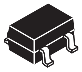
TEXAS INSTRUMENTS



TPS3800-xx
TPS3801-xx
TPS3802-xx

ULTRA-SMALL SUPPLY VOLTAGE SUPERVISORS

Check for Samples: TPS3800-xx, TPS3801-xx, TPS3802-xx

FEATURES

- **Small, 5-Pin SC-70 (SOT-323) Package**
- **Supply Current of 9 μA**
- **Power-On Reset Generator With Fixed Delay Time**
  - **TPS3800 = 100 ms**
  - **TPS3801 = 200 ms**
  - **TPS3802 = 400 ms**
- **Precision Supply Voltage Monitor 1.8 V, 2.5 V, 2.7 V, 3 V, 3.3 V, 5 V, and Adjustable**
- **Manual Reset Input (Except TPS3801-01)**
- **Temperature Range: –40°C to +85°C**

APPLICATIONS

- **Applications Using DSPs, Microcontrollers, or Microprocessors**
- **Wireless Communication Systems**
- **Portable/Battery-Powered Equipment**
- **Programmable Controls**
- **Intelligent Instruments**
- **Industrial Equipment**
- **Notebook/Desktop Computers**
- **Automotive Systems**

DESCRIPTION

The TPS380x family of supervisory circuits monitor supply voltages to provide circuit initialization and timing supervision, primarily for DSPs and other processor-based systems.

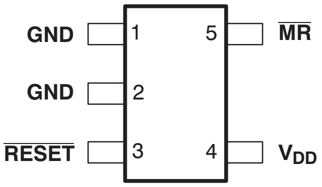
These devices assert a push-pull $\overline{\text{RESET}}$ signal when the SENSE (adjustable version) or V_{DD} (fixed version) drops below a preset threshold. The $\overline{\text{RESET}}$ output remains asserted for the factory programmed delay time after the SENSE or V_{DD} return above its threshold.

The TPS380x devices, except the TPS3801-01, incorporate a manual reset input ($\overline{\text{MR}}$). A low level at $\overline{\text{MR}}$ causes $\overline{\text{RESET}}$ to become active.

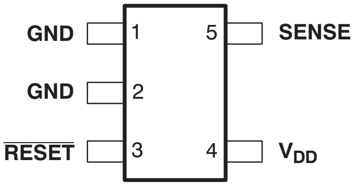
The TPS380x uses a precision reference to achieve an overall threshold accuracy of 2%—2.5%. These devices are available in a 5-pin SC-70 package, which is only about half the size of a 5-pin SOT-23 package.

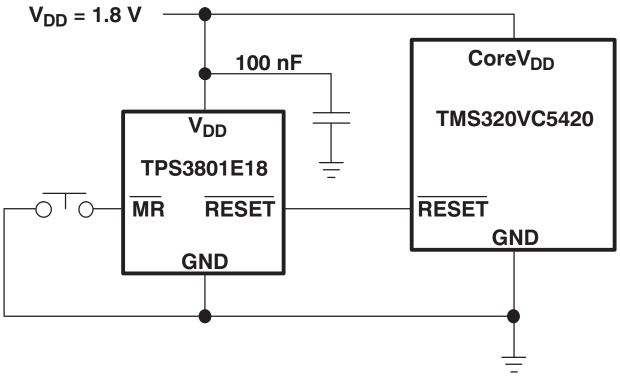
The TPS380x devices are fully specified over a temperature range of –40°C to +85°C.

