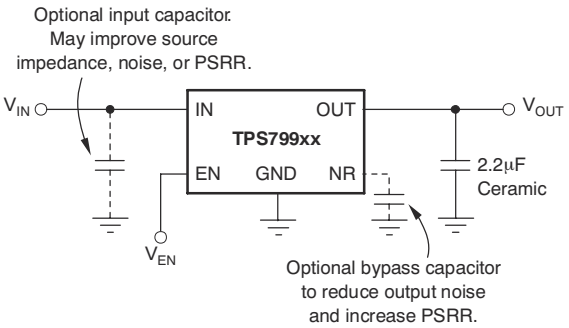
# TPS799 200mA 低静态电流、超低噪声、高 PSRR 低压降线性稳压器

## 1 特性

- 带有使能 (EN) 引脚的 200mA 低压降稳压器
- 提供了多个输出电压版本：
  - 1.2 V 至 4.5 V 固定输出
  - 1.20 V 至 6.5 V 可调节输出
- 带有 EN 切换的涌入电流保护
- 低 $I_Q$：40 µA
- 高 PSRR：
  - 1kHz 时为 66dB
  - 10kHz 时为 51dB
- 与一个低 ESR、2 µF（典型值）输出电容一同工作时保持稳定
- 出色的负载和线路瞬态响应
- 整体精度（负载、线路和温度）为 2%
- 超低压降：100mV
- 封装：
  - 5 凸点，薄型，0.97mm × 1.34mm DSBGA
  - 5 引脚 SOT-23-THIN
  - 6 引脚 WSON

## 2 应用

- 基站
- 智能手机
- EPOS
- 可穿戴电子产品
- VCO、射频
- 无线局域网，蓝牙®




典型应用电路：固定电压版本

## 3 描述

TPS799 低压降 (LDO)、低功耗线性稳压器可提供出色的交流性能以及极低的接地电流。仅消耗 40 µA（典型值）接地电流，同时具备高电源抑制比 (PSRR)，低噪声，快速启动以及出色的线路和负载瞬态响应特性。

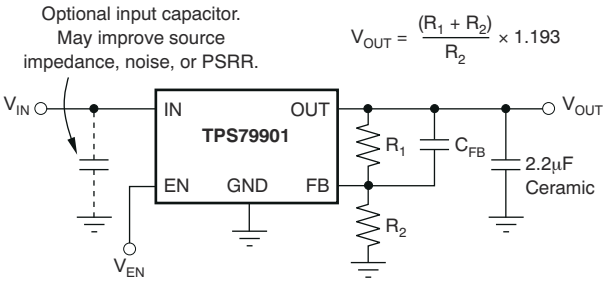
TPS799 与陶瓷电容器搭配使用时可保持稳定，并且该器件使用先进的 BiCMOS 制造工艺，能够在输出 200mA 电流时产生 100mV 的典型压降。TPS799 使用精密电压基准和反馈环路，可在全部负载、线路、过程和温度变化范围内实现 2% 的总精度。当 EN 切换被用于启动此器件时，TPS799 特有涌入电流保护功能可立即钳制电流。

该器件的额定工作温度范围为 $T_J$ = -40°C 至 +125°C，采用扁平裸片尺寸球栅阵列 (DSBGA) 封装，因此适用于无线手持终端和 WLAN 卡。该器件还采用 5 引脚 SOT-23-THIN 和 6 引脚 WSON 封装。

器件信息(1)

| 器件型号 | 封装 | 封装尺寸（标称值） |
|---|---|---|
| TPS799 | SOT-23-THIN (5) | 2.90mm × 1.60mm |
| | WSON (6) | 2.00mm × 2.00mm |
| | DSBGA (5) | 1.34 mm × 0.97 mm |

(1) 要了解所有可用封装，请参见数据表末尾的封装选项附录。




典型应用电路：可调电压版本

本文档旨在为方便起见，提供有关 TI 产品中文版本的信息，以确认产品的概要。有关适用的官方英文版本的最新信息，请访问 www.ti.com，其内容始终优先。TI 不保证翻译的准确性和有效性。在实际设计之前，请务必参考最新版本的英文版本。

# Table of Contents

**1 特性** ..... 1
**2 应用** ..... 1
**3 描述** ..... 1
**4 Revision History** ..... 2
**5 Pin Configuration and Functions** ..... 3
**6 Specifications** ..... 4
6.1 Absolute Maximum Ratings ..... 4
6.2 ESD Ratings ..... 4
6.3 Recommended Operating Conditions ..... 4
6.4 Thermal Information ..... 4
6.5 Electrical Characteristics ..... 5
6.6 Typical Characteristics ..... 6
**7 Detailed Description** ..... 11
7.1 Overview ..... 11
7.2 Functional Block Diagrams ..... 11
7.3 Feature Description ..... 12
7.4 Device Functional Modes ..... 12
**8 Application and Implementation** ..... 13
8.1 Application Information ..... 13
8.2 Typical Application ..... 13
8.3 What To Do and What Not To Do ..... 15
**9 Power Supply Recommendations** ..... 15
**10 Layout** ..... 15
10.1 Layout Guidelines ..... 15
10.2 Layout Example ..... 16
**11 Device and Documentation Support** ..... 17
11.1 Device Support ..... 17
11.2 Documentation Support ..... 17
11.3 接收文档更新通知 ..... 17
11.4 支持资源 ..... 17
11.5 Trademarks ..... 18
11.6 Electrostatic Discharge Caution ..... 18
11.7 术语表 ..... 18
**12 Mechanical, Packaging, and Orderable Information** ..... 18

## 4 Revision History

注：以前版本的页码可能与当前版本的页码不同

**Changes from Revision K (January 2015) to Revision L (September 2021)** **Page**

- 在*特性* 要点中添加了 10kHz 时的 PSRR 值 ..... 1
- 在*特性* 要点中添加了缺失的封装 ..... 1
- 通篇将 *SOT* 更改为 *SOT-23-THIN*，将 *SON* 更改为 *WSON* ..... 1
- 更改了*应用* 要点 ..... 1
- 更改了*器件信息* 表中的 DSBGA 封装尺寸值 ..... 1
- Changed YZY package to YZU in *Pin Functions* table (typo) ..... 3
- Added note (1) to *Recommended Operating Conditions*; moved from *Electrical Characteristics* ..... 4
- Deleted *Input Voltage* from *Electrical Characteristics*; already shown in *Recommended Operating Conditions* ..... 5
- Deleted *Junction Temperature* from *Electrical Characteristics*; already shown in *Recommended Operating Conditions* ..... 5
- Changed *Do's and Don'ts* title to *What To Do and What Not To Do* ..... 15

**Changes from Revision J (August 2010) to Revision K (January 2015)** **Page**

- 添加了 *ESD 等级* 表、*特性说明* 部分、*器件功能模式*、*应用和实施* 部分、*电源相关建议* 部分、*布局* 部分、*器件和文档支持* 部分以及*机械、封装和可订购信息* 部分 ..... 1
- 更改了特性列表 ..... 1
- 更改了*说明* 部分 ..... 1
- 更改了首页图形；用应用电路替换了器件引脚排列 ..... 1
- Changed Pin Configuration and Functions section; updated table format, renamed pin packages ..... 3
- Changed "free-air" to "junction" temperature in condition statement for *Absolute Maximum Ratings* ..... 4
- Changed *free-air* to *junction* in Recommended Operating Conditions table conditions ..... 4
- Added thermal information for additional device packages ..... 4


Copyright © 2022 Texas Instruments Incorporated

## 5 Pin Configuration and Functions

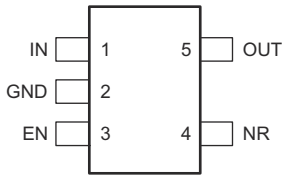



图 5-1. DDC Package (Fixed), 5-Pin SOT-23-THIN (Top View)

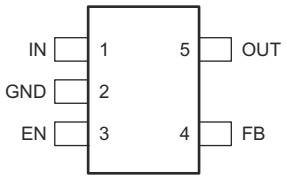



图 5-2. DDC Package (Adjustable), 5-Pin SOT-23-THIN (Top View)

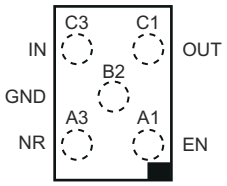



图 5-3. YZU Package (Fixed), 5-Pin DSBGA (Top View)

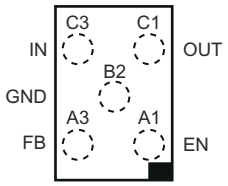



图 5-4. YZU Package (Adjustable), 5-Pin DSBGA (Top View)

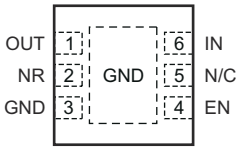



图 5-5. DRV Package (Fixed), 6-Pin WSON With Exposed Thermal Pad (Top View)

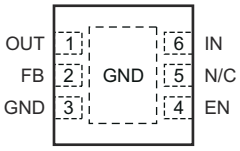



图 5-6. DRV Package (Adjustable), 6-Pin WSON With Exposed Thermal Pad (Top View)

表 5-1. Pin Functions

| PIN | | | | I/O | DESCRIPTION |
|---|---|---|---|---|---|
| NAME | DDC | YZU | DRV | | |
| IN | 1 | C3 | 6 | I | Input supply. |
| GND | 2 | B2 | 3, Pad | — | Ground. The pad must be tied to GND. |
| EN | 3 | A1 | 4 | I | Driving this pin high turns on the regulator. Driving this pin low puts the regulator into shutdown mode. EN can be connected to IN if not used. |
| NR | 4 | A3 | 2 | — | Fixed voltage versions only. Noise reduction; connecting this pin to an external capacitor bypasses noise generated by the internal band gap. This capacitor allows output noise to be reduced to very low levels. |
| FB | 4 | A3 | 2 | I | Adjustable voltage version only. Feedback; this pin is the input to the control loop error amplifier, and sets the output voltage of the device. |
| OUT | 5 | C1 | 1 | O | Output of the regulator. To assure stability, a small ceramic capacitor (total typical capacitance ⩾ 2 μF) is required from this pin to ground. |
| N/C | — | — | 5 | — | Not internally connected. This pin must either be left open, or tied to GND. |

Copyright © 2022 Texas Instruments Incorporated

# 6 Specifications

## 6.1 Absolute Maximum Ratings

over operating junction temperature range (unless otherwise noted) (1)

| | | MIN | MAX | UNIT |
|---|---|---|---|---|
| Voltage(2) | IN | –0.3 | 7.0 | V |
| | EN | –0.3 | $V_{IN}$ + 0.3 | V |
| | OUT | –0.3 | $V_{IN}$ + 0.3 | V |
| Current | OUT | Internally limited | | mA |
| Temperature | Operating virtual junction, $T_J$ | –55 | 150 | °C |
| | Storage, $T_{stg}$ | –55 | 150 | °C |

(1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions*. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
(2) All voltages are with respect to network ground terminal.

## 6.2 ESD Ratings

| | | | VALUE | UNIT |
|---|---|---|---|---|
| $V_{(ESD)}$ | Electrostatic discharge | Human body model (HBM), per ANSI/ESDA/JEDEC JS-001, all pins(1) | ±2000 | V |
| | | Charged device model (CDM), per JEDEC specification JESD22-C101, all pins(2) | ±500 | |

(1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.
(2) JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

## 6.3 Recommended Operating Conditions

over operating junction temperature range (unless otherwise noted)

| | | MIN | NOM | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{IN}$ | Input voltage(1) | 2.7 | | 6.5 | V |
| $I_{OUT}$ | Output current | 0.5 | | 200 | mA |
| $T_J$ | Operating junction temperature | –40 | | 125 | °C |

(1) Minimum $V_{IN} = V_{OUT} + V_{DO}$ or 2.7 V, whichever is greater.

## 6.4 Thermal Information

| THERMAL METRIC(1) | | TPS799 | | | UNIT |
|---|---|---|---|---|---|
| | | DDC (SOT-23-THIN) | DRV (WSON) | YZU (DSBGA) | |
| | | 5 PINS | 6 PINS | 5 PINS | |
| $R_{\theta JA}$ | Junction-to-ambient thermal resistance | 225.3 | 74.2 | 143.3 | °C/W |
| $R_{\theta JC(top)}$ | Junction-to-case (top) thermal resistance | 39.3 | 58.8 | 1.1 | °C/W |
| $R_{\theta JB}$ | Junction-to-board thermal resistance | 47.3 | 145.9 | 84.7 | °C/W |
| $\psi_{JT}$ | Junction-to-top characterization parameter | 0.5 | 0.2 | 3.8 | °C/W |
| $\psi_{JB}$ | Junction-to-board characterization parameter | 46.7 | 54.4 | 84.4 | °C/W |
| $R_{\theta JC(bot)}$ | Junction-to-case (bottom) thermal resistance | N/A | 7.2 | N/A | °C/W |

(1) For more information about traditional and new thermal metrics, see the *Semiconductor and IC Package Thermal Metrics* application report.


