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1 Introduction

The ZSSC3018 Sensor Signal Conditioner ICs is available in a RoHS-compliant QFN24 package (4mm x 4mm). This document provides details for package dimensions, pin assignments and layout, footprint, landing pattern, board connections, package marking, and thermal resistance.

2 QFN24 (4x4mm) Package Marking

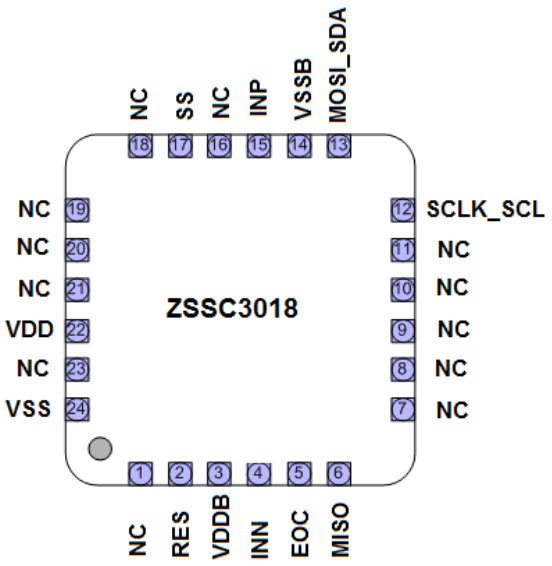
Table 2.1 QFN24 Package Marking

Top Side		Comments
1st Line	3018B	3018B = Product name
2nd Line	YYWW	YY = Year (e.g., 15 for 2015, 16 for 2016, ...); WW = Workweek (e.g., 15)
3rd Line	XXXXX	Last five digits of IDT lot number

3 ZSSC3018 Pin Assignments and Layout

Figure 3.1shows the pin assignments of the QFN24 (4x4mm) package. This pin layout enables implementation of the recommended printed circuit board (PCB) design. See section 5 for specific dimensions.

Figure 3.1 Pin Layout for the ZSSC3018 QFN24 Package (4mm x 4mm)



Note: The underside of the ZSSC3018 package (i.e., the “exposed pad”) is electrically floating.

Table 3.1 ZSSC3018 Pin Assignments PQFN24

Note: In the following table, “n.c.” stands for not connected / no connection required / not bonded.

Pin No.	Name	Direction	Type	Description
1	test1	-	-	Do not connect.
2	RES	In	Digital	ZSSC3018 reset (low active, internal pull-up).
3	VDDB	Out	Analog	Positive external bridge-sensor supply.
4	INN	In	Analog	Negative sensor signal (or sensor ground for absolute voltage-source sensors).
5	EOC	Out	Digital	End of conversion or interrupt output.
6	MISO	Out	Digital	Data output for SPI.
7	test7	-	-	Do not connect.
8	n.c.	-	-	-
9	n.c.	-	-	-
10	n.c.	-	-	-
11	n.c.	-	-	-
12	SCLK_SCL	In	Digital	Clock input for SPI/I²C.
13	MOSI_SDA	In/Out	Digital	Data input for SPI; data in/out for I²C.
14	VSSB	Out	Analog	Negative external bridge-sensor supply (sensor ground).
15	INP	In	Analog	Positive sensor signal.
16	test16	-	-	Do not connect.
17	SS	In	Digital	Slave select for SPI.
18	test18	-	-	Do not connect.
19	test19	-	-	Do not connect.
20	n.c.	-	-	-
21	n.c.	-	-	-
22	VDD	In	Supply	IC positive supply voltage for the ZSSC3018.
23	n.c.	-	-	-
24	VSS	In	Supply	Ground reference voltage signal.
25	Exposed pad	-	-	Do not connect electrically.

4 Thermal Resistance Value for the ZSSC3018 QFN24 Package

The QFN24 (4x4mm) package has a junction-to-ambient θ_{JA} of 31.8 °C/W.

θ_{JA} has been simulated in accordance to following JEDEC-standards:

- Test Board Design as per JESD51-7.
- Natural Convection Test Conditions as per JESD51-2.