TPS380x . . . DCK PACKAGE
(TOP VIEW)



TPS3801–01 . . . DCK PACKAGE
(TOP VIEW)





These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

AVAILABLE OPTIONS(1)

T_A	DEVICE NAME	THRESHOLD VOLTAGE	TYP DELAY TIME	MARKING
–40°C to 85°C	TPS3801-01DCK	Adjustable (V_{ref} = 1.14 V)	200 ms	ARF
	TPS3801E18DCK	1.71 V	200 ms	ARE
	TPS3801J25DCK	2.25 V	200 ms	NJA
	TPS3800G27DCK	2.5 V	95 ms	ARI
	TPS3801L30DCK	2.64 V	200 ms	NPA
	TPS3801K33DCK	2.93 V	200 ms	NWA
	TPS3802L30DCK	2.64 V	380 ms	ASA
	TPS3802K33DCK	2.93 V	380 ms	ARK
	TPS3801T50DCK	4.00 V	25 ms	AVI
	TPS3801I50DCK	4.55 V	200 ms	NSA

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this data sheet, or refer to our web site at www.ti.com.

ABSOLUTE MAXIMUM RATINGS(1) (2)

Over operating free-air temperature range (unless otherwise noted).

	UNIT
Supply voltage, V_{DD}	7 V
SENSE	–0.3 V to 5 V
All other pins	–0.3 V to 7 V
$\overline{MR}$	–0.3 V to V_{DD} + 0.3 V
$\overline{RESET}$	–0.3 V to V_{DD} + 0.3 V
Maximum low-output current, I_{OL}	5 mA
Maximum high-output current, I_{OH}	–5 mA
Input-clamp current, I_{IK} ($V_I < 0$ or $V_I > V_{DD}$)	±20 mA
Output-clamp current, I_{OK} ($V_O < 0$ or $V_O > V_{DD}$)	±20 mA
Operating junction temperature range, T_J (3)	–40°C to +85°C
Storage temperature range, T_{stg}	–65°C to +150°C

(1) Stresses beyond those listed under *absolute maximum ratings* may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under *recommended operating conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

(2) All voltage values are with respect to GND. For reliable operation, the device should not be operated at 7 V for more than t = 1000h continuously.

(3) Due to the low dissipation power of this device, it is assumed that $T_J = T_A$.

RECOMMENDED OPERATING CONDITIONS

		MIN	MAX	UNIT
Supply voltage, V_{DD}	TPS3801J25, TPS3801L30, TPS3801K33, TPS3801I50, TPS3801T50	2	6	V
	All other devices	1.6	4	
SENSE		0	See (1)	V
Input voltage, V_I		0	V_{DD} +0.3	V
High-level input voltage, V_{IH}		0.7 × V_{DD}	V_{DD} +0.3	V
Low-level input voltage, V_{IL}			0.3 × V_{DD}	V
Input transition rise and fall rate at $\overline{MR}$, Δt/ΔV			100	ns/V
Pull-up resistor value, $\overline{RESET}$		$\frac{V_{Pull\text{-}up}}{50\mu A}$		Ω
Operating free-air temperature range, T_A		–40	+85	°C

(1) Maximum = V_{DD} + 0.3 or 4.5 V, whichever is greater.

ELECTRICAL CHARACTERISTICS

Over –40°C to +85°C free-air temperature range (unless otherwise noted).