Copyright © 2022 Texas Instruments Incorporated

## 6.5 Electrical Characteristics

at $T_J$ = –40°C to +125°C, $V_{IN}$ = $V_{OUT(nom)}$ + 0.3 V or 2.7 V (whichever is greater), $I_{OUT}$ = 1 mA, $V_{EN}$ = $V_{IN}$, $C_{OUT}$ = 2.2 µF, and $C_{NR}$ = 0.01 µF (unless otherwise noted); for TPS79901, $V_{OUT}$ = 3.0 V; typical values are at $T_J$ = 25°C

| PARAMETER | | TEST CONDITIONS | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| $V_{FB}$ | Internal reference (TPS79901) | | | 1.169 | 1.193 | 1.217 | V |
| $V_{OUT}$ | Output voltage range (TPS79901) | | | $V_{FB}$ | | 6.5 – $V_{DO}$ | V |
| | Output accuracy, nominal | $T_J$ = 25°C | | –1% | | 1% | |
| | Output accuracy(1) over $V_{IN}$, $I_{OUT}$, temperature | $V_{OUT}$ + 0.3 V ≤ $V_{IN}$ ≤ 6.5 V<br>500 µA ≤ $I_{OUT}$ ≤ 200 mA | | –2% | ±1% | 2% | |
| $\Delta V_{O(\Delta VI)}$ | Line regulation(1) | $V_{OUT(NOM)}$ + 0.3 V ≤ $V_{IN}$ ≤ 6.5 V | | | 0.02 | | %/V |
| $\Delta V_{O(\Delta IO)}$ | Load regulation | 500 µA ≤ $I_{OUT}$ ≤ 200 mA | | | 0.002 | | %/mA |
| $V_{DO}$ | Dropout voltage(1) ($V_{IN}$ = $V_{OUT(nom)}$ – 0.1 V) | $I_{OUT}$ = 200 mA | $V_{OUT(nom)}$ ≤ 3.3 V | | 100 | 175 | mV |
| | | | $V_{OUT(nom)}$ ≥ 3.3 V | | 90 | 160 | |
| $I_{CL}$ | Output current limit | $V_{OUT}$ = 0.9 × $V_{OUT(nom)}$ | | 220 | 400 | 600 | mA |
| $I_{GND}$ | Ground pin current | 500 µA ≤ $I_{OUT}$ ≤ 200 mA | | | 40 | 60 | µA |
| $I_{SHDN}$ | Shutdown current ($I_{GND}$) | $V_{EN}$ ≤ 0.4 V, 2.7 V ≤ $V_{IN}$ ≤ 6.5 V | | | 0.15 | 1 | µA |
| $I_{FB}$ | Feedback pin current (TPS79901) | | | –0.5 | | 0.5 | µA |
| PSRR | Power-supply rejection ratio | $V_{IN}$ = 3.85 V,<br>$V_{OUT}$ = 2.85 V,<br>$C_{NR}$ = 0.01 µF,<br>$I_{OUT}$ = 100 mA | f = 100 Hz | | 70 | | dB |
| | | | f = 1 kHz | | 66 | | |
| | | | f = 10 kHz | | 51 | | |
| | | | f = 100 kHz | | 38 | | |
| $V_n$ | Output noise voltage | BW = 10 Hz to 100 kHz,<br>$V_{OUT}$ = 2.85 V | $C_{NR}$ = 0.01 µF | | 10.5 × $V_{OUT}$ | | µ$V_{RMS}$ |
| | | | $C_{NR}$ = none | | 94 × $V_{OUT}$ | | |
| | Start-up time | $V_{OUT}$ = 2.85 V,<br>$R_L$ = 14 Ω,<br>$C_{OUT}$ = 2.2 µF | $C_{NR}$ = 0.001 µF | | 45 | | µs |
| | | | $C_{NR}$ = 0.047 µF | | 45 | | |
| | | | $C_{NR}$ = 0.01 µF | | 50 | | |
| | | | $C_{NR}$ = none | | 50 | | |
| $V_{EN(HI)}$ | Enable high (enabled) | | | 1.2 | | $V_{IN}$ | V |
| $V_{EN(LO)}$ | Enable low (shutdown) | | | 0 | | 0.4 | V |
| $I_{EN(HI)}$ | Enable pin current, enabled | $V_{EN}$ = $V_{IN}$ = 6.5 V | | | 0.03 | 1 | µA |
| UVLO | Undervoltage lockout | $V_{IN}$ rising | | 1.90 | 2.20 | 2.65 | V |
| | UVLO hysteresis | $V_{IN}$ falling | | | 70 | | mV |
| $T_{sd}$ | Thermal shutdown temperature | Shutdown, temperature increasing | | | 165 | | °C |
| | | Reset, temperature decreasing | | | 145 | | |

(1) $V_{DO}$ is not measured for devices with $V_{OUT(nom)}$ < 2.8 V because minimum $V_{IN}$ = 2.7 V.

Copyright © 2022 Texas Instruments Incorporated

## 6.6 Typical Characteristics

at $T_J$= –40°C to +125°C, $V_{IN}$ = $V_{OUT(nom)}$ + 0.3 V or 2.7 V (whichever is greater), $I_{OUT}$ = 1 mA, $V_{EN}$ = $V_{IN}$, $C_{OUT}$ = 2.2 µF, and $C_{NR}$ = 0.01 µF (unless otherwise noted); for TPS79901, $V_{OUT}$ = 3.0 V; typical values are at $T_J$ = 25°C

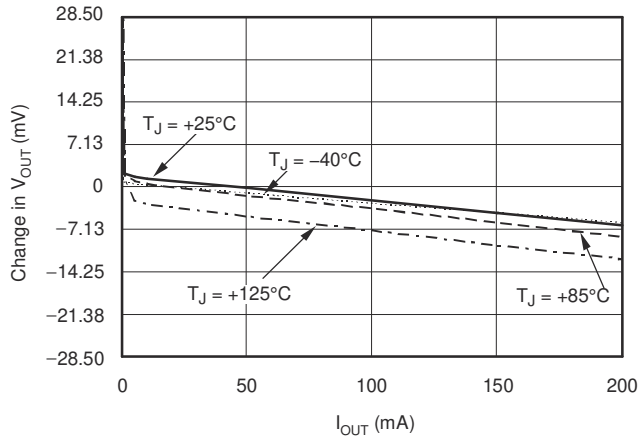



图 6-1. Load Regulation

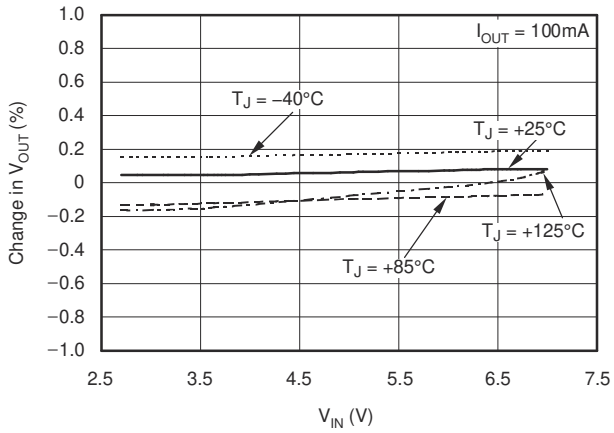



图 6-2. Line Regulation

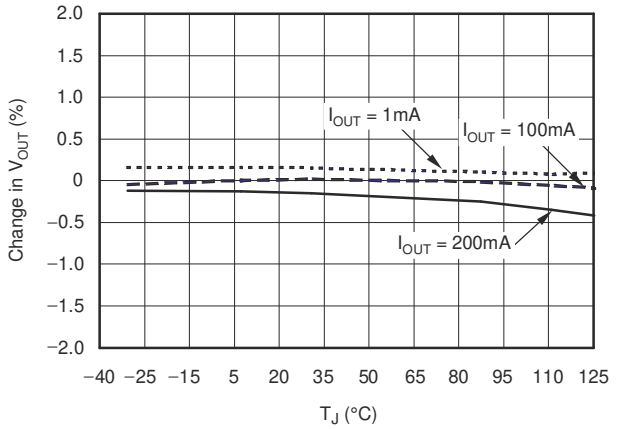



图 6-3. Output Voltage vs Junction Temperature

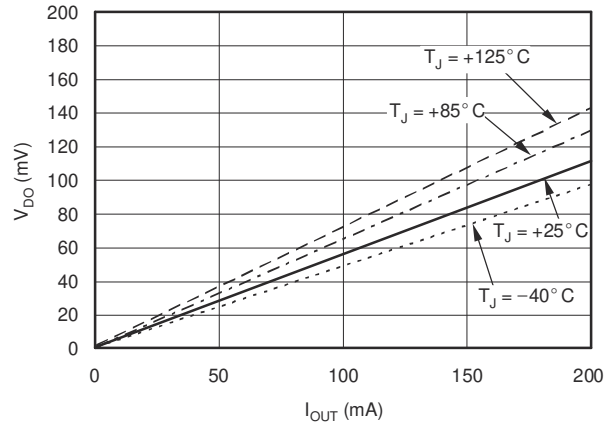



图 6-4. TPS799285 Dropout Voltage vs Output Current

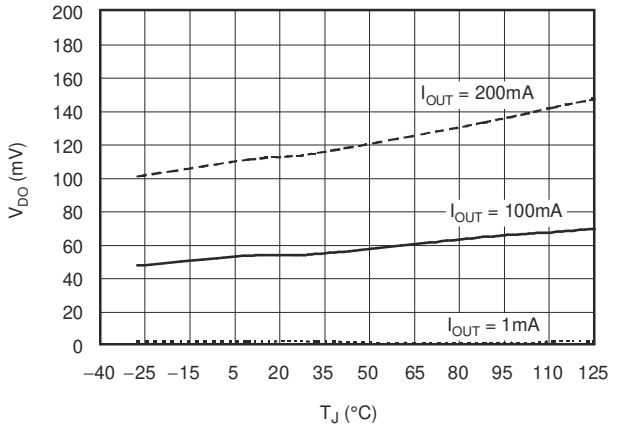



图 6-5. TPS799285 Dropout Voltage vs Junction Temperature

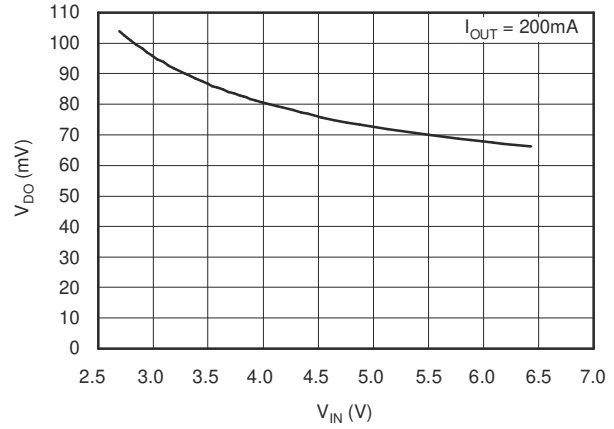



图 6-6. TPS79901 Dropout vs Input Voltage


Copyright © 2022 Texas Instruments Incorporated

## 6.6 Typical Characteristics (continued)

at $T_J$= –40°C to +125°C, $V_{IN}$ = $V_{OUT(nom)}$ + 0.3 V or 2.7 V (whichever is greater), $I_{OUT}$ = 1 mA, $V_{EN}$ = $V_{IN}$, $C_{OUT}$ = 2.2 µF, and $C_{NR}$ = 0.01 µF (unless otherwise noted); for TPS79901, $V_{OUT}$ = 3.0 V; typical values are at $T_J$ = 25°C

