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For a detailed datasheet and other design support tools, please contact VR@list.ti.com.

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TPS53640RSBR	ACTIVE	WQFN	RSB	40	3000	Green (RoHS & no Sb/Br)	NIPDAU	Level-2-260C-1 YEAR	-10 to 105	TPS 53640	Samples
TPS53640RSBT	ACTIVE	WQFN	RSB	40	250	Green (RoHS & no Sb/Br)	NIPDAU	Level-2-260C-1 YEAR	-10 to 105	TPS 53640	Samples

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSOLETE: TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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TAPE AND REEL INFORMATION


*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
TPS53640RSBR	WQFN	RSB	40	3000	330.0	12.4	5.3	5.3	1.1	8.0	12.0	Q2
TPS53640RSBT	WQFN	RSB	40	250	180.0	12.4	5.3	5.3	1.1	8.0	12.0	Q2

TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TPS53640RSBR	WQFN	RSB	40	3000	367.0	367.0	35.0
TPS53640RSBT	WQFN	RSB	40	250	210.0	185.0	35.0

GENERIC PACKAGE VIEW

RSB 40

WQFN - 0.8 mm max height

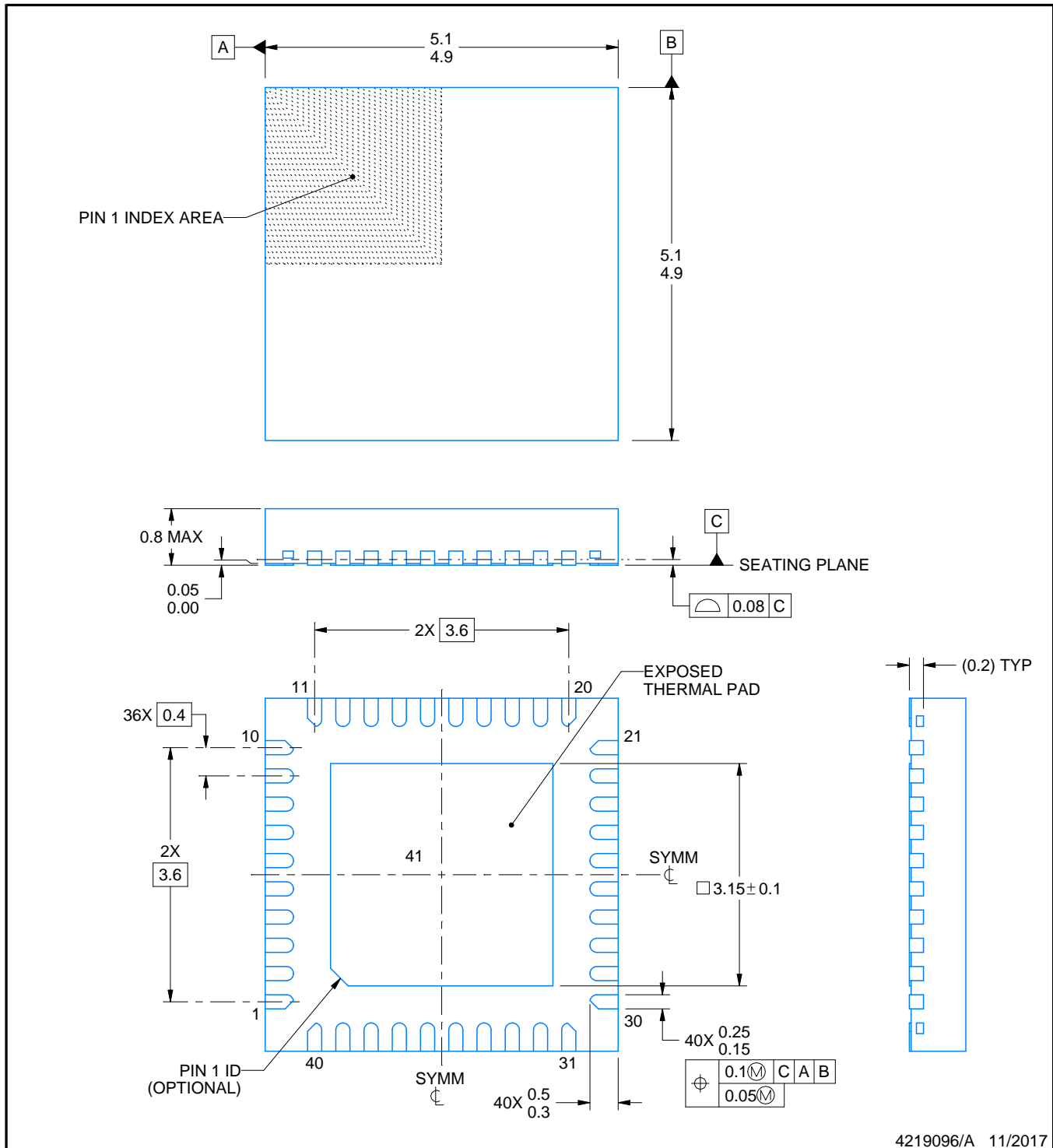
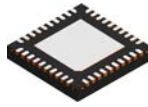
5 x 5 mm, 0.4 mm pitch