PARAMETER			TEST CONDITIONS	TPS3800-xx, TPS3801-xx, TPS3802-xx			UNIT
				MIN	TYP	MAX	
V_{OH}	High-level output voltage ($\overline{\text{RESET}}$)		V_{DD} = 1.6 V to 6 V I_{OH} = –500 µA	V_{DD} –0.2			V
			V_{DD} = 3.3 V I_{OH} = –2 mA	V_{DD} –0.4			
			V_{DD} = 6 V I_{OH} = –4 mA (1)	V_{DD} –0.4			
V_{OL}	Low-level output voltage ($\overline{\text{RESET}}$)		V_{DD} = 1.6 V to 6 V, I_{OL} = 500 µA			0.2	V
			V_{DD} = 3.3 V, I_{OL} = 2 mA			0.4	
			V_{DD} = 6 V, I_{OL} = 4 mA (1)			0.4	
	Power-up reset voltage (2)		V_{DD} ≥ 1.1 V, I_{OL} = 50 µA			0.2	V
$V_{IT–}$	Negative-going input threshold voltage (3)	TPS380x-01	T_A = –40°C to 85°C	1.117	1.14	1.163	V
		TPS380xE18		1.67	1.71	1.75	
		TPS380xJ25		2.2	2.25	2.3	
		TPS380xG27		2.45	2.5	2.55	
		TPS380xL30		2.58	2.64	2.7	
		TPS380xK33		2.87	2.93	2.99	
		TPS380xI50		4.45	4.55	4.65	
		TPS380xT50		3.92	4	4.08	
V_{hys}	Threshold hysteresis	TPS380x-01			15		mV
		TPS380xx18			25		
		TPS380xx25			30		
		TPS380xx27			35		
		TPS380xx30			35		
		TPS380xx33			40		
		TPS380xx50			60		
I_{IH}	High-level input current ($\overline{\text{MR}}$)		$\overline{\text{MR}}$ = 0.7×V_{DD}, V_{DD} = 6 V	–40	–60	–100	µA
I_{IL}	Low-level input current ($\overline{\text{MR}}$)		$\overline{\text{MR}}$ = 0 V, V_{DD} = 6 V	–130	–200	–340	
I_I	Input current (SENSE)			–25		25	nA
I_{DD}	Supply current	TPS3801J25, TPS3801L30, TPS3801K33, TPS3801I50, TPS3801T50	V_{DD} = 2 V, $\overline{\text{MR}}$ and output unconnected		9	12	µA
			V_{DD} = 6 V, $\overline{\text{MR}}$ and output unconnected		20	25	
		TPS3801-01	V_{DD} = 1.6 V, SENSE = 0 V to V_{DD}, output unconnected		7	10	
			V_{DD} = 4 V, SENSE = 0 V to V_{DD}, output unconnected		9	12	
		TPS3801E18, TPS3800G27, TPS3802K33, TPS3802L30	V_{DD} = 1.6 V, $\overline{\text{MR}}$ and output unconnected		8	11	
			V_{DD} = 4 V, $\overline{\text{MR}}$ and output unconnected		13	18	
C_i	Input capacitance		V_I = 0 V to V_{DD}		5		pF

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(1) Only valid for the TPS3801J25, TPS3801L30, TPS3801K33, TPS3801I50, and TPS3801T50.
(2) The lowest supply voltage at which $\overline{\text{RESET}}$ becomes active. $t_{r,\ VDD}$ ≥ 15 µs/V.
(3) To ensure the best stability of the threshold voltage, a bypass capacitor (0.1-µF ceramic) should be placed near the supply terminals.