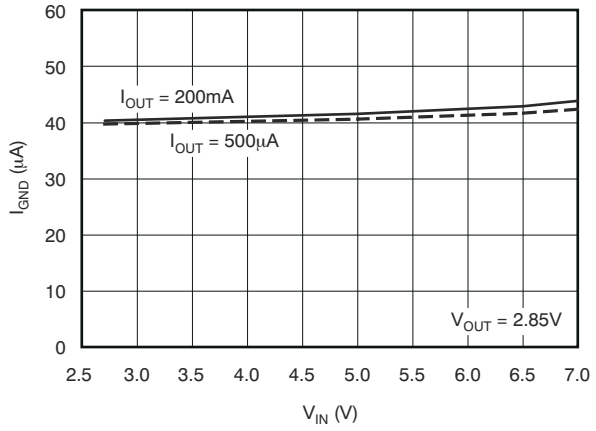



图 6-7. Ground Pin Current vs Input Voltage

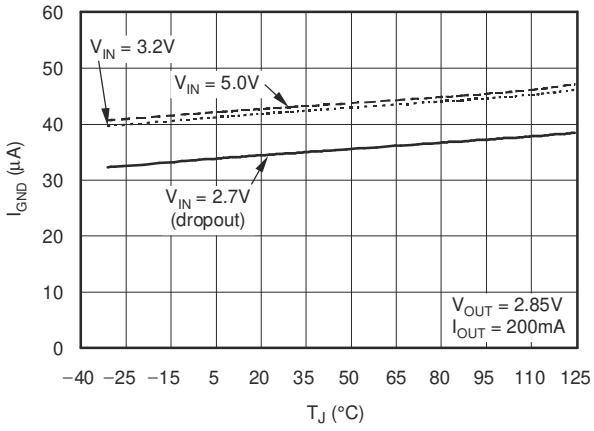



图 6-8. TPS799285 Ground Pin Current vs Junction Temperature

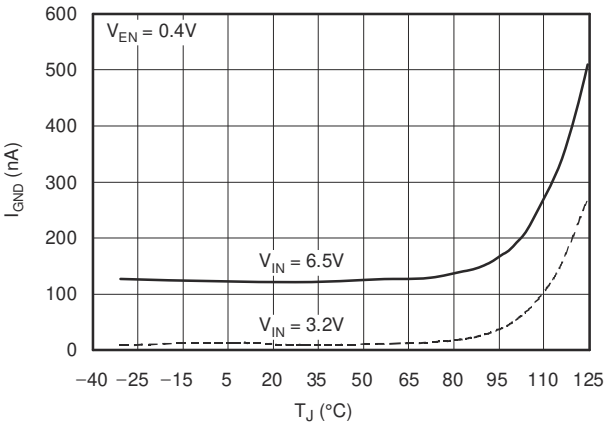
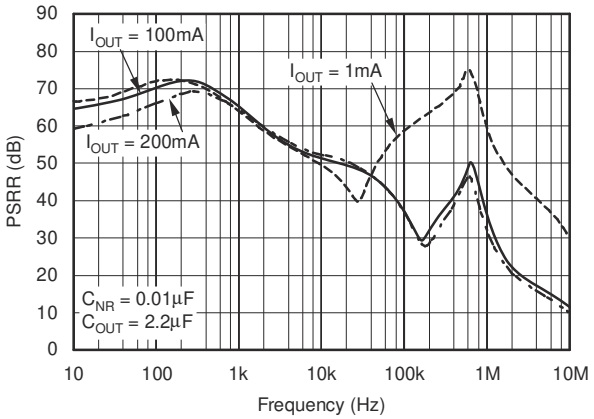
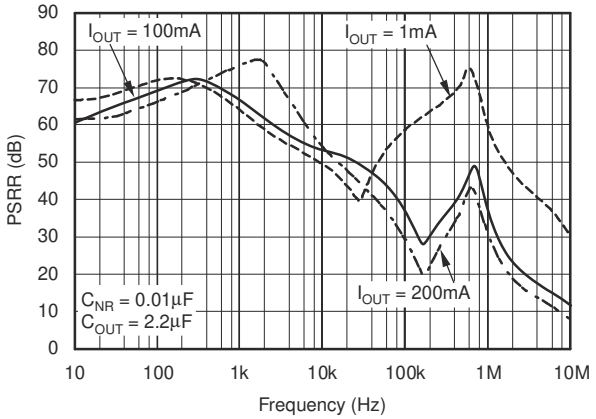



图 6-9. Ground Pin Current (Disabled) vs Junction Temperature



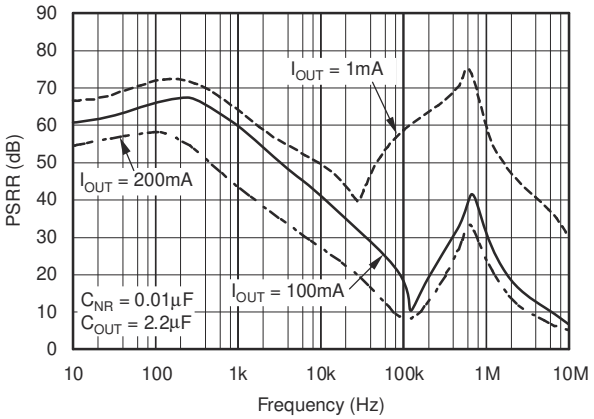

$V_{IN}$ – $V_{OUT}$ = 1.0 V

图 6-10. TPS799285 Power-Supply Ripple Rejection vs Frequency




$V_{IN}$ – $V_{OUT}$ = 0.5 V

图 6-11. TPS799285 Power-Supply Ripple Rejection vs Frequency



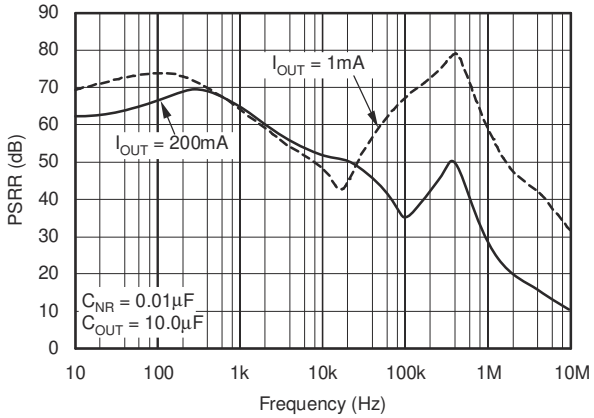

$V_{IN}$ – $V_{OUT}$ = 0.25 V

图 6-12. TPS799285 Power-Supply Ripple Rejection vs Frequency

Copyright © 2022 Texas Instruments Incorporated

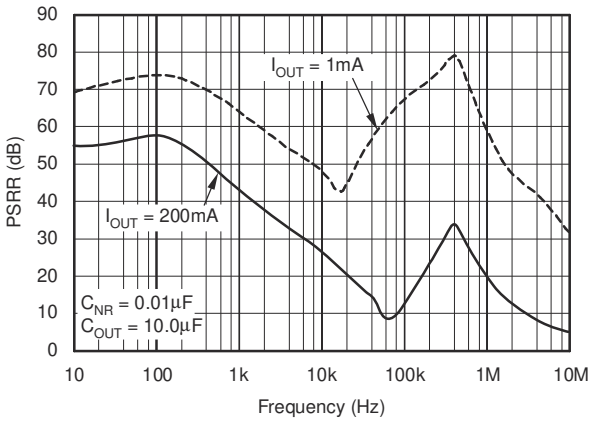
## 6.6 Typical Characteristics (continued)

at $T_J$ = –40°C to +125°C, $V_{IN}$ = $V_{OUT(nom)}$ + 0.3 V or 2.7 V (whichever is greater), $I_{OUT}$ = 1 mA, $V_{EN}$ = $V_{IN}$, $C_{OUT}$ = 2.2 µF, and $C_{NR}$ = 0.01 µF (unless otherwise noted); for TPS79901, $V_{OUT}$ = 3.0 V; typical values are at $T_J$ = 25°C



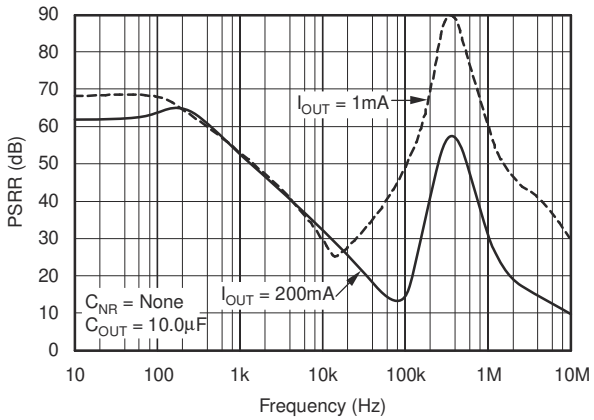

$V_{IN}$ – $V_{OUT}$ = 1.0 V

**图 6-13. TPS799285 Power-Supply Ripple Rejection vs Frequency**



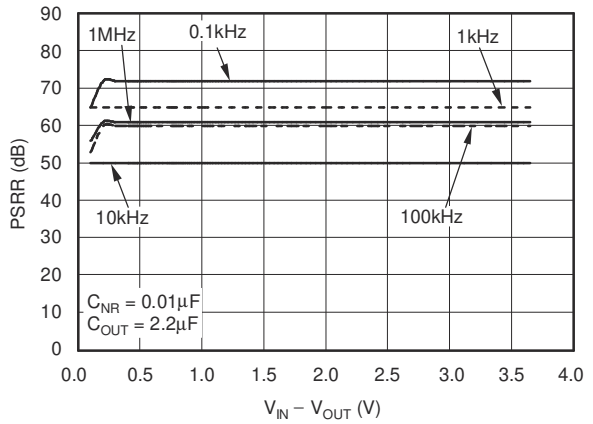

$V_{IN}$ – $V_{OUT}$ = 0.25 V

**图 6-14. TPS799285 Power-Supply Ripple Rejection vs Frequency**



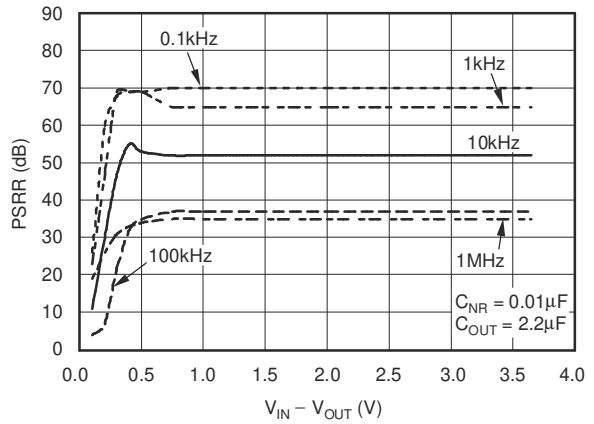

$V_{IN}$ – $V_{OUT}$ = 1.0 V

**图 6-15. TPS799285 Power-Supply Ripple Rejection vs Frequency**



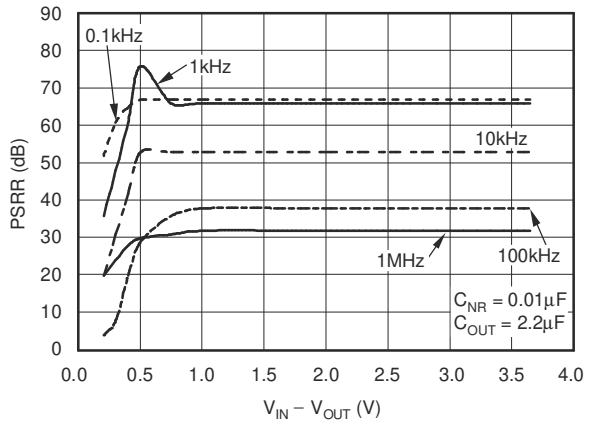

$I_{OUT}$ = 1 mA

**图 6-16. Power-Supply Ripple Rejection vs $V_{IN}$ – $V_{OUT}$**




$I_{OUT}$ = 100 mA

**图 6-17. Power-Supply Ripple Rejection vs $V_{IN}$ – $V_{OUT}$**




$I_{OUT}$ = 200 mA

**图 6-18. Power-Supply Ripple Rejection vs $V_{IN}$ – $V_{OUT}$**


Copyright © 2022 Texas Instruments Incorporated

## 6.6 Typical Characteristics (continued)

at $T_J$ = –40°C to +125°C, $V_{IN}$ = $V_{OUT(nom)}$ + 0.3 V or 2.7 V (whichever is greater), $I_{OUT}$ = 1 mA, $V_{EN}$ = $V_{IN}$, $C_{OUT}$ = 2.2 µF, and $C_{NR}$ = 0.01 µF (unless otherwise noted); for TPS79901, $V_{OUT}$ = 3.0 V; typical values are at $T_J$ = 25°C