PLASTIC QUAD FLATPACK - NO LEAD



Images above are just a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

4207182/D



NOTES:

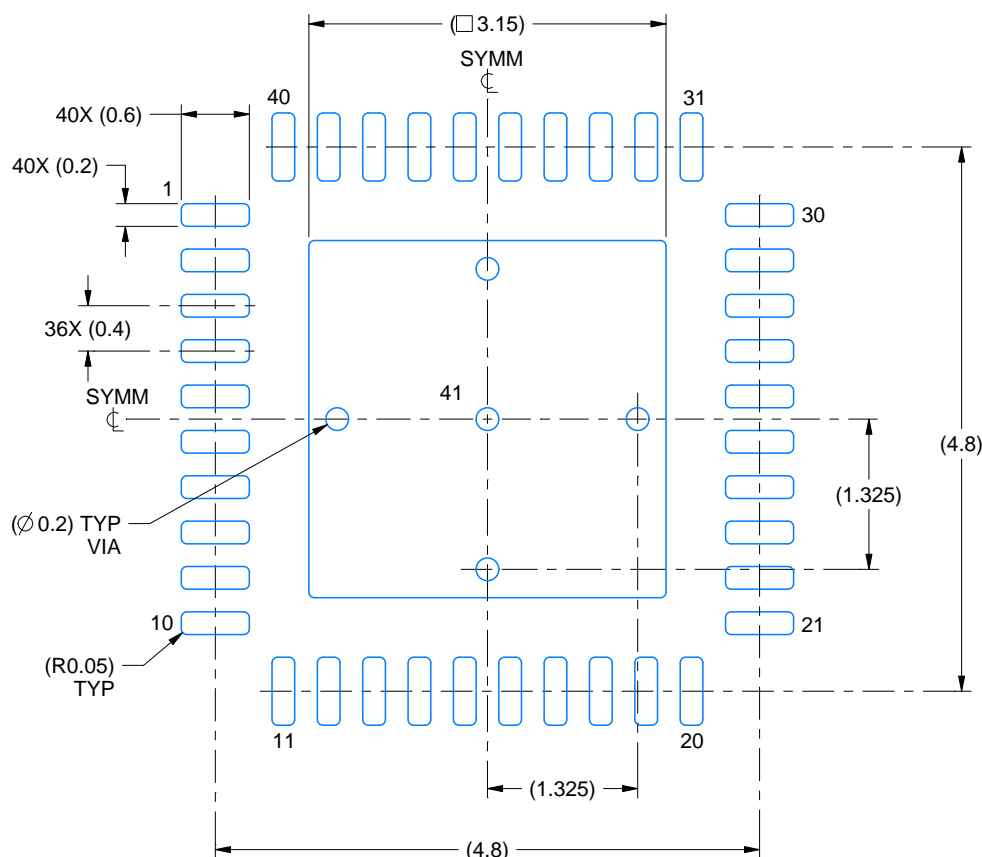
1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. The package thermal pad must be soldered to the printed circuit board for thermal and mechanical performance.