TIMING REQUIREMENTS

at R_L = 1 MΩ, C_L = 50 pF, T_A = +25°C

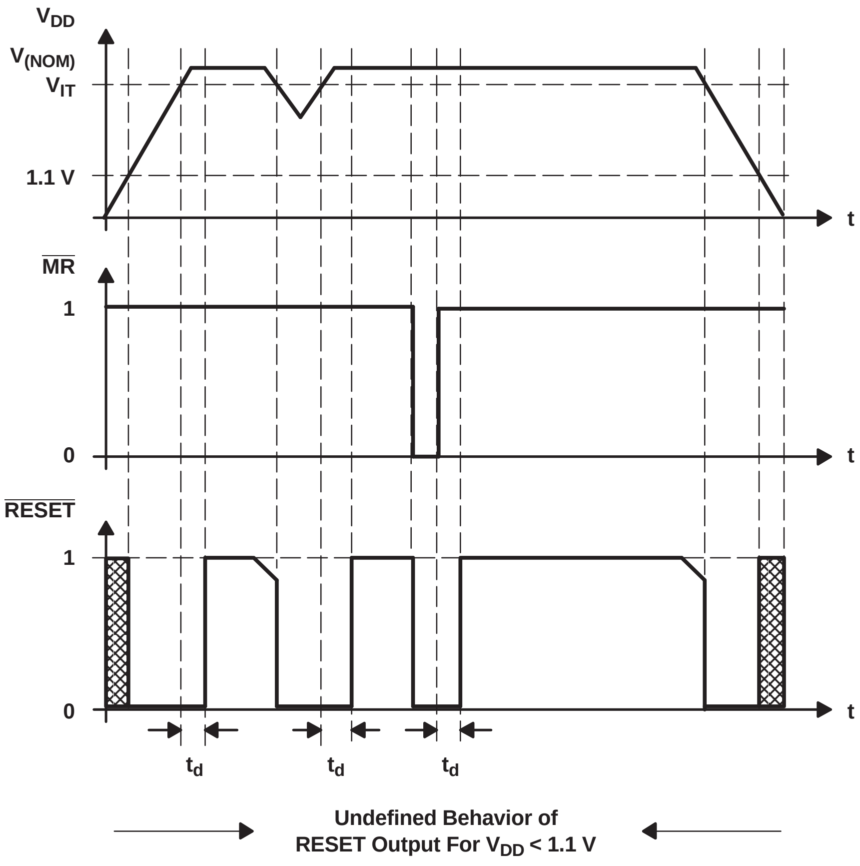
PARAMETER			TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_w	Pulse width	at SENSE	$V_{DD} = 1.6$ V, $V_{IH} = 1.1 \times V_{IT-}$, $V_{IL} = 0.9 \times V_{IT-}$	1			µs
		at V_{DD}	$V_{DD} = V_{IT-} + 0.2$ V, $V_{DD} = V_{IT-} - 0.2$ V	3			
		at $\overline{MR}$	$V_{DD} \geq V_{IT-} + 0.2$ V, $V_{IL} = 0.3 \times V_{DD}$, $V_{IH} = 0.7 \times V_{DD}$	100			ns

SWITCHING CHARACTERISTICS

at R_L = 1 MΩ, C_L = 50 pF, T_A = +25°C

PARAMETER			TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_d	$\overline{RESET}$ recovery delay time	TPS3801T50	$V_{DD} \geq V_{IT-} + 0.2$ V, $\overline{MR} \geq 0.7 \times V_{DD}$ See timing diagram	15	25	35	ms
		TPS3800		60	95	140	
		TPS3801		120	200	280	
		TPS3802		240	380	560	
t_{PHL}	Propagation (delay) time, high-to-low-level output	$\overline{MR}$ to $\overline{RESET}$ delay	$V_{DD} \geq V_{IT-} + 0.2$ V, $V_{IL} = 0.3 \times V_{DD}$, $V_{IH} = 0.7 \times V_{DD}$		15		ns
		V_{DD} to $\overline{RESET}$ delay	$V_{IL} = V_{IT-} - 0.2$ V, $V_{IH} = V_{IT-} + 0.2$ V		1		µs
		SENSE to $\overline{RESET}$					

TIMING DIAGRAM



NOTE: $\overline{RESET}$ should not be forced high during the power-up sequence (until V_{DD} > 1.1 V).

FUNCTIONAL BLOCK DIAGRAMS

FUNCTION/TRUTH TABLE, TPS380x

$\overline{\text{MR}}$	$V_{DD}>V_{IT}$	$\overline{\text{RESET}}$
L	0	L
L	1	L
H	0	L
H	1	H

