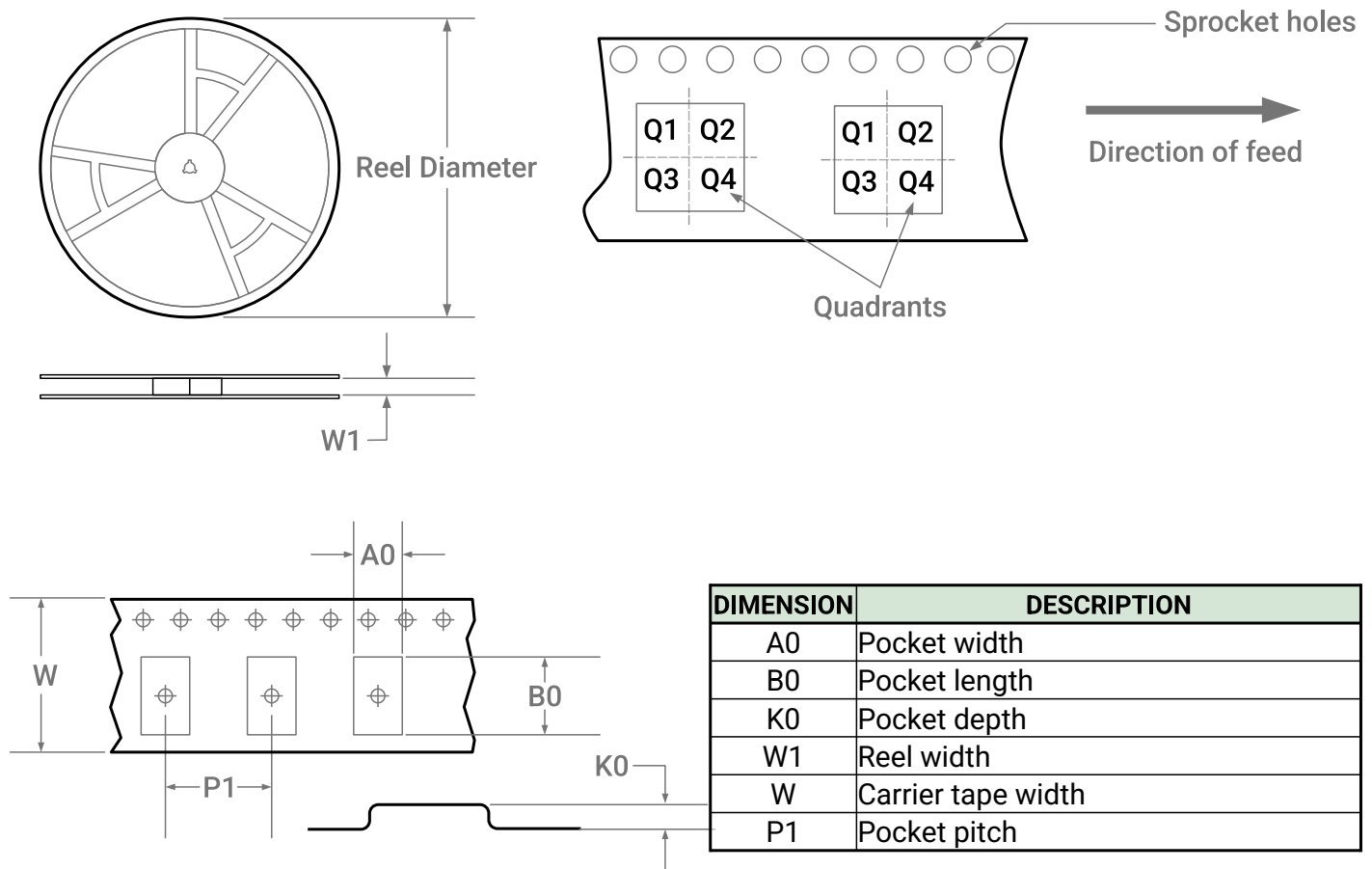
1. All dimensions are in millimeters.
2. Dimension and tolerancing conform to JEDEC MO-220.
3. Drawing is not to scale.

REF	MIN	NOM	MAX
A	0.800	0.850	0.900
A1	—	—	0.050
A3	0.203 Ref.		
D	4.900	5.000	5.100
E	4.400	4.500	4.600
b1	0.150	0.200	0.250
b2	0.200	0.250	0.300
b3	0.350	0.400	0.450
b4	0.300	0.350	0.400
e1	0.400 BSC		
e2	0.905 BSC		
e3	0.500 BSC		
L	2.35	2.45	2.55
L1	0.65	0.75	0.85
L2	0.40	0.50	0.60
Geometric Dimensioning & Tolerancing			
aaa	0.10		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		

RECOMMENDED LAND PATTERN

NOTES:

1. Pins 1, 9, 14, and 22 have identical land patterns.
2. Pins 10-13 and 23-26 have identical land pattern dimensions.
3. All dimensions are in millimeters.
4. Maximum lead coplanarity: 0.08 mm.
5. Package outline complies with JEDEC MO-303.
6. Drawing is not to scale.

TAPE AND REEL INFORMATION

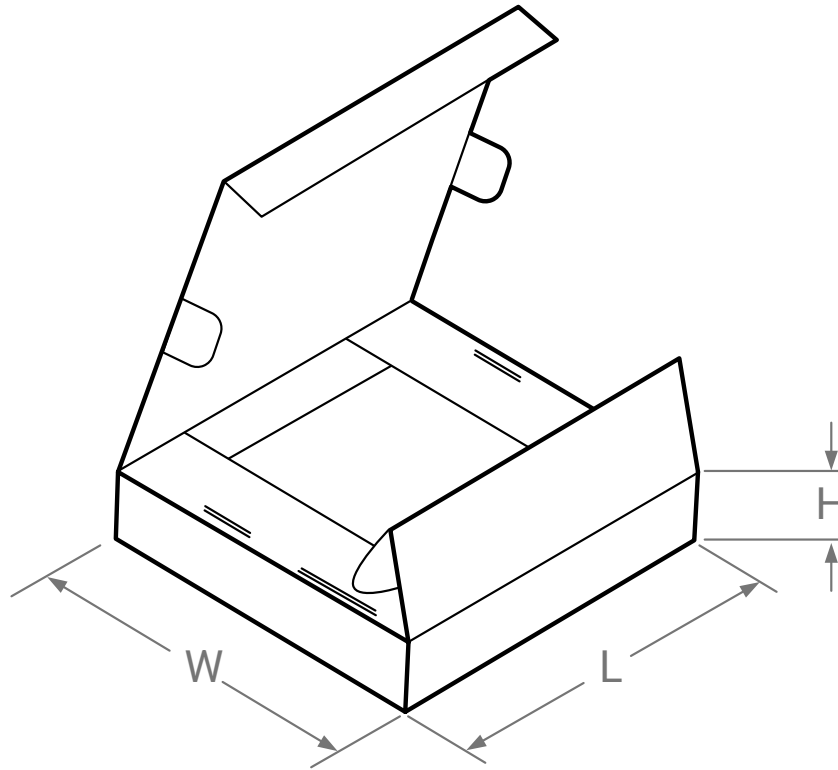


DEVICE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUAD
4.5 × 5	330	12.4	4.8	5.3	1.10	8.0	12.0	Q2

Note:

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

PIZZA BOX DIMENSIONS



DEVICE DIM (mm)	UNITS / BOX	L (mm)	W (mm)	H (mm)
4.5 × 5	5000	354	340	55

Note: All measurements are nominal