EXAMPLE BOARD LAYOUT

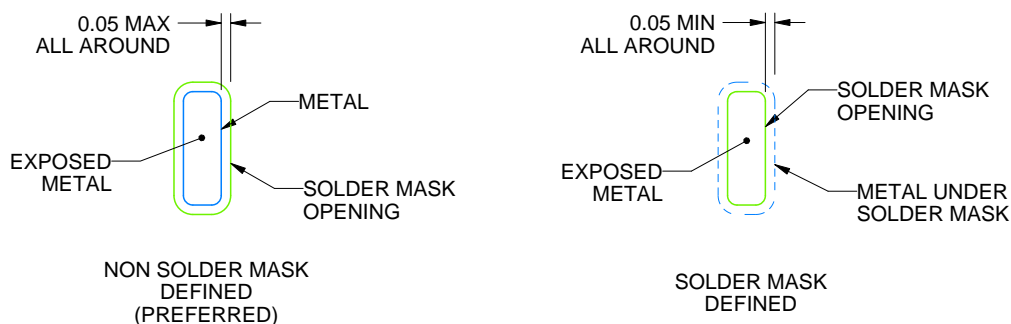
RSB0040E

WQFN - 0.8 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:15X



SOLDER MASK DETAILS

4219096/A 11/2017

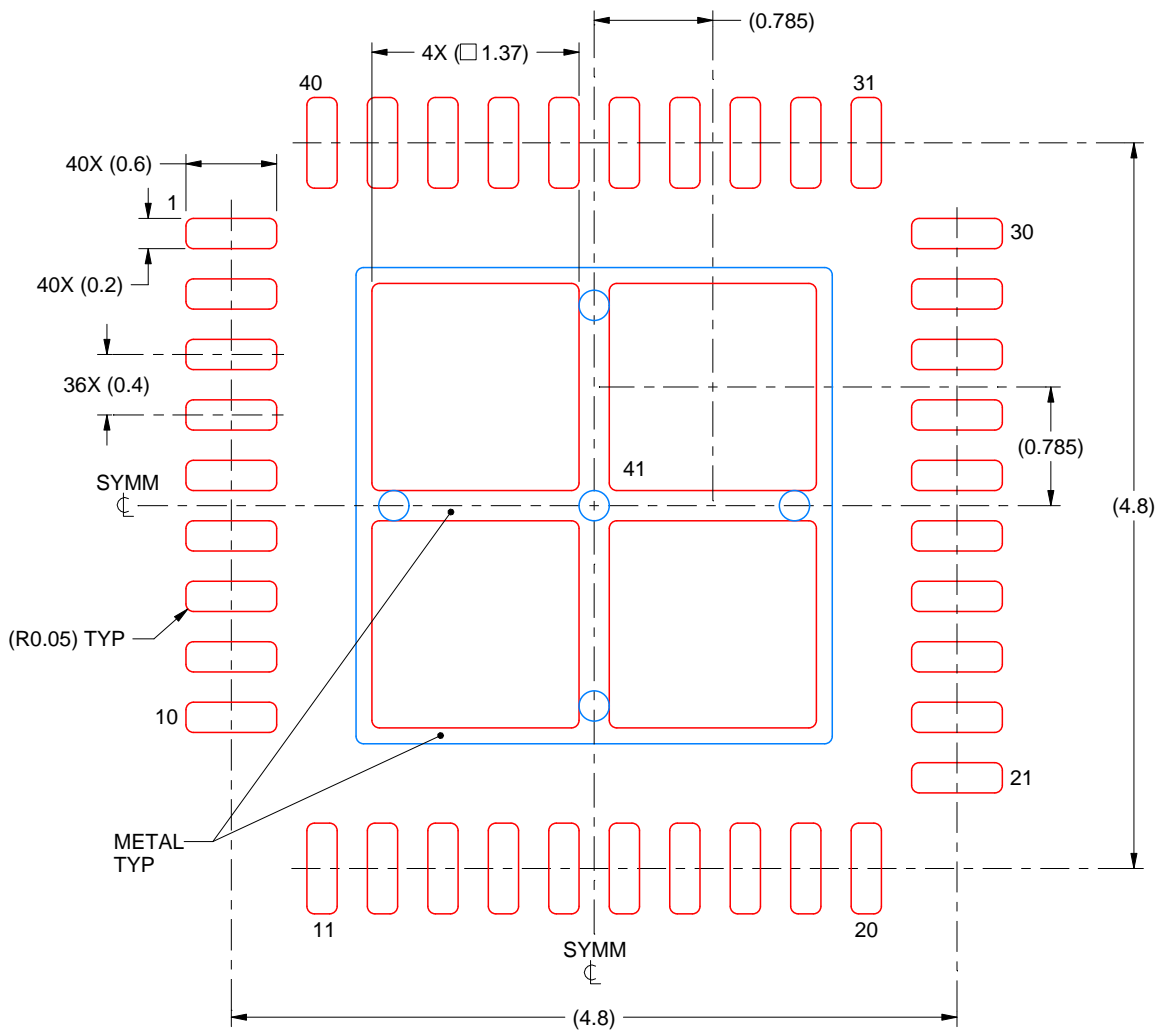
NOTES: (continued)