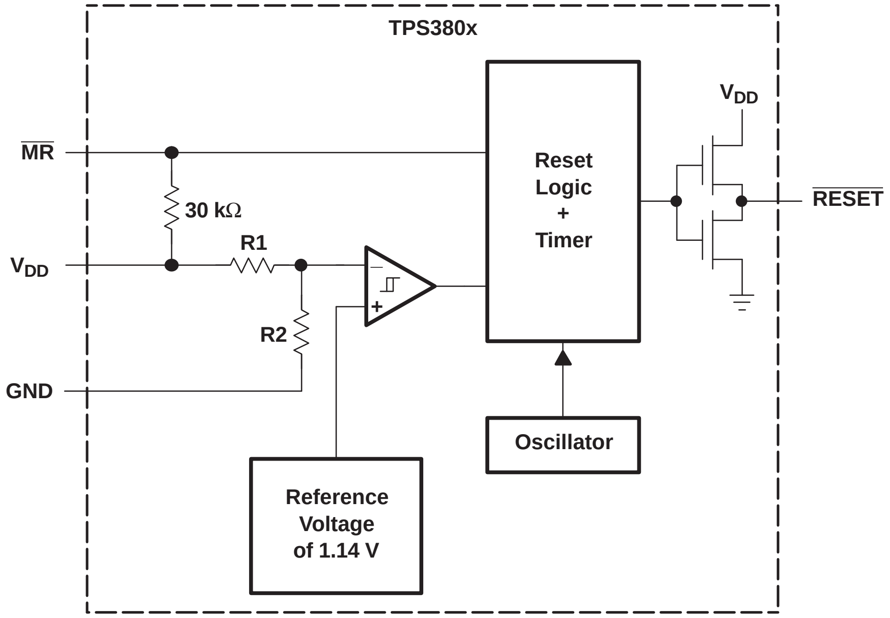


Figure 1.

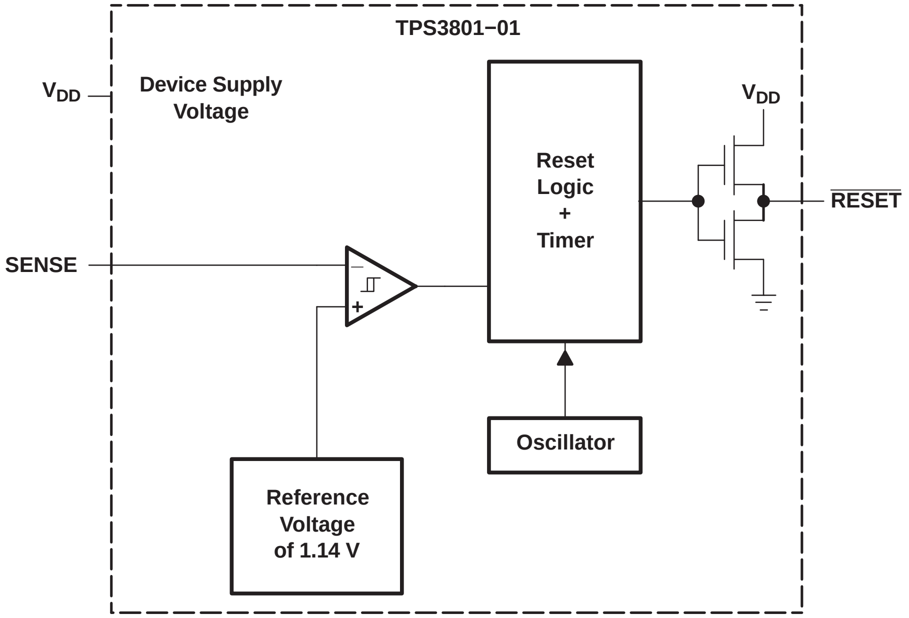


Figure 2.