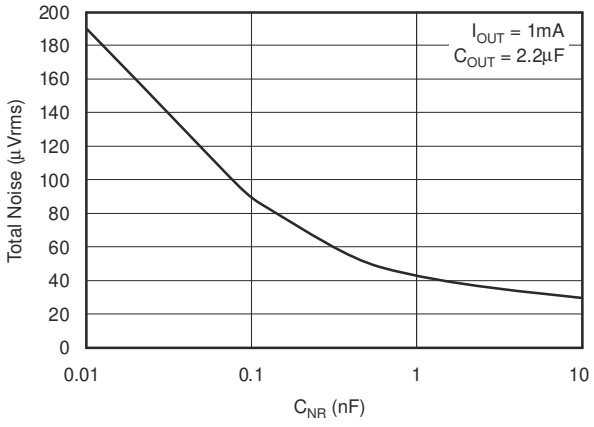



图 6-19. TPS799285 Total Noise vs $C_{NR}$

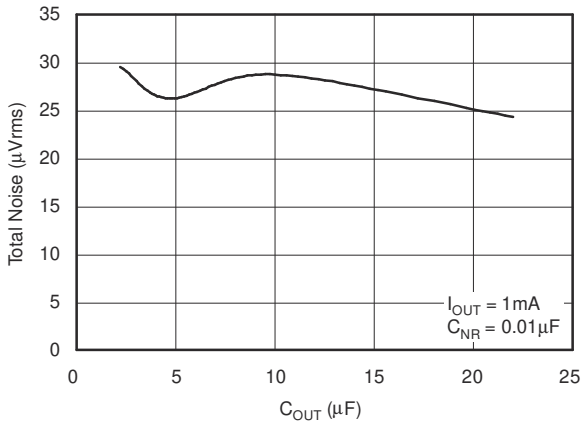



图 6-20. TPS799285 Total Noise vs $C_{OUT}$

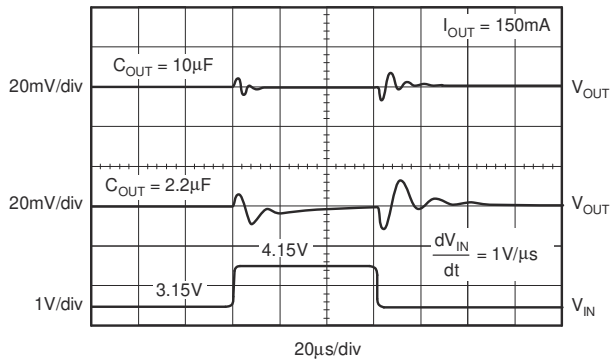



图 6-21. TPS799285 Line Transient Response

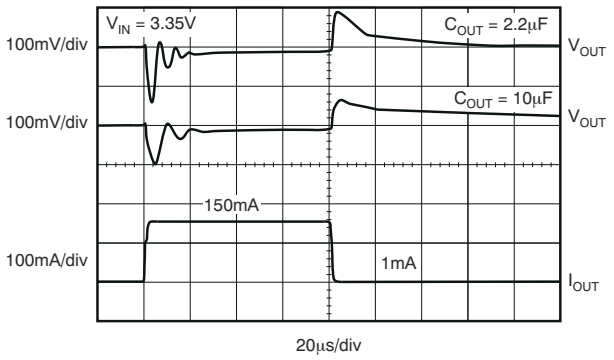



图 6-22. TPS799285 Load Transient Response

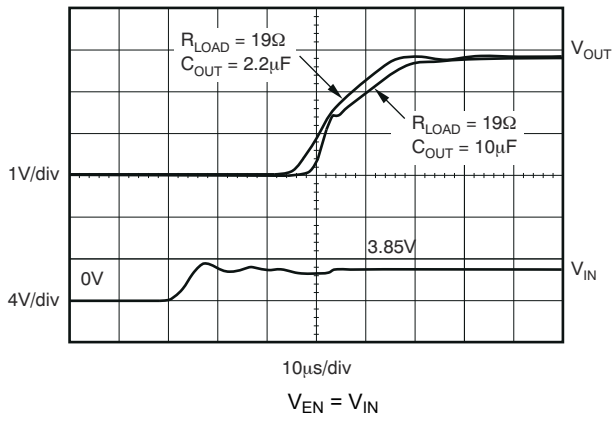



图 6-23. TPS799285 Turn-On Response

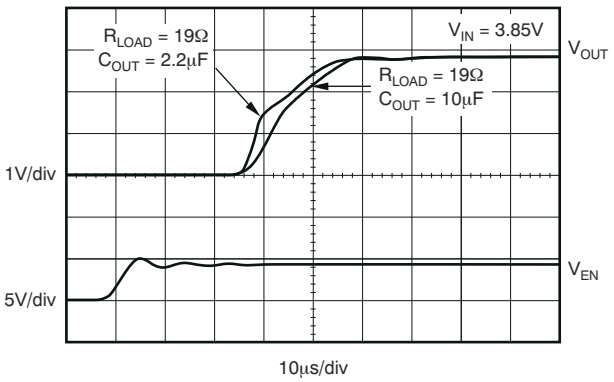



图 6-24. TPS799285 Enable Response

Copyright © 2022 Texas Instruments Incorporated

## 6.6 Typical Characteristics (continued)

at $T_J$= –40°C to +125°C, $V_{IN}$ = $V_{OUT(nom)}$ + 0.3 V or 2.7 V (whichever is greater), $I_{OUT}$ = 1 mA, $V_{EN}$ = $V_{IN}$, $C_{OUT}$ = 2.2 μF, and $C_{NR}$ = 0.01 μF (unless otherwise noted); for TPS79901, $V_{OUT}$ = 3.0 V; typical values are at $T_J$ = 25°C

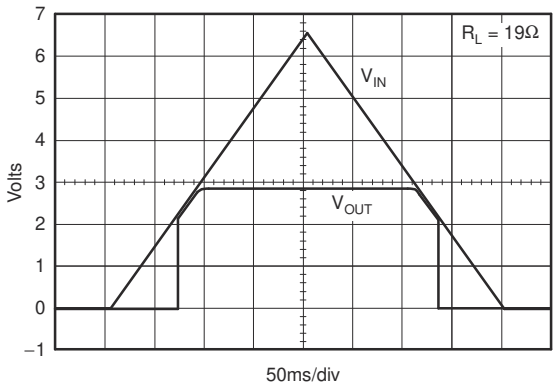



**图 6-25. TPS799285 Power-Up and Power-Down**


Copyright © 2022 Texas Instruments Incorporated

# 7 Detailed Description

## 7.1 Overview

The TPS799 low-dropout (LDO) regulator combines the high performance required of many RF and precision analog applications with ultra-low current consumption. High PSRR is provided by a high-gain, high-bandwidth error loop with good supply rejection at very low headroom ($V_{IN}$ – $V_{OUT}$). A noise-reduction pin is provided to bypass noise generated by the band-gap reference and to improve PSRR, while a quick-start circuit quickly charges this capacitor at start-up. The combination of high performance and low ground current also make this device an excellent choice for portable applications. This device has thermal and overcurrent protection, and is fully specified from –40°C to +125°C.

The TPS799 also features inrush current protection with an EN toggle start-up, and overshoot detection at the output. When the EN toggle is used to start the device, current limit protection is immediately activated, restricting the inrush current to the device. If voltage at the output overshoots 5% from the nominal value, a pulldown resistor reduces the voltage to normal operating conditions, as shown in the *Functional Block Diagrams*.

## 7.2 Functional Block Diagrams

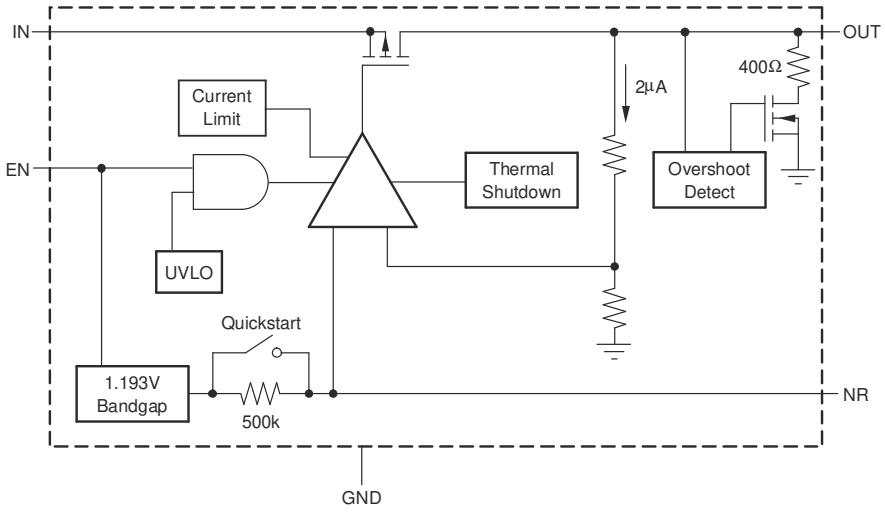



**图 7-1. Fixed-Voltage Versions**

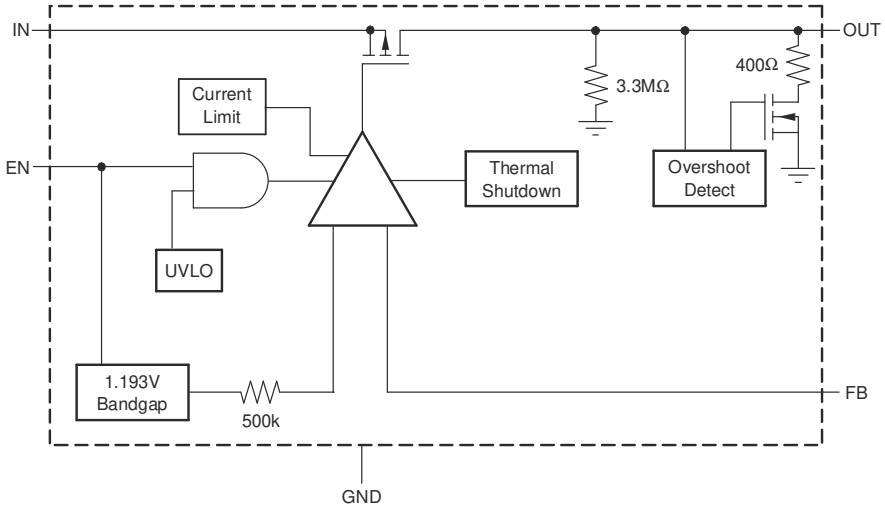



**图 7-2. Adjustable-Voltage Versions**

Copyright © 2022 Texas Instruments Incorporated

## 7.3 Feature Description

### 7.3.1 Internal Current Limit

The TPS799 internal current limit helps protect the regulator during fault conditions. In current limit mode, the output sources a fixed amount of current that is largely independent of the output voltage. For reliable operation, do not operate the device in a current-limit state for extended periods of time.

The PMOS pass element in the TPS799 has a built-in body diode that conducts current when the voltage at OUT exceeds the voltage at IN. This current is not limited; therefore, if extended reverse voltage operation is anticipated, external limiting may be required.

### 7.3.2 Shutdown

The enable pin (EN) is active high and is compatible with standard and low-voltage TTL-CMOS levels. When shutdown capability is not required, EN can be connected to IN.

### 7.3.3 Start Up

The TPS799 uses a start-up circuit to quickly charge the noise reduction capacitor, $C_{NR}$, if present (see the *Functional Block Diagrams*). This circuit allows for the combination of very low output noise and fast start-up times. The NR pin is high impedance so a low leakage $C_{NR}$ capacitor must be used; most ceramic capacitors are appropriate for this configuration.

For fastest start-up, apply $V_{IN}$ first, and then drive the enable pin (EN) high. If EN is tied to IN, start up is somewhat slower. The start-up switch is closed for approximately 135 μs. To ensure that $C_{NR}$ is fully charged during start-up, use a 0.01-μF or smaller capacitor.

### 7.3.4 Undervoltage Lockout (UVLO)

The TPS799 uses an undervoltage lockout circuit to keep the output shut off until internal circuitry is operating properly. The UVLO circuit has a deglitch feature so that undershoot transients are typically ignored on the input if these transients are less than 50 μs in duration.

## 7.4 Device Functional Modes

Driving EN over 1.2 V turns on the regulator. Driving EN below 0.4 V puts the regulator into shutdown mode, thus reducing the operating current to 150 nA, nominal.


Copyright © 2022 Texas Instruments Incorporated

# 8 Application and Implementation

**备注**

以下应用部分中的信息不属于 TI 器件规格的范围，TI 不担保其准确性和完整性。TI 的客 户应负责确定器件是否适用于其应用。客户应验证并测试其设计，以确保系统功能。

## 8.1 Application Information

The TPS799 LDO regulator provides high PSRR while maintaining ultra-low current consumption. The device also features inrush current protection and overshoot detection at the output.

## 8.2 Typical Application

图 8-1 and 图 8-2 show the basic circuit connections.

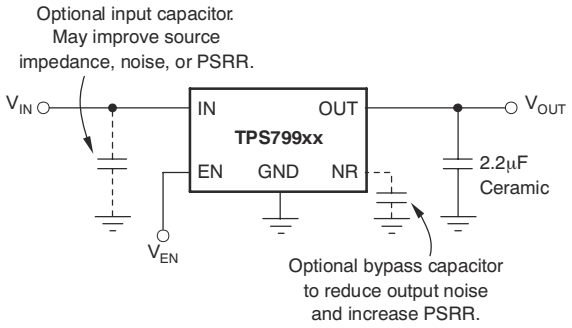



**图 8-1. Typical Application Circuit for Fixed Voltage Versions**

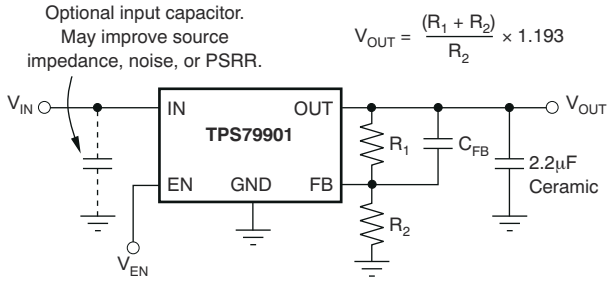



**图 8-2. Typical Application Circuit for Adjustable Voltage Version**

### 8.2.1 Design Requirements

Select the desired device based on the output voltage.

Provide an input supply with adequate headroom to account for dropout and output current to account for the GND terminal current, and power the load.

Copyright © 2022 Texas Instruments Incorporated

### 8.2.2 Detailed Design Procedure

#### *8.2.2.1 Input and Output Capacitor Requirements*

Although an input capacitor is not required for stability, good analog design practice is to connect a 0.1-μF to 1-μF low ESR capacitor across the input supply near the regulator. This capacitor counteracts reactive input sources and improves transient response, noise rejection, and ripple rejection. A higher-value capacitor may be necessary if large, fast rise-time load transients are anticipated, or if the device is located several inches from the power source. If source impedance is not sufficiently low, a 0.1-μF input capacitor may be necessary to ensure stability.

The TPS799 is designed to be stable with standard ceramic capacitors with values of 2.2 μF or greater. X5R- and X7R-type capacitors are best because they have minimal variation in value and ESR over temperature. Maximum ESR must be less than 1.0 Ω.

#### *8.2.2.2 Output Noise*

In most LDOs, the band gap is the dominant noise source. If a noise-reduction capacitor ($C_{NR}$) is used with the TPS799, the band gap does not contribute significantly to noise. Instead, noise is dominated by the output resistor divider and the error amplifier input. To minimize noise in a given application, use a 0.01-μF noise reduction capacitor. To further optimize noise, equivalent series resistance of the output capacitor can be set to approximately 0.2 Ω. This configuration maximizes phase margin in the control loop, reducing total output noise by up to 10%.