Table 4.1 ZSSC3018 Thermal Resistance

Parameter	Symbol	Value	Unit
Thermal Resistance – junction to ambient	θ_{JA}	31.8	°C/W

5 QFN24 (4x4mm) Package Dimensions

Figure 5.1 and Table 5.1 show the package drawing and parameters for the ZSSC3018 QFN24 (4x4mm) package based on JEDEC MO-220. Dimensions are in millimeters.

Figure 5.1 Package Dimensions for the ZSSC3018 QFN24 Package

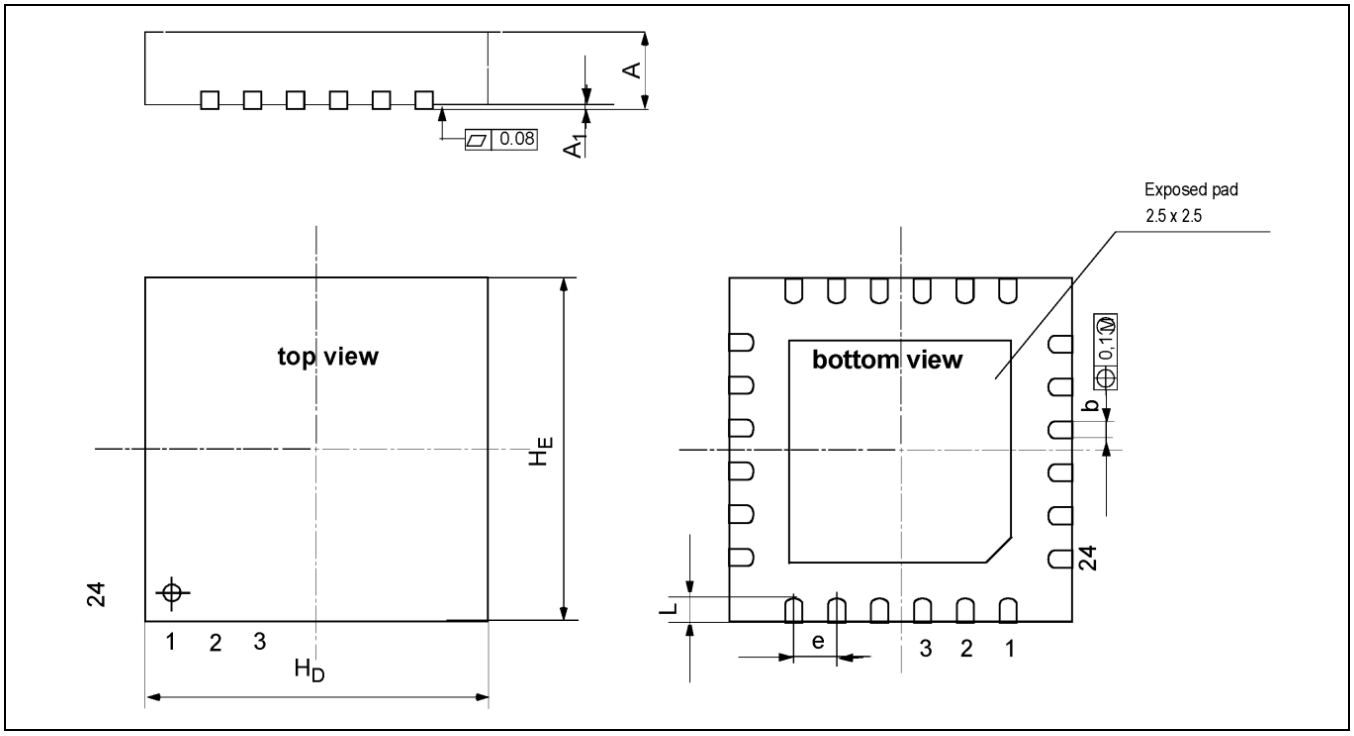


Table 5.1 QFN24 Dimensions (4mm x 4mm)

Dimension Limit	MIN	NOM	MAX
A	0.80		0.90
A_1	0.00		0.05
b	0.20		0.30
e		0.50	
H_D	3.90		4.10
H_E	3.90		4.10
L	0.30		0.50

6 ZSSC3018 Footprint and Landing Pattern

Figure 6.1 illustrates a recommended footprint for PCB designs using the ZSSC3018 QFN24 package.