TYPICAL CHARACTERISTICS

LOW-LEVEL OUTPUT VOLTAGE
vs
LOW-LEVEL OUTPUT CURRENT

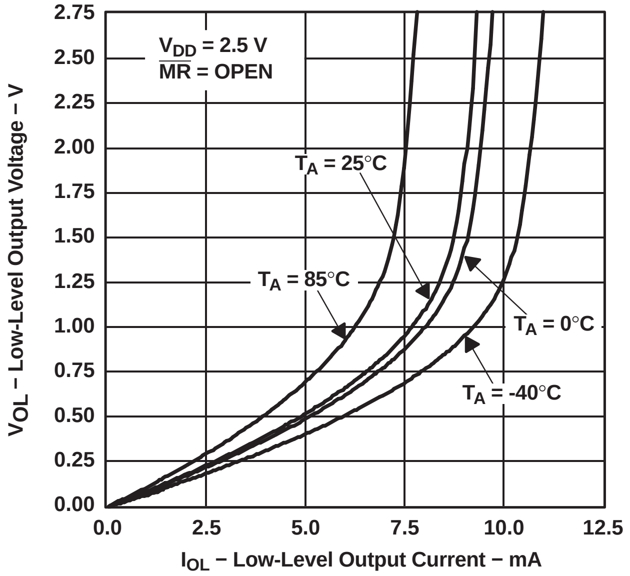


Figure 3.

SUPPLY CURRENT
vs
SUPPLY VOLTAGE

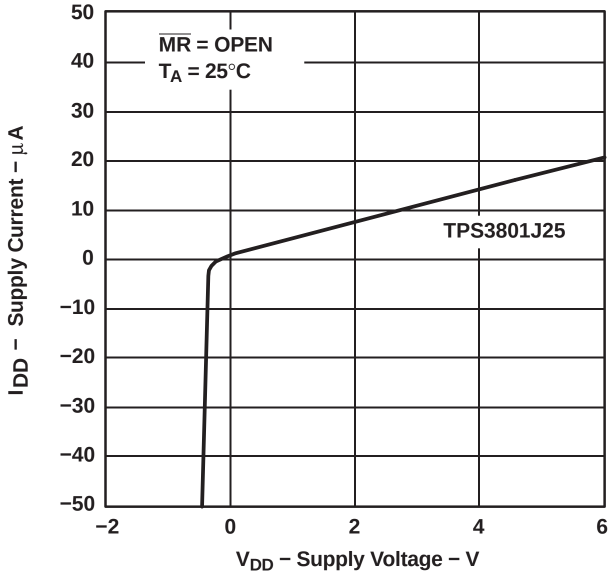


Figure 4.

HIGH-LEVEL OUTPUT VOLTAGE
vs
HIGH-LEVEL OUTPUT CURRENT

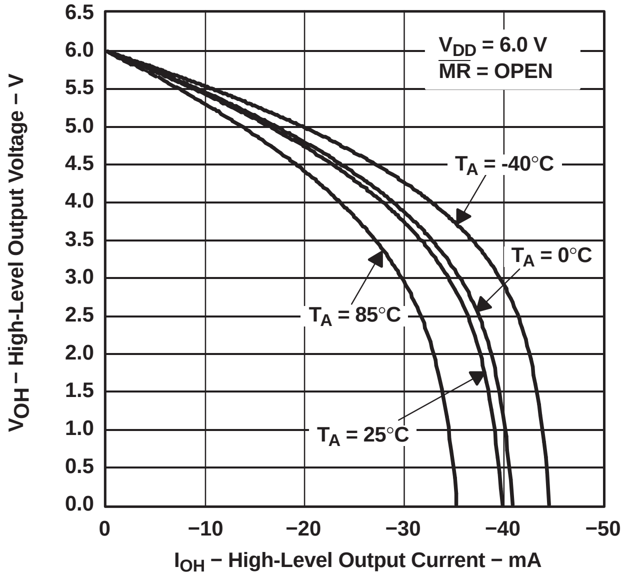


Figure 5.