Noise can be referred to the feedback point; with $C_{NR}$ = 0.01 μF total noise is approximately given by 方程式 1:

$$V_N = \frac{10.5\mu V_{RMS}}{V} \times V_{OUT} \tag{1}$$

#### *8.2.2.3 Dropout Voltage*

The TPS799 uses a PMOS pass transistor to achieve a low dropout voltage. When ($V_{IN}$ – $V_{OUT}$) is less than the dropout voltage ($V_{DO}$), the PMOS pass device is in its linear region of operation and $r_{DS(on)}$ of the PMOS pass element is the input-to-output resistance. Because the PMOS device behaves like a resistor in dropout, $V_{DO}$ approximately scales with the output current.

As with any linear regulator, PSRR degrades as ($V_{IN}$ – $V_{OUT}$) approaches dropout. This effect is illustrated in 图 6-10 through 图 6-18 in the *Typical Characteristics* section.

#### *8.2.2.4 Transient Response*

As with any regulator, increasing the size of the output capacitor reduces over- and undershoot magnitude, but increases the duration of the transient response. The transient response of the TPS799 is enhanced by an active pulldown device that engages when the output overshoots by approximately 5% or more when the device is enabled. When enabled, the pulldown device behaves like a 350-Ω resistor to ground.

#### *8.2.2.5 Minimum Load*

The TPS799 is stable with no output load. To meet the specified accuracy, a minimum load of 500 μA is required. With loads less than 500 μA at junction temperatures near 125°C, the output can drift up enough to cause the output pulldown device to turn on. The output pulldown device limits voltage drift to 5% typically; however, ground current can increase by approximately 50 μA. In typical applications, the junction cannot reach high temperatures at light loads because there is no noticeable dissipated power. The specified ground current is then valid at no load in most applications.

#### *8.2.2.6 Feedback Capacitor Requirements (TPS79901 Only)*

The feedback capacitor, $C_{FB}$, shown in 图 8-2 is required for stability. For a parallel combination of $R_1$ and $R_2$ equal to 250 kΩ, any value from 3 pF to 1 nF can be used. Fixed voltage versions have an internal 30-pF feedback capacitor that is quick-charged at start up. The adjustable version does not have this quick-charge circuit, so use values below 5 pF to ensure fast start up; values above 47 pF can be used to implement an


Copyright © 2022 Texas Instruments Incorporated

output voltage soft-start. Larger value capacitors also improve noise slightly. The TPS79901 is stable in unity-gain configuration (OUT tied to FB) without $C_{FB}$.

### 8.2.3 Application Curve

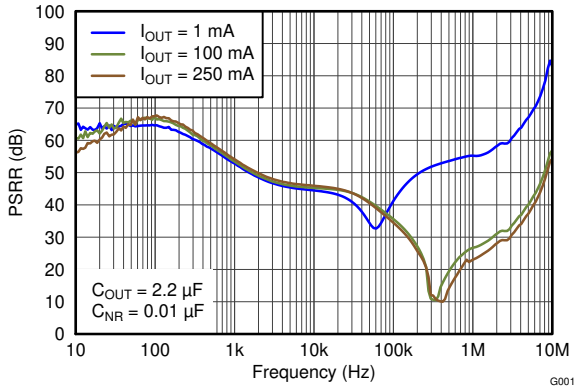



**图 8-3. Power-Supply Rejection Ratio vs Frequency**

## 8.3 What To Do and What Not To Do

Do place at least one 2.2-µF ceramic capacitor as close as possible to the OUT pin of the regulator.

Do not place the output capacitor more than 10 mm away from the regulator.

Do connect a 0.1- µ F to 1- µ F low equivalent series resistance (ESR) capacitor across the IN pin and GND input of the regulator.

Do not exceed the absolute maximum ratings.

# 9 Power Supply Recommendations

These devices are designed to operate from an input voltage supply range between 2.7 V and 6.5 V. The input voltage range provides adequate headroom in order for the device to have a regulated output. This input supply is well-regulated and stable. If the input supply is noisy, additional input capacitors with low ESR can help improve the output noise performance.

# 10 Layout

## 10.1 Layout Guidelines

### 10.1.1 Board Layout Recommendations to Improve PSRR and Noise Performance

To improve ac performance (such as PSRR, output noise, and transient response), design the board with separate ground planes for $V_{IN}$ and $V_{OUT}$, with each ground plane connected only at the GND pin of the device. In addition, connect the bypass capacitor directly to the GND pin of the device.

### 10.1.2 Thermal Information

#### *10.1.2.1 Thermal Protection*

Thermal protection disables the output when the junction temperature rises to approximately 165°C, allowing the device to cool. When the junction temperature cools to approximately 145°C the output circuitry is again enabled. Depending on power dissipation, thermal resistance, and ambient temperature, the thermal protection circuit may cycle on and off. This cycling limits the dissipation of the regulator, protecting it from damage resulting from overheating.

Any tendency to activate the thermal protection circuit indicates excessive power dissipation or an inadequate heat sink. For reliable operation, limit junction temperature to 125°C maximum. To estimate the margin of safety in a complete design (including heat sink), increase the ambient temperature until the thermal protection is triggered; use worst-case loads and signal conditions. For good reliability, thermal protection triggers at least

Copyright © 2022 Texas Instruments Incorporated

35°C above the maximum expected ambient condition of a particular application. This configuration produces a worst-case junction temperature of 125°C at the highest expected ambient temperature and worst-case load.

The internal protection circuitry of the TPS799 is designed to protect against overload conditions. This circuitry is not intended to replace proper heat sinking. Continuously running the device into thermal shutdown degrades device reliability.

#### *10.1.2.2 Power Dissipation*

The ability to remove heat from the die is different for each package type, presenting different considerations in the PCB layout. The PCB area around the device that is free of other components moves the head from the device to the ambient air. Performance data for JEDEC low- and high-K boards are given in the *Thermal Information* table near the front of this data sheet. Using heavier copper increases the effectiveness in removing heat from the device. The addition of plated through-holes to heat-dissipating layers also improves heat-sink effectiveness.

Power dissipation depends on input voltage and load conditions. Power dissipation is equal to the product of the output current times the voltage drop across the output pass element, as shown in 方程式 2:

$$P_D = (V_{IN} - V_{OUT}) \cdot I_{OUT} \quad (2)$$

#### *10.1.2.3 Package Mounting*

Solder pad footprint recommendations for the TPS799 are available from the TI's website at www.ti.com.

### 10.2 Layout Example

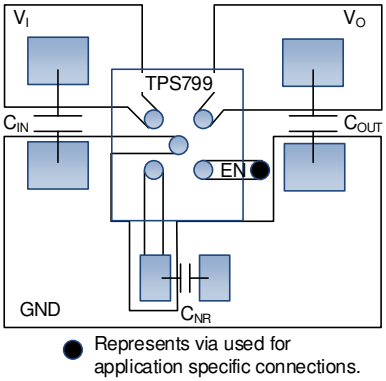



**图 10-1. Layout Example**


Copyright © 2022 Texas Instruments Incorporated

# 11 Device and Documentation Support

## 11.1 Device Support

### 11.1.1 Development Support

#### *11.1.1.1 Evaluation Modules*

An evaluation module (EVM) is available to assist in the initial circuit performance evaluation using the TPS799. This EVM, the TPS799 evaluation module, can be requested at the Texas Instruments web site through the product folders or purchased directly from the TI eStore.

#### *11.1.1.2 Spice Models*

Computer simulation of circuit performance using SPICE is often useful when analyzing the performance of analog circuits and systems. A SPICE model for the TPS799 is available through the product folders under simulation models.

### 11.1.2 Device Nomenclature

**表 11-1. Device Nomenclature(1)**

| PRODUCT | $V_{OUT}$ |
|---|---|
| TPS799**xx(x)** ***yyy z*** | **xx(x)** is nominal output voltage (for example, 28 = 2.8 V, 285 = 2.85 V, 01 = Adjustable).<br>**yyy** is package designator.<br>**z** is package quantity. |

(1) For the most current package and ordering information see the Package Option Addendum at the end of this document, or visit the device product folder at www.ti.com.

## 11.2 Documentation Support

### 11.2.1 Related Documentation

For related documentation, see the following:

- Texas Instruments, *Using New Thermal Metrics* application report
- Texas Instruments, *Semiconductor and IC Package Thermal Metrics* application report
- Texas Instruments, *TPS799xxEVM-105* user's guide

## 11.3 接收文档更新通知

要接收文档更新通知，请导航至 ti.com 上的器件产品文件夹。点击 *订阅更新* 进行注册，即可每周接收产品信息更改摘要。有关更改的详细信息，请查看任何已修订文档中包含的修订历史记录。

## 11.4 支持资源

TI E2E™ 支持论坛是工程师的重要参考资料，可直接从专家获得快速、经过验证的解答和设计帮助。搜索现有解答或提出自己的问题可获得所需的快速设计帮助。

链接的内容由各个贡献者“按原样”提供。这些内容并不构成 TI 技术规范，并且不一定反映 TI 的观点；请参阅 TI 的《使用条款》。

Copyright © 2022 Texas Instruments Incorporated

### 11.5 Trademarks

TI E2E™ is a trademark of Texas Instruments.
蓝牙® is a registered trademark of Bluetooth SIG, Inc.
所有商标均为其各自所有者的财产。

### 11.6 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

### 11.7 术语表

TI 术语表　　本术语表列出并解释了术语、首字母缩略词和定义。

## 12 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.


Copyright © 2022 Texas Instruments Incorporated

## PACKAGING INFORMATION

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79901DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DDCR1G4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DDCR1G4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79901DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DDCTG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79901DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DRVRG4 | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWT |
| TPS79901YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | E9 |
| TPS79901YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | E9 |
| TPS79901YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | E9 |
| TPS79901YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | E9 |
| TPS799125YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | YZ |
| TPS799125YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | YZ |
| TPS799125YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | YZ |
| TPS799125YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | YZ |
| TPS79912DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79912DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912DRVTG4 | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CCF |
| TPS79912YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F8 |
| TPS79912YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F8 |
| TPS79912YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F8 |
| TPS79912YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F8 |
| TPS79913DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BUJ |
| TPS79913DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BUJ |
| TPS79913DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BUJ |
| TPS79913DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BUJ |
| TPS79913YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F9 |
| TPS79913YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F9 |
| TPS79915DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWU |
| TPS79915DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWU |
| TPS79915DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWU |
| TPS79915DDCRG4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWU |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79915DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWU |
| TPS79915DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWU |
| TPS79915DDCTG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79915YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EA |
| TPS79915YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EA |
| TPS79915YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EA |
| TPS79915YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EA |
| TPS799185DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGP |
| TPS799185DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGP |
| TPS799185DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGP |
| TPS799185DDCRG4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGP |
| TPS799185DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGP |
| TPS799185DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGP |
| TPS799185YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ZA |
| TPS799185YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ZA |
| TPS799185YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ZA |
| TPS799185YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ZA |
| TPS79918DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DDCR1G4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DDCR1G4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79918DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79918DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DDCTG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79918DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWV |
| TPS79918YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EB |
| TPS79918YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EB |
| TPS79918YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EB |
| TPS79918YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EB |
| TPS799195DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BTP |
| TPS799195DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BTP |
| TPS799195DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BTP |
| TPS799195DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BTP |
| TPS799195YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | AO |
| TPS799195YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | AO |
| TPS799195YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | AO |
| TPS799195YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | AO |
| TPS79919YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F6 |
| TPS79919YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F6 |
| TPS79920YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | GA |
| TPS79920YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | GA |
| TPS79921YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | G7 |
| TPS79921YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | G7 |
| TPS79925DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWW |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79925DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWW |
| TPS79925DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWW |
| TPS79925DDCRG4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWW |
| TPS79925DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWW |
| TPS79925DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWW |
| TPS79925YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EC |
| TPS79925YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EC |
| TPS79925YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EC |
| TPS79925YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EC |
| TPS79926YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F3 |
| TPS79926YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F3 |
| TPS79926YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F3 |
| TPS79926YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F3 |
| TPS79927DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BWE |
| TPS79927DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BWE |
| TPS79927DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BWE |
| TPS79927DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BWE |
| TPS79927DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BPM |
| TPS79927DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BPM |
| TPS79927DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BPM |
| TPS79927DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BPM |
| TPS79927YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F5 |
| TPS79927YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | F5 |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS799285DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXY |
| TPS799285DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXY |
| TPS799285DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXY |
| TPS799285DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXY |
| TPS799285DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BST |
| TPS799285DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BST |
| TPS799285DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BST |
| TPS799285DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | BST |
| TPS799285YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EE |
| TPS799285YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EE |
| TPS79928DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AWX |
| TPS79928YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ED |
| TPS79928YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ED |
| TPS79928YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ED |
| TPS79928YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | ED |
| TPS79930DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXZ |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79930DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXZ |
| TPS79930DDCR1G4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXZ |
| TPS79930DDCR1G4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXZ |
| TPS79930DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79930DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXZ |
| TPS79930DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXZ |
| TPS79930DDCTG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79930YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EF |
| TPS79930YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EF |
| TPS79930YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EF |
| TPS79930YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EF |
| TPS799315DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGQ |
| TPS799315DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGQ |
| TPS799315DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGQ |
| TPS799315DDCRG4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGQ |
| TPS799315DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGQ |
| TPS799315DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CGQ |
| TPS799315YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | GP |
| TPS799315YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | GP |
| TPS799315YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | GP |
| TPS799315YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | GP |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79932YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | (F4, FY) |
| TPS79932YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | (F4, FY) |
| TPS79933DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DDCR1G4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DDCR1G4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79933DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DDCTG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79933DRVR | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DRVR.B | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DRVRG4 | Active | Production | WSON (DRV) \| 6 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DRVT | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DRVT.B | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933DRVTG4 | Active | Production | WSON (DRV) \| 6 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | AXX |
| TPS79933YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EG |
| TPS79933YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EG |
| TPS79933YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EG |
| TPS79933YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | EG |
| TPS79942DDCR | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CJQ |
| TPS79942DDCR.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CJQ |
| TPS79942DDCR1G4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CJQ |