- The exposed area of the landing pattern is 0.25mm from the unit edge.
- The stencil opening excess is approximately 0.2mm from the landing pattern.

IDT also provides electronic data on its website (www.IDT.com/zssc3018).

Figure 6.1 Recommended Footprint for ZSSC3018 QFN24 Package

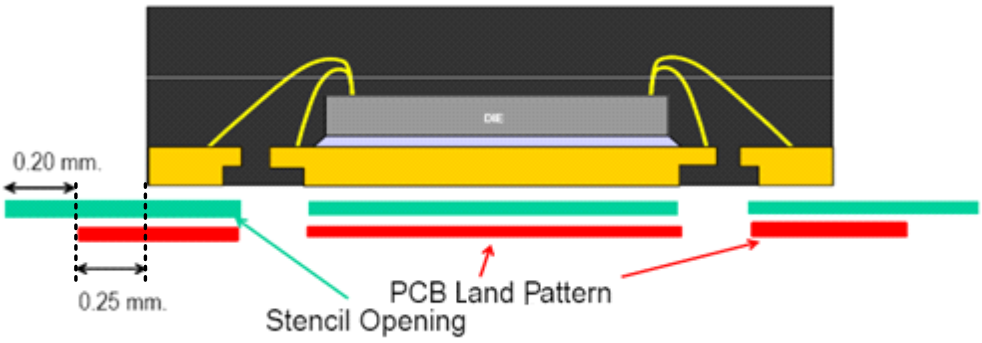
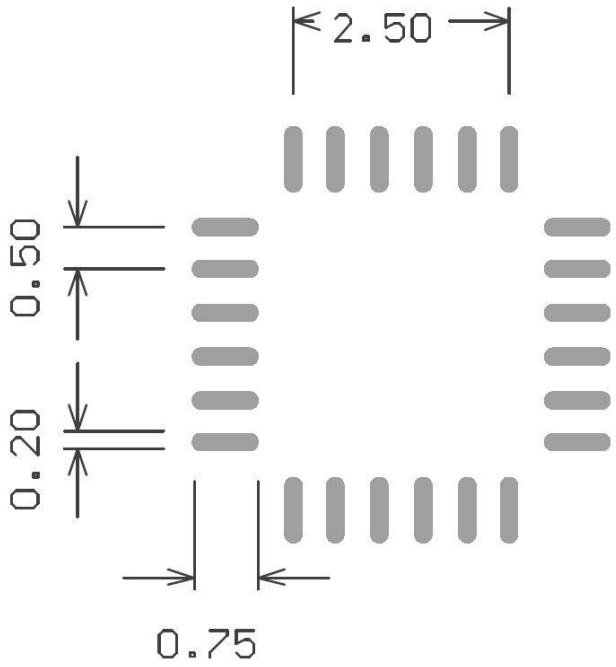


Figure 6.2 illustrates the recommended landing pattern for the ZSSC3018 QFN24 package.

Figure 6.2 Recommended Landing Pattern for ZSSC3018 QFN24 Package



Note: Dimensions are in mm.

7 Related Documents

Document
ZSSC3018 Data Sheet
ZSSC3018 Evaluation Kit Description

Visit the ZSSC3018 product page at www.IDT.com/ZSSC3018 or contact your nearest sales office for ordering information or the latest version of these documents.

8 Glossary

Term	Description
PCB	Printed Circuit Board
QFN	Quad Flat No Leads Package
SSC	Sensor Signal Conditioner

9 Document Revision History

Revision	Date	Description
160601	June 1, 2016	First release.

Corporate Headquarters
6024 Silver Creek Valley Road
San Jose, CA 95138
www.IDT.com

Sales
1-800-345-7015 or 408-284-8200
Fax: 408-284-2775
www.IDT.com/go/sales

Tech Support
www.IDT.com/go/support