HIGH-LEVEL OUTPUT VOLTAGE
vs
HIGH-LEVEL OUTPUT CURRENT

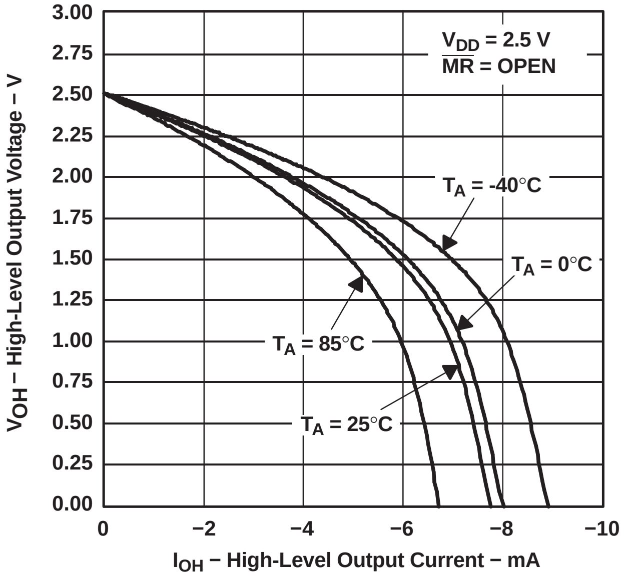


Figure 6.

TYPICAL CHARACTERISTICS (continued)

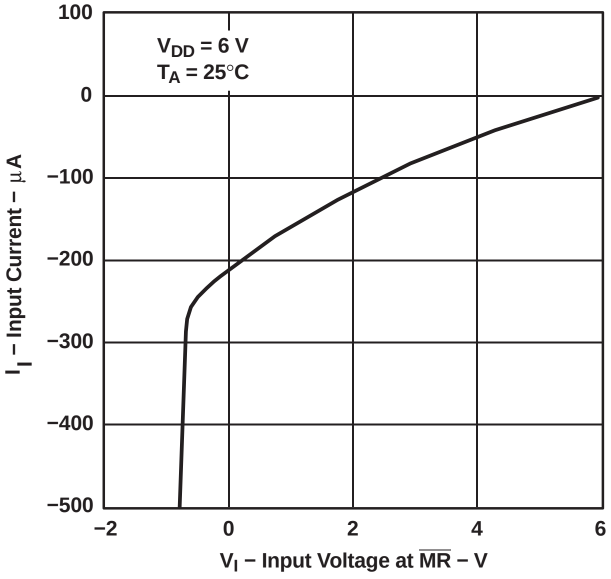

INPUT CURRENT
vs
INPUT VOLTAGE AT $\overline{MR}$

Figure 7.

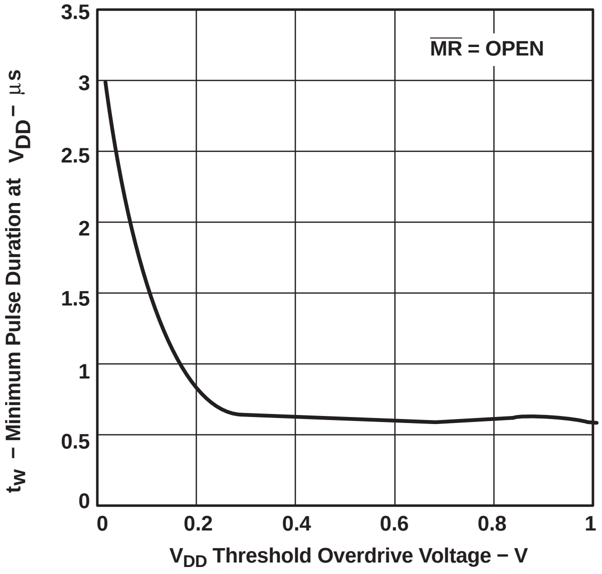

MINIMUM PULSE DURATION AT V_{DD}
vs
V_{DD} THRESHOLD OVERDRIVE VOLTAGE

Figure 8.