| Orderable part number | Status (1) | Material type (2) | Package \| Pins | Package qty \| Carrier | RoHS (3) | Lead finish/ Ball material (4) | MSL rating/ Peak reflow (5) | Op temp (°C) | Part marking (6) |
|---|---|---|---|---|---|---|---|---|---|
| TPS79942DDCR1G4.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CJQ |
| TPS79942DDCRG4 | Active | Production | SOT-23-THIN (DDC) \| 5 | 3000 \| LARGE T&R | - | Call TI | Call TI | -40 to 125 | |
| TPS79942DDCT | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CJQ |
| TPS79942DDCT.B | Active | Production | SOT-23-THIN (DDC) \| 5 | 250 \| SMALL T&R | Yes | NIPDAU | Level-1-260C-UNLIM | -40 to 125 | CJQ |
| TPS79945YZUR | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | FK |
| TPS79945YZUR.B | Active | Production | DSBGA (YZU) \| 5 | 3000 \| LARGE T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | FK |
| TPS79945YZUT | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | FK |
| TPS79945YZUT.B | Active | Production | DSBGA (YZU) \| 5 | 250 \| SMALL T&R | Yes | SNAGCU | Level-1-260C-UNLIM | -40 to 125 | FK |

(1) **Status:** For more details on status, see our product life cycle.

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

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

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

**Important Information and Disclaimer:**The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative

and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF TPS799 :**

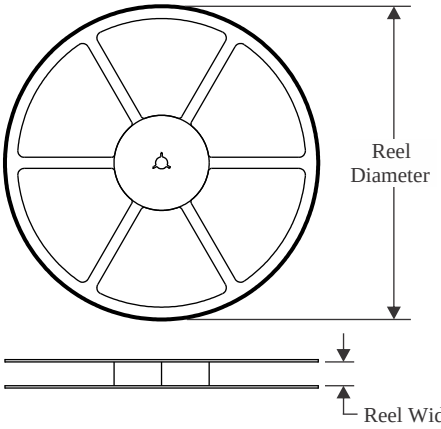
- Automotive : TPS799-Q1

NOTE: Qualified Version Definitions:

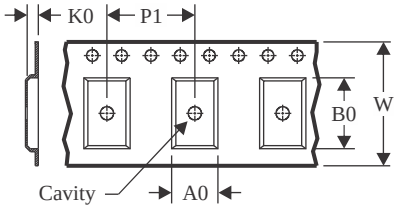
- Automotive - Q100 devices qualified for high-reliability automotive applications targeting zero defects

## TAPE AND REEL INFORMATION

**REEL DIMENSIONS**

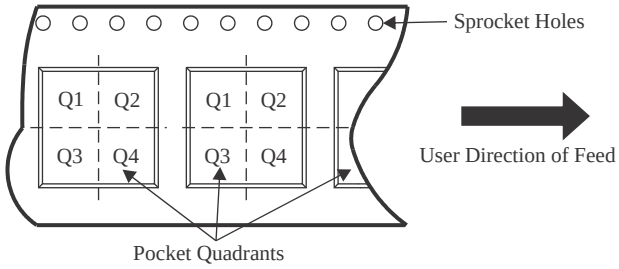



**TAPE DIMENSIONS**




| | |
|---|---|
| A0 | Dimension designed to accommodate the component width |
| B0 | Dimension designed to accommodate the component length |
| K0 | Dimension designed to accommodate the component thickness |
| W | Overall width of the carrier tape |
| P1 | Pitch between successive cavity centers |

**QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE**




*All dimensions are nominal

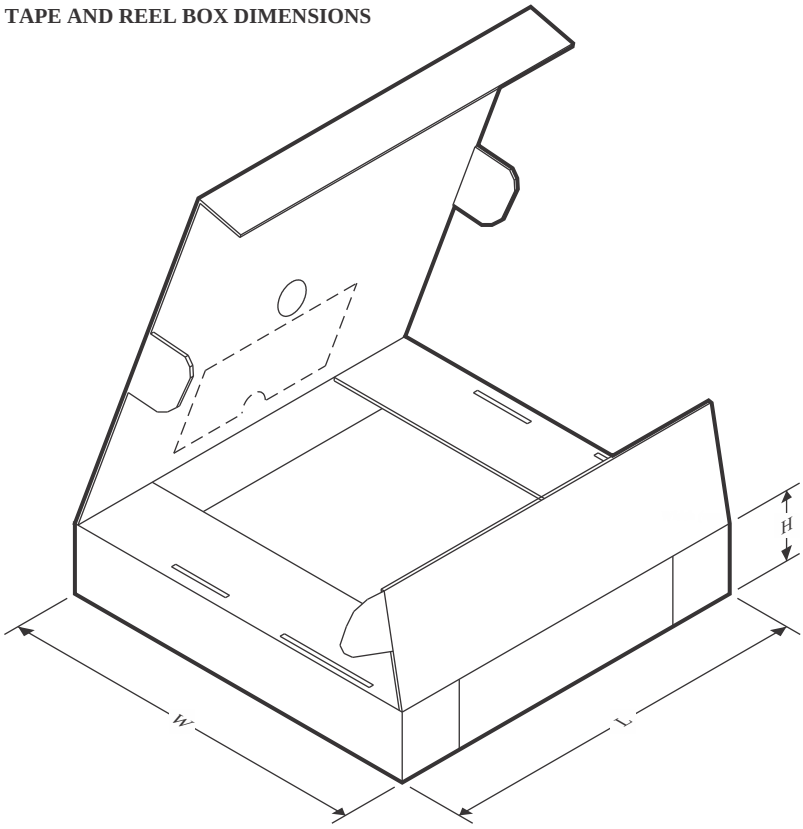
| Device | Package Type | Package Drawing | Pins | SPQ | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPS79901DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79901DDCR | SOT-23-THIN | DDC | 5 | 3000 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79901DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79901DDCT | SOT-23-THIN | DDC | 5 | 250 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79901DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79901DRVT | WSON | DRV | 6 | 250 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS79901YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79901YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799125YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799125YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79912DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPS79912DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79912DRVT | WSON | DRV | 6 | 250 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS79912YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79912YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79913DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79913DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79913YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79915DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79915DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79915DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79915YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79915YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799185DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799185DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799185DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799185YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799185YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79918DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79918DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79918DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79918YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79918YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799195DRVR | WSON | DRV | 6 | 3000 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS799195DRVT | WSON | DRV | 6 | 250 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS799195YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799195YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79919YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79920YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79921YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79925DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79925DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPS79925DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79925YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79925YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79926YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79926YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79927DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79927DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79927DRVT | WSON | DRV | 6 | 250 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS79927YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799285DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799285DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799285DRVR | WSON | DRV | 6 | 3000 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS799285DRVT | WSON | DRV | 6 | 250 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS79928DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79928DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79928YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79928YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79930DDCR | SOT-23-THIN | DDC | 5 | 3000 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79930DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79930DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79930DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79930YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79930YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799315DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799315DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799315DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS799315YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS799315YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79932YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79933DDCR | SOT-23-THIN | DDC | 5 | 3000 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TPS79933DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79933DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79933DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79933DDCT | SOT-23-THIN | DDC | 5 | 250 | 180.0 | 8.4 | 3.1 | 3.05 | 1.1 | 4.0 | 8.0 | Q3 |
| TPS79933DRVT | WSON | DRV | 6 | 250 | 179.0 | 8.4 | 2.2 | 2.2 | 1.2 | 4.0 | 8.0 | Q2 |
| TPS79933YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79933YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79942DDCR | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79942DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79942DDCT | SOT-23-THIN | DDC | 5 | 250 | 179.0 | 8.4 | 3.2 | 3.2 | 1.4 | 4.0 | 8.0 | Q3 |
| TPS79945YZUR | DSBGA | YZU | 5 | 3000 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |
| TPS79945YZUT | DSBGA | YZU | 5 | 250 | 180.0 | 8.4 | 1.07 | 1.42 | 0.74 | 4.0 | 8.0 | Q1 |

TAPE AND REEL BOX DIMENSIONS




*All dimensions are nominal

| Device | Package Type | Package Drawing | Pins | SPQ | Length (mm) | Width (mm) | Height (mm) |
|---|---|---|---|---|---|---|---|
| TPS79901DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79901DDCR | SOT-23-THIN | DDC | 5 | 3000 | 183.0 | 183.0 | 20.0 |
| TPS79901DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 183.0 | 183.0 | 20.0 |
| TPS79901DDCT | SOT-23-THIN | DDC | 5 | 250 | 183.0 | 183.0 | 20.0 |
| TPS79901DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79901DRVT | WSON | DRV | 6 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79901YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79901YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS799125YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS799125YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79912DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79912DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79912DRVT | WSON | DRV | 6 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79912YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79912YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79913DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79913DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79913YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |

| Device | Package Type | Package Drawing | Pins | SPQ | Length (mm) | Width (mm) | Height (mm) |
|---|---|---|---|---|---|---|---|
| TPS79915DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79915DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79915DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79915YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79915YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS799185DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS799185DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS799185DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS799185YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS799185YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79918DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79918DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79918DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79918YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79918YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS799195DRVR | WSON | DRV | 6 | 3000 | 203.0 | 203.0 | 35.0 |
| TPS799195DRVT | WSON | DRV | 6 | 250 | 203.0 | 203.0 | 35.0 |
| TPS799195YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS799195YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79919YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79920YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79921YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79925DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79925DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79925DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79925YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79925YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79926YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79926YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79927DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79927DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79927DRVT | WSON | DRV | 6 | 250 | 203.0 | 203.0 | 35.0 |
| TPS79927YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS799285DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS799285DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS799285DRVR | WSON | DRV | 6 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS799285DRVT | WSON | DRV | 6 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79928DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79928DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79928YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79928YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79930DDCR | SOT-23-THIN | DDC | 5 | 3000 | 183.0 | 183.0 | 20.0 |
| TPS79930DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |

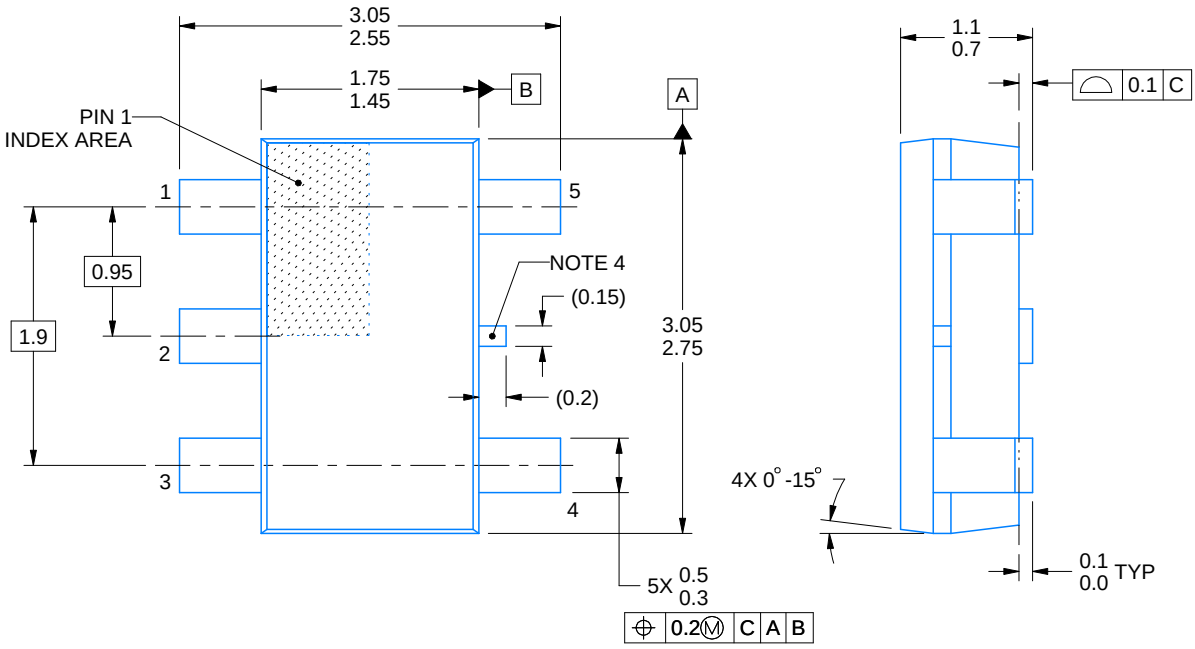
| Device | Package Type | Package Drawing | Pins | SPQ | Length (mm) | Width (mm) | Height (mm) |
|---|---|---|---|---|---|---|---|
| TPS79930DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 183.0 | 183.0 | 20.0 |
| TPS79930DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79930YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79930YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS799315DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS799315DDCRG4 | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS799315DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS799315YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS799315YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79932YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79933DDCR | SOT-23-THIN | DDC | 5 | 3000 | 183.0 | 183.0 | 20.0 |
| TPS79933DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79933DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 183.0 | 183.0 | 20.0 |
| TPS79933DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79933DDCT | SOT-23-THIN | DDC | 5 | 250 | 183.0 | 183.0 | 20.0 |
| TPS79933DRVT | WSON | DRV | 6 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79933YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79933YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |
| TPS79942DDCR | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79942DDCR1G4 | SOT-23-THIN | DDC | 5 | 3000 | 200.0 | 183.0 | 25.0 |
| TPS79942DDCT | SOT-23-THIN | DDC | 5 | 250 | 200.0 | 183.0 | 25.0 |
| TPS79945YZUR | DSBGA | YZU | 5 | 3000 | 182.0 | 182.0 | 20.0 |
| TPS79945YZUT | DSBGA | YZU | 5 | 250 | 182.0 | 182.0 | 20.0 |