4. This package is designed to be soldered to a thermal pad on the board. For more information, see Texas Instruments literature number SLUA271 (www.ti.com/lit/sluea271).
5. Vias are optional depending on application, refer to device data sheet. If any vias are implemented, refer to their locations shown on this view. It is recommended that vias under paste be filled, plugged or tented.

RSB0040E

WQFN - 0.8 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



SOLDER PASTE EXAMPLE BASED ON 0.1 mm THICK STENCIL

EXPOSED PAD 41
75% PRINTED SOLDER COVERAGE BY AREA UNDER PACKAGE
SCALE:20X

4219096/A 11/2017

NOTES: (continued)

6. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.

WQFN - 0.8 mm max height

Technical drawing of a 40-pin Quad Flat Pack (QFP) package, showing dimensions and callouts.

Top View:

- Overall width: 5.15 (nominal), 4.85 (minimum)
- Overall height: 5.15 (nominal), 4.85 (minimum)
- PIN 1 INDEX AREA: Indicated by a dot and leader line.
- Pin 1 location: Indicated by a dot and leader line.

Side View:

- Seating Plane: Indicated by a horizontal line and leader line.
- Pin height: 0.8 (nominal), 0.7 (minimum)
- Pin thickness: 0.05 (nominal), 0.00 (minimum)
- Seating Plane Tolerance: 0.08 (C)

Detail View (Pin 1):

- Pin 1 ID: Indicated by a dot and leader line.
- Pin 1 ID: 0.4 (nominal)
- Pin 1 ID: 0.5 (nominal), 0.3 (minimum)
- Pin 1 ID: 0.25 (nominal), 0.15 (minimum)
- Pin 1 ID: 0.1 (M) (nominal), 0.05 (M) (minimum)
- Pin 1 ID: 0.08 (C) (nominal)
- Pin 1 ID: 0.05 (M) (nominal)

Other Callouts:

- EXPOSED THERMAL PAD: Indicated by a dot and leader line.
- SYMM: Symmetry symbol.
- 2X 3.6: Dimension for the exposed thermal pad.
- 11, 20, 21, 30, 31, 40, 41: Pin numbers.
- 36X 0.4: Dimension for the pin pitch.
- 40X 0.5 (nominal), 0.3 (minimum): Dimension for the pin pitch.
- 3.5 ± 0.1: Dimension for the pin pitch.
- (0.2) TYP: Typical dimension for the pin pitch.

NOTES:

