LOW-DROPOUT LINEAR REGULATOR

Check for Samples: TPS71525-DIE

FEATURES

- **24-V Maximum Input Voltage**
- **Low Quiescent Current**
- **Low-Dropout Regulator**
- **Available in 2.5 V**
- **Minimum/Maximum Specified Current Limit**

APPLICATIONS

- **Ultra-Low Power Microcontrollers**
- **Cellular/Cordless Handsets**
- **Portable/Battery-Powered Equipment**

DESCRIPTION

The TPS71525 low-dropout (LDO) voltage regulator offers the benefits of high input voltage, low-dropout voltage, low-power operation, and miniaturized packaging. The TPS71525, which operates over an input range of 2.5 V to 24 V, is stable with any capacitor (≥ 0.47 µF). The low-dropout voltage and low quiescent current allow operations at extremely low power levels. Therefore, the TPS71525 is ideal for powering battery management ICs. Specifically, since the TPS71525 is enabled as soon as the applied voltage reaches the minimum input voltage, the output is quickly available to power continuously operating battery charging ICs.

The usual PNP pass transistor has been replaced by a PMOS pass element. Because the PMOS pass element behaves as a low-value resistor, the low-dropout voltage, typically 415 mV at 50 mA of load current, is directly proportional to the load current. The low quiescent current is stable over the entire range of output load current.

ORDERING INFORMATION(1)

PRODUCT	PACKAGE DESIGNATOR	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
TPS71525	TD(2)	Bare die in waffle pack	TPS71525TDB1	400
			TPS71525TDB2	10

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.

(2) Processing is per the Texas Instruments commercial production baseline and is in compliance with the Texas Instruments Quality Control System in effect at the time of manufacture. Electrical screening consists of DC parametric and functional testing at room temperature only. Unless otherwise specified by Texas Instruments AC performance and performance over temperature is not warranted. Visual Inspection is performed in accordance with MIL-STD-883 Test Method 2010 Condition B at 75X minimum.

Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of the Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

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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.

BARE DIE INFORMATION

DIE THICKNESS	BACKSIDE FINISH	BACKSIDE POTENTIAL	BOND PAD METALLIZATION COMPOSITION	BOND PAD THICKNESS
15 mils.	Silicon with backgrind	Floating	Aluminium Pad (TiW/AlSiCu (0.5%))	600 nm

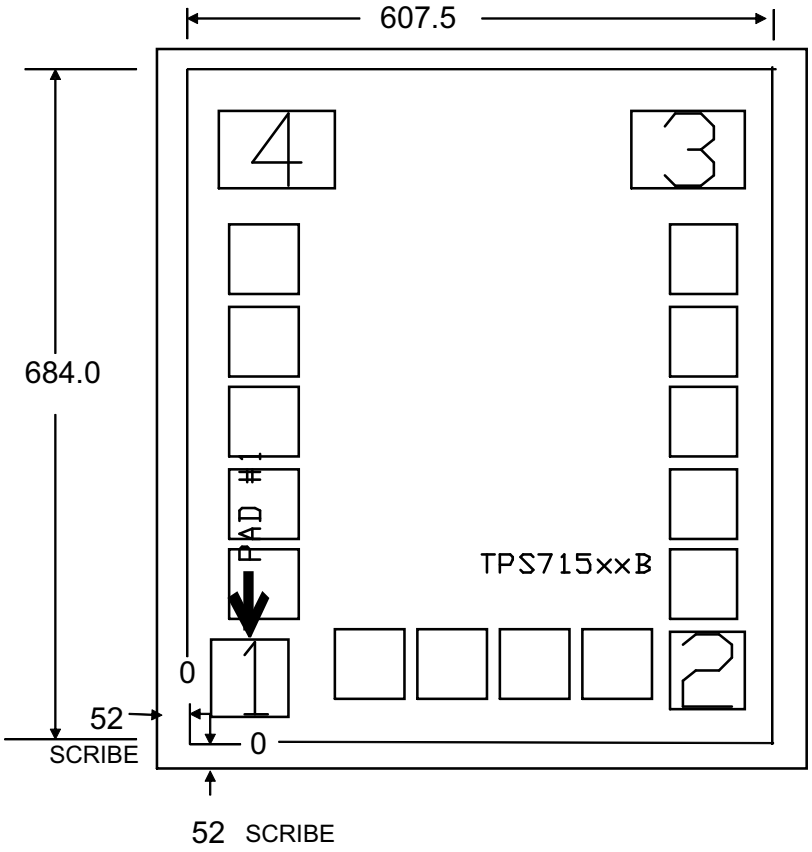


Table 1. Bond Pad Coordinates in Microns(1)

DESCRIPTION	PAD NUMBER	X MIN	Y MIN	X MAX	Y MAX
GND	1	6.03	5.40	90.09	89.46
	2	507.78	15.30	591.84	99.36
OUT	3	465.93	583.74	591.84	667.80
VIN	4	15.39	583.74	141.30	667.80

(1) Substrate is to float.

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PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TPS71525TDB1	LIFEBUY			0	400	RoHS & Green	Call TI	N / A for Pkg Type	0 to 70		
TPS71525TDB2	LIFEBUY			0	10	RoHS & Green	Call TI	N / A for Pkg Type	0 to 70		

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".
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(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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

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

(6) Lead finish/Ball material - Orderable Devices 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.

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