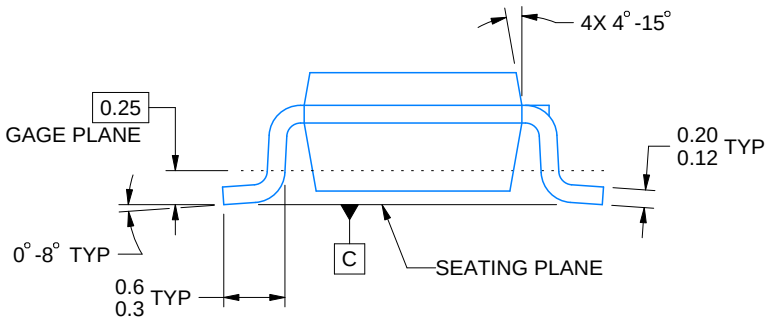
# PACKAGE OUTLINE

## DDC0005A

## SOT-23 - 1.1 max height

SMALL OUTLINE TRANSISTOR

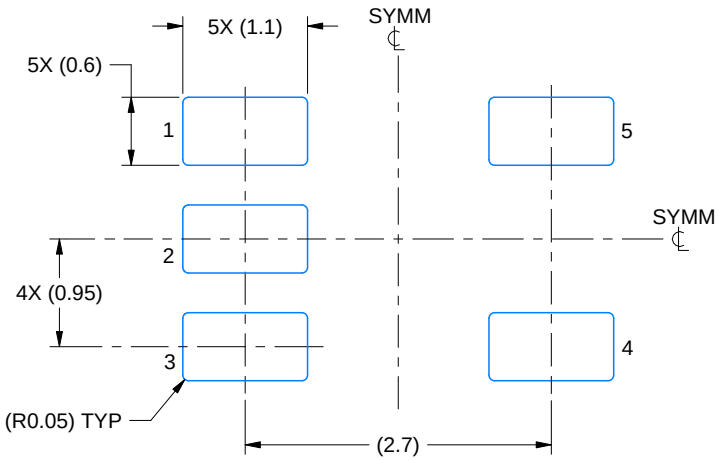


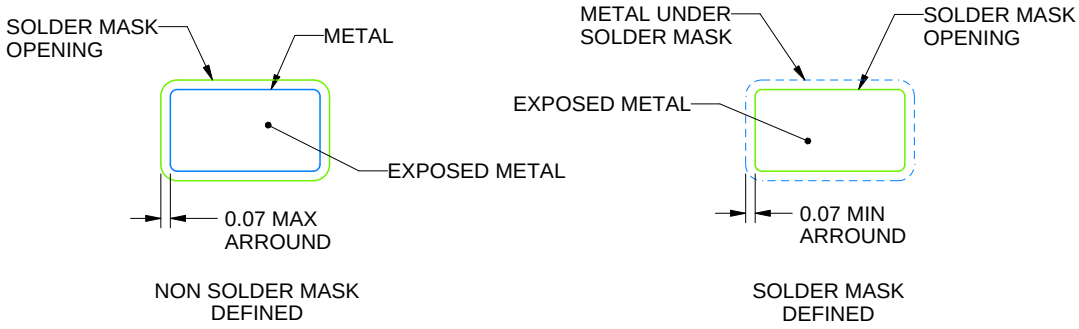

4220752/C 08/2024

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. Reference JEDEC MO-193.
4. Support pin may differ or may not be present.




LAND PATTERN EXAMPLE
EXPLOSED METAL SHOWN
SCALE:15X

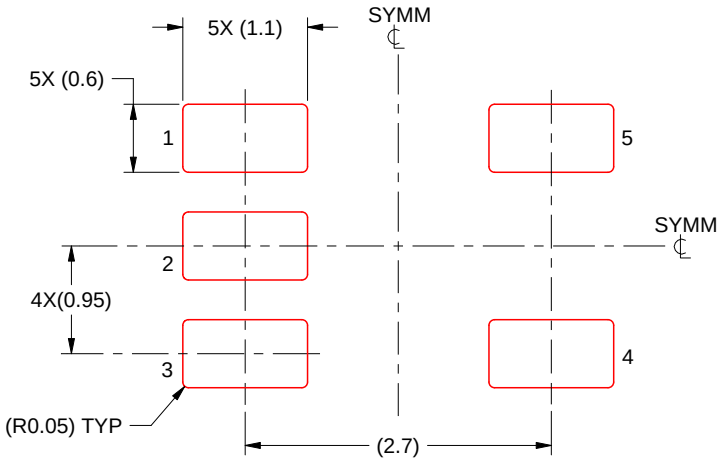



SOLDERMASK DETAILS

4220752/C 08/2024

NOTES: (continued)

4. Publication IPC-7351 may have alternate designs.
5. Solder mask tolerances between and around signal pads can vary based on board fabrication site.




SOLDER PASTE EXAMPLE
BASED ON 0.125 THICK STENCIL
SCALE:15X

4220752/C 08/2024

NOTES: (continued)

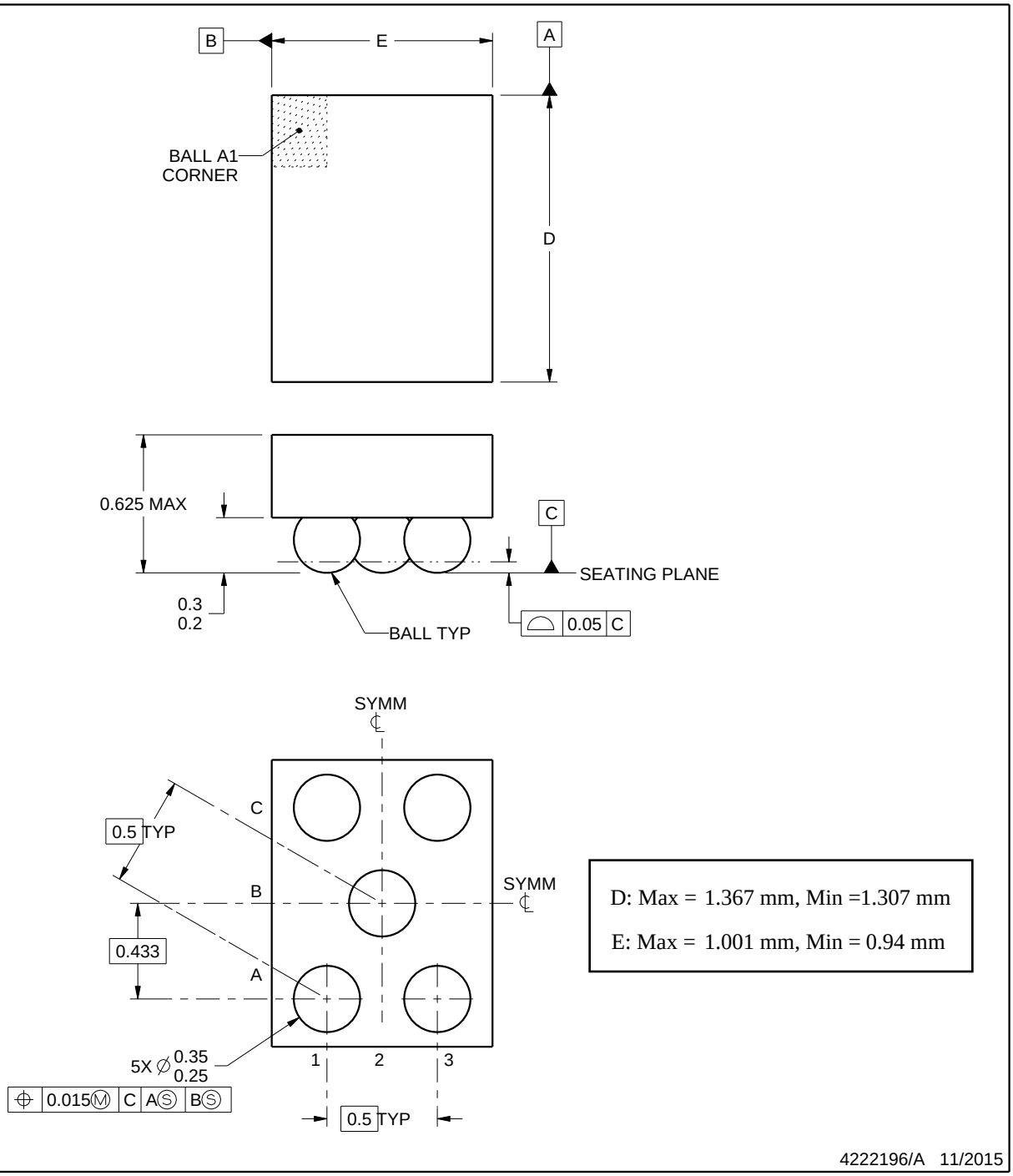
6. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
7. Board assembly site may have different recommendations for stencil design.

# PACKAGE OUTLINE

## YZU0005

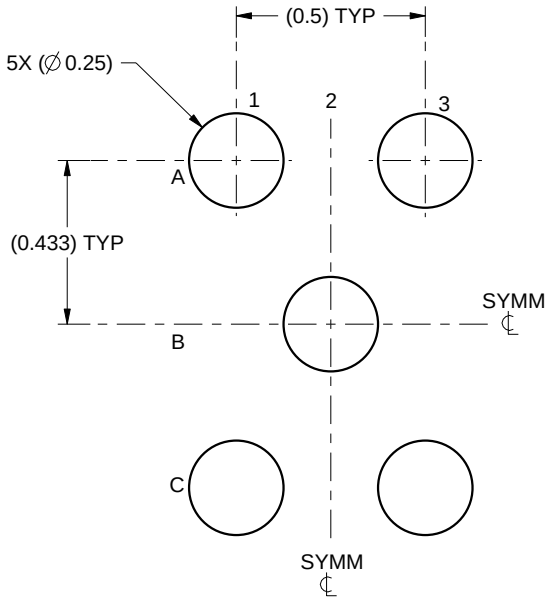
## DSBGA - 0.625 mm max height

DIE SIZE BALL GRID ARRAY

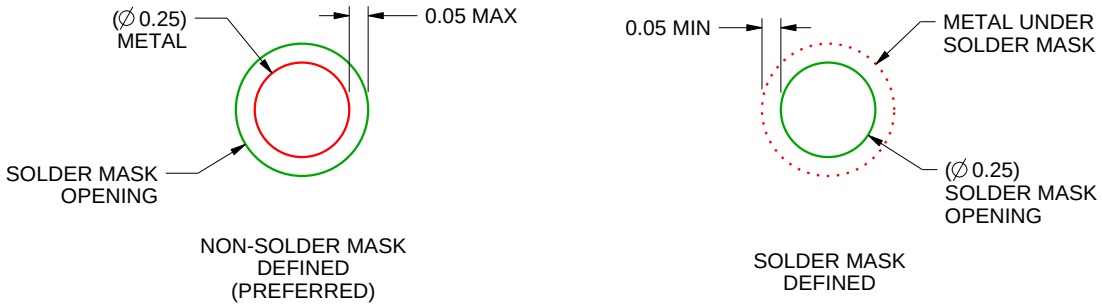



NOTES:

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.