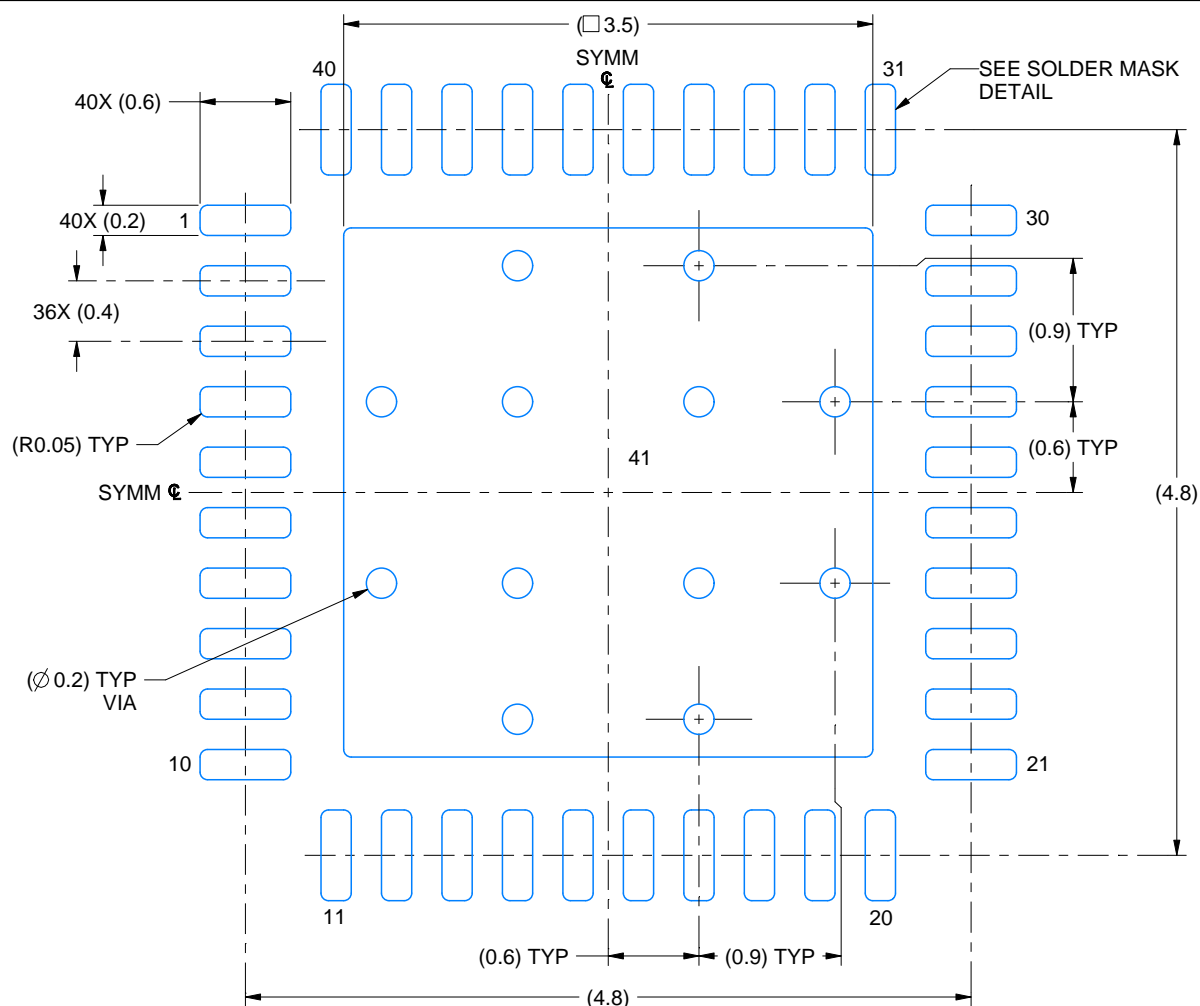
1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. The package thermal pad must be soldered to the printed circuit board for thermal and mechanical performance.

EXAMPLE BOARD LAYOUT

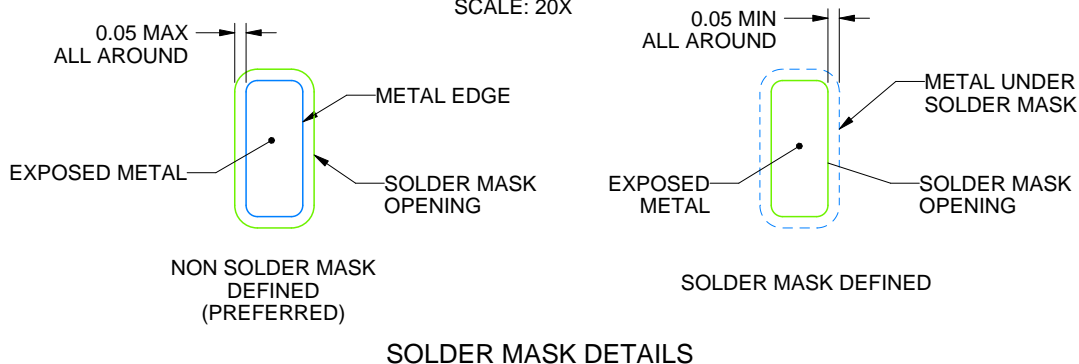
RSB0040B

WQFN - 0.8 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE: 20X



4219094/A 11/2018

NOTES: (continued)

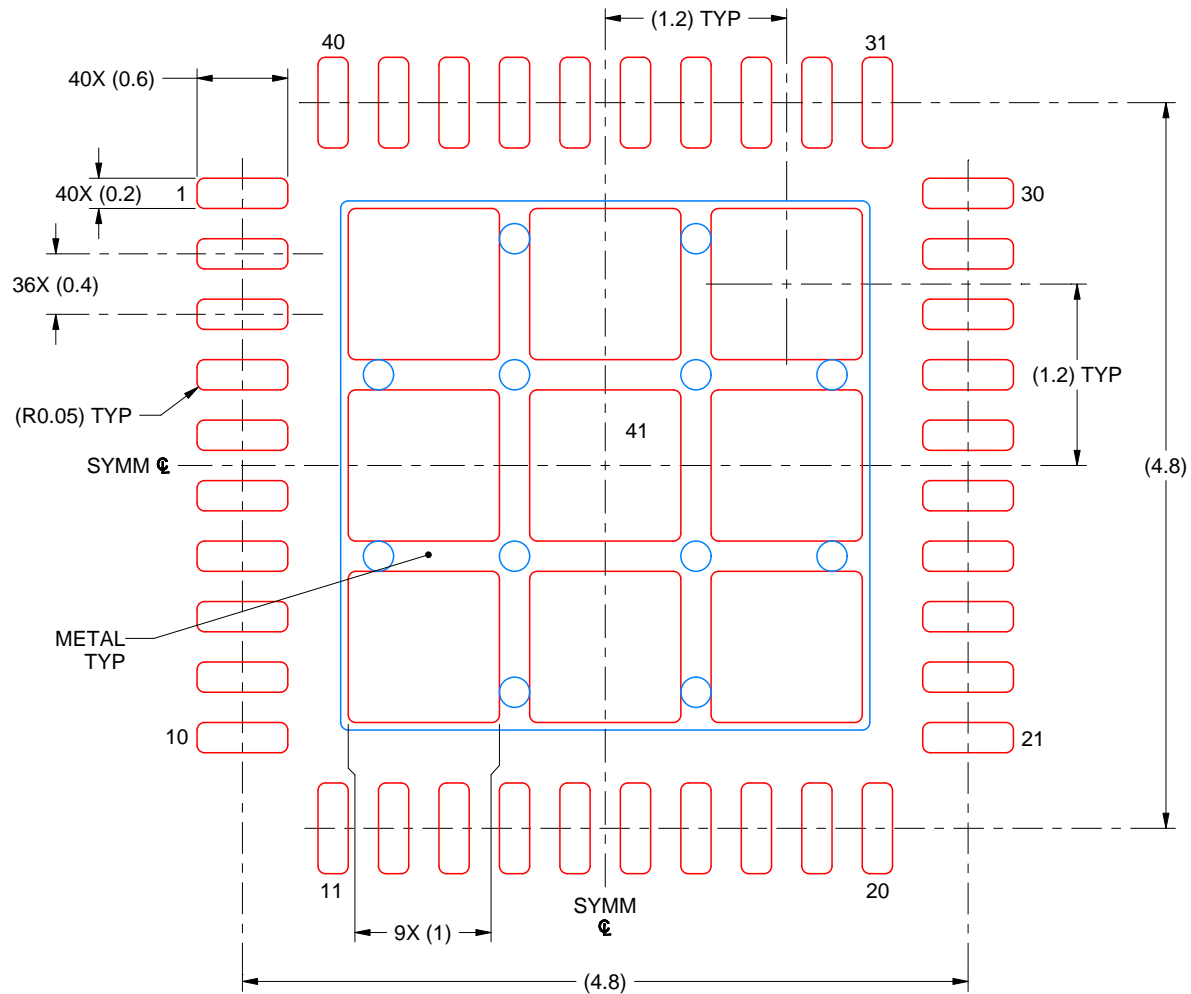
- This package is designed to be soldered to a thermal pad on the board. For more information, see Texas Instruments literature number SLUA271 (www.ti.com/lit/sluea271).
- Vias are optional depending on application, refer to device data sheet. If any vias are implemented, refer to their locations shown on this view. It is recommended that vias under paste be filled, plugged or tented.