LAND PATTERN EXAMPLE
SCALE:50X




SOLDER MASK DETAILS
NOT TO SCALE

4222196/A 11/2015

NOTES: (continued)

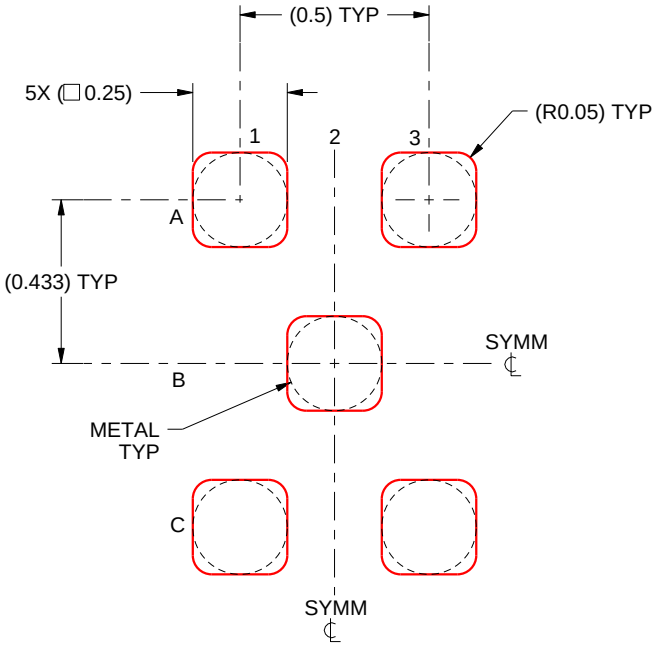
3. Final dimensions may vary due to manufacturing tolerance considerations and also routing constraints.
Refer to Texas Instruments Literature No. SNVA009 (www.ti.com/lit/snva009).

# EXAMPLE STENCIL DESIGN

## YZU0005

## DSBGA - 0.625 mm max height

DIE SIZE BALL GRID ARRAY




SOLDER PASTE EXAMPLE
BASED ON 0.1 mm THICK STENCIL
SCALE:50X

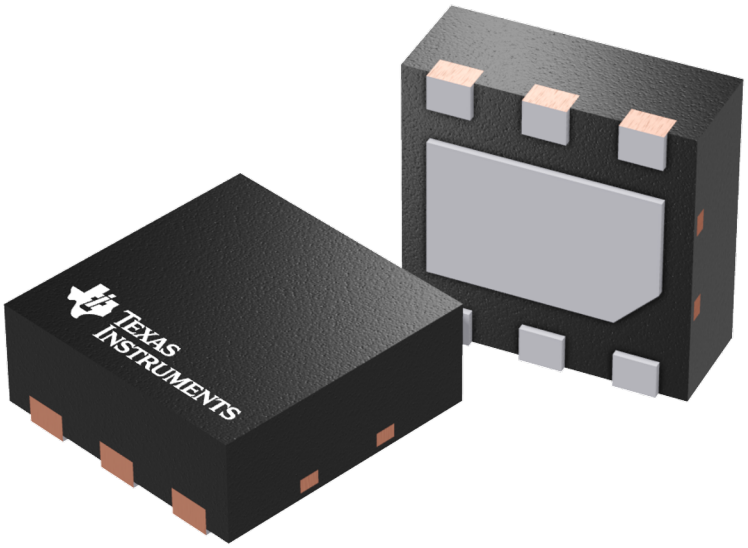
4222196/A 11/2015

NOTES: (continued)

4. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release.

# DRV 6 WSON - 0.8 mm max height

PLASTIC SMALL OUTLINE - NO LEAD



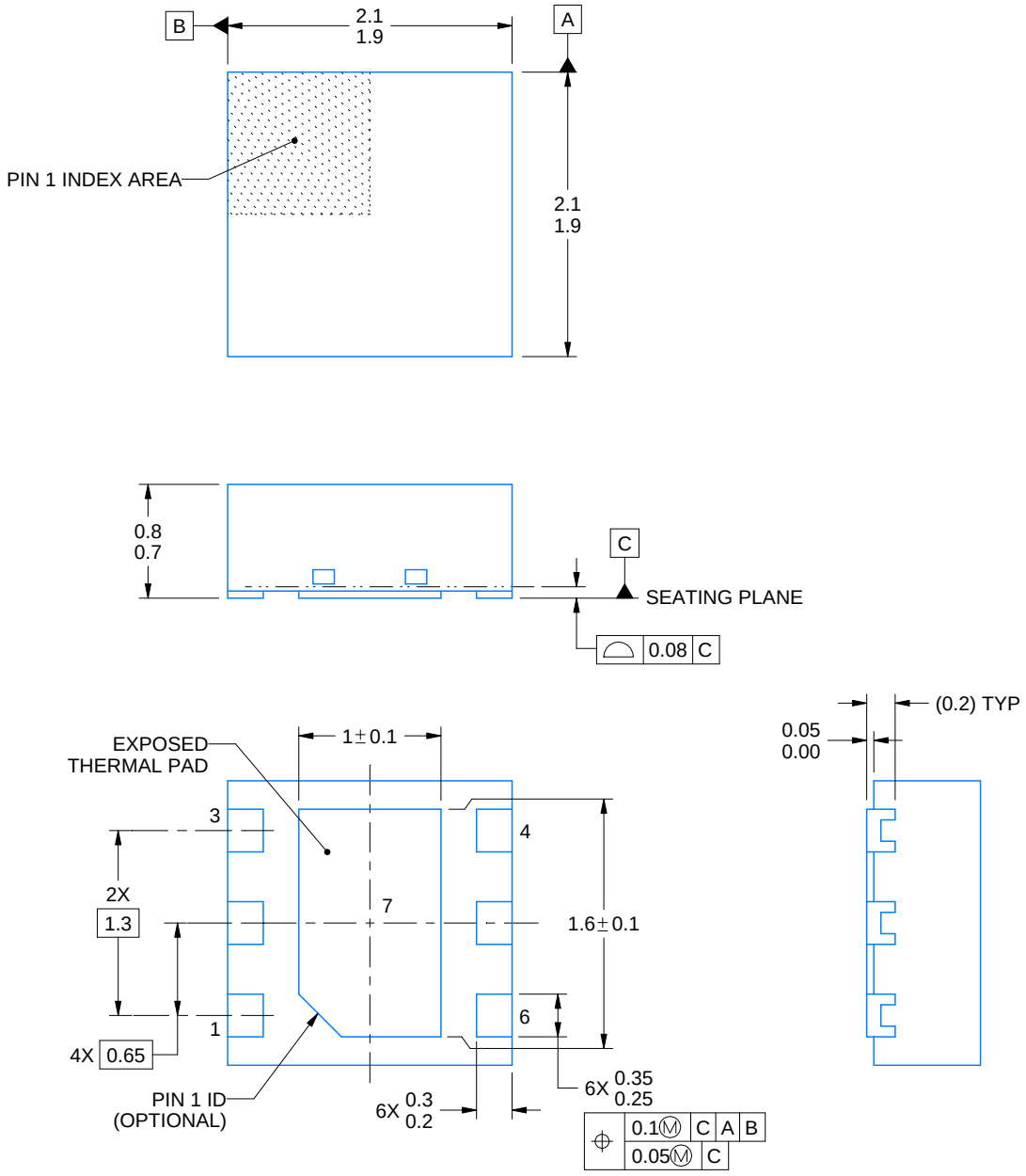

Images above are just a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

# DRV0006D

# PACKAGE OUTLINE

## WSON - 0.8 mm max height

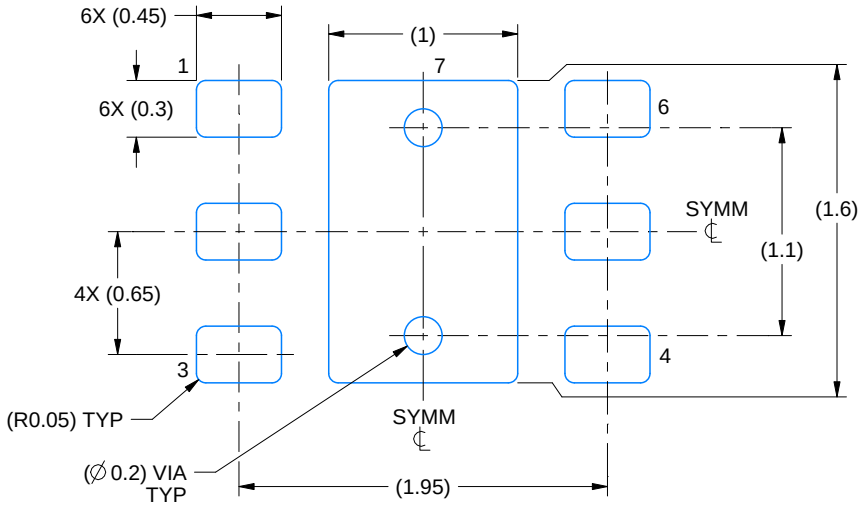
PLASTIC SMALL OUTLINE - NO LEAD



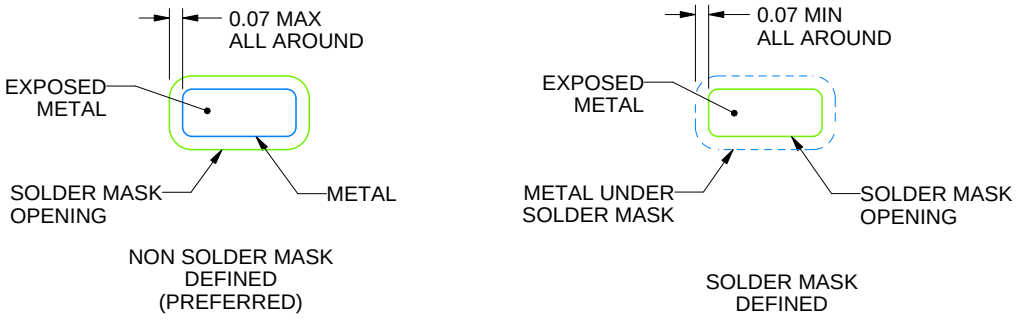

4225563/A 12/2019

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.




LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE:25X

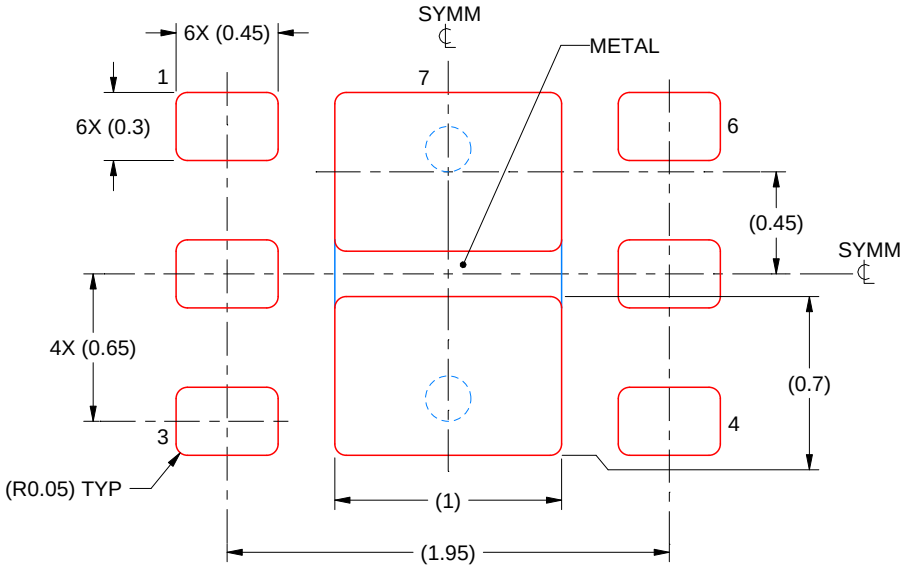



SOLDER MASK DETAILS

4225563/A 12/2019

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/slua271).
5. Vias are optional depending on application, refer to device data sheet. If some or all are implemented, recommended via locations are shown.




SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL

EXPOSED PAD #7
88% PRINTED SOLDER COVERAGE BY AREA UNDER PACKAGE
SCALE:30X

4225563/A 12/2019

NOTES: (continued)

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

# 重要通知和免责声明

TI“按原样”提供技术和可靠性数据（包括数据表）、设计资源（包括参考设计）、应用或其他设计建议、网络工具、安全信息和其他资源，不保证没有瑕疵且不做出任何明示或暗示的担保，包括但不限于对适销性、与某特定用途的适用性或不侵犯任何第三方知识产权的暗示担保。

这些资源可供使用 TI 产品进行设计的熟练开发人员使用。您将自行承担以下全部责任：(1) 针对您的应用选择合适的 TI 产品，(2) 设计、验证并测试您的应用，(3) 确保您的应用满足相应标准以及任何其他安全、安保法规或其他要求。

这些资源如有变更，恕不另行通知。TI 授权您仅可将这些资源用于研发本资源所述的 TI 产品的相关应用。严禁以其他方式对这些资源进行复制或展示。您无权使用任何其他 TI 知识产权或任何第三方知识产权。对于因您对这些资源的使用而对 TI 及其代表造成的任何索赔、损害、成本、损失和债务，您将全额赔偿，TI 对此概不负责。

TI 提供的产品受 TI 销售条款)、TI 通用质量指南 或 ti.com 上其他适用条款或 TI 产品随附的其他适用条款的约束。TI 提供这些资源并不会扩展或以其他方式更改 TI 针对 TI 产品发布的适用的担保或担保免责声明。 除非德州仪器 (TI) 明确将某产品指定为定制产品或客户特定产品，否则其产品均为按确定价格收入目录的标准通用器件。

TI 反对并拒绝您可能提出的任何其他或不同的条款。

版权所有 © 2026，德州仪器 (TI) 公司

最后更新日期：2025 年 10 月