EXAMPLE STENCIL DESIGN

RSB0040B

WQFN - 0.8 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



SOLDER PASTE EXAMPLE
 BASED ON 0.125 MM THICK STENCIL
 SCALE: 20X

EXPOSED PAD 41
 73% PRINTED SOLDER COVERAGE BY AREA UNDER PACKAGE

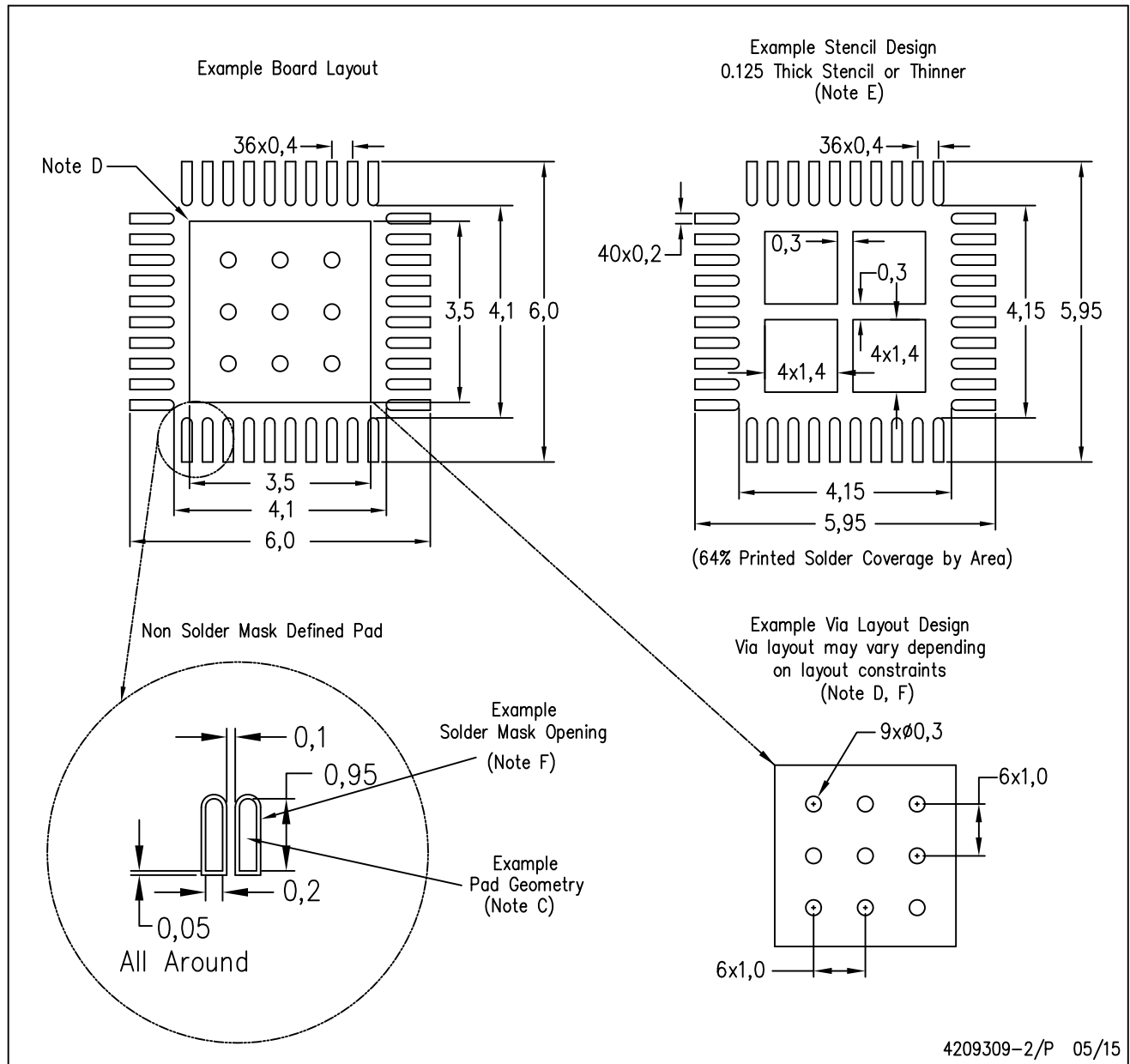
4219094/A 11/2018

NOTES: (continued)

6. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.

RSB (S-PWQFN-N40)

PLASTIC QUAD FLATPACK NO-LEAD



- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - Publication IPC-7351 is recommended for alternate designs.
 - This package is designed to be soldered to a thermal pad on the board. Refer to Application Note, Quad Flat-Pack Packages, Texas Instruments Literature No. SLUA271, and also the Product Data Sheets for specific thermal information, via requirements, and recommended board layout. These documents are available at www.ti.com <<http://www.ti.com>>.
 - Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC 7525 for stencil design considerations.
 - Customers should contact their board fabrication site for recommended solder mask tolerances and via tenting recommendations for vias placed in the thermal pad.

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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