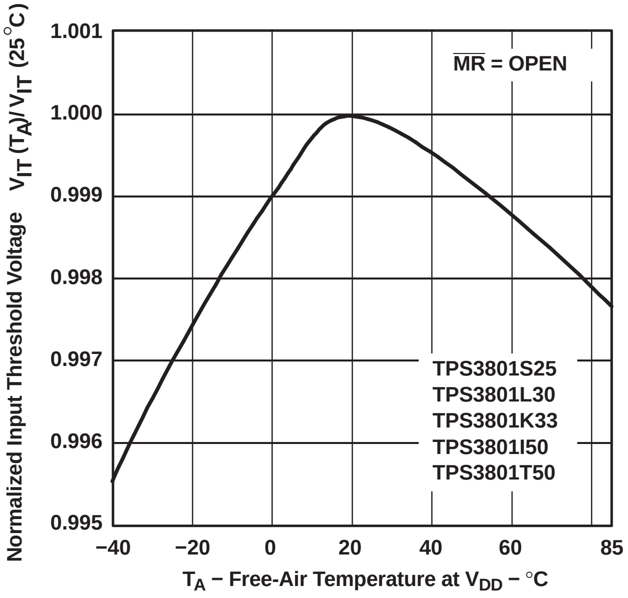

NORMALIZED INPUT THRESHOLD VOLTAGE
vs
FREE-AIR TEMPERATURE AT V_{DD}

Figure 9.

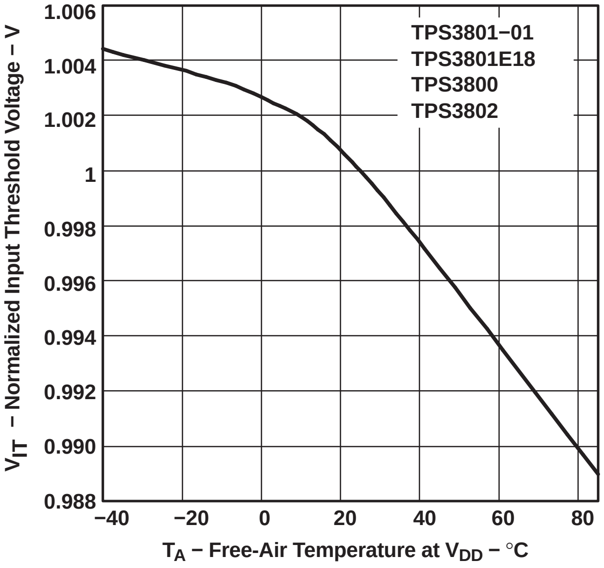

NORMALIZED INPUT THRESHOLD VOLTAGE
vs
FREE-AIR TEMPERATURE AT V_{DD}

Figure 10.

Changes from Revision D (December 2006) to Revision E **Page**

- Added Pull-up resistor value, $\overline{\text{RESET}}$ to the Recommended Operating Conditions Table 2

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TPS3800G27DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ARI	Samples
TPS3800G27DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ARI	Samples
TPS3801-01DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ARF	Samples
TPS3801-01DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ARF	Samples
TPS3801E18DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ARE	Samples
TPS3801E18DCKRG4	ACTIVE	SC70	DCK	5		TBD	Call TI	Call TI	-40 to 85		Samples
TPS3801I50DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NSA	Samples
TPS3801I50DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NSA	Samples
TPS3801J25DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NJA	Samples
TPS3801J25DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NJA	Samples
TPS3801K33DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NWA	Samples
TPS3801K33DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NWA	Samples
TPS3801L30DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NPA	Samples
TPS3801L30DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	NPA	Samples
TPS3801T50DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	AVI	Samples
TPS3801T50DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	AVI	Samples
TPS3801T50DCKT	OBSOLETE	SC70	DCK	5		TBD	Call TI	Call TI	-40 to 85		

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
TPS3802K33DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ARK	Samples
TPS3802K33DCKRG4	ACTIVE	SC70	DCK	5		TBD	Call TI	Call TI	-40 to 85		Samples
TPS3802L30DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ASA	Samples
TPS3802L30DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	ASA	Samples

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

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

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

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

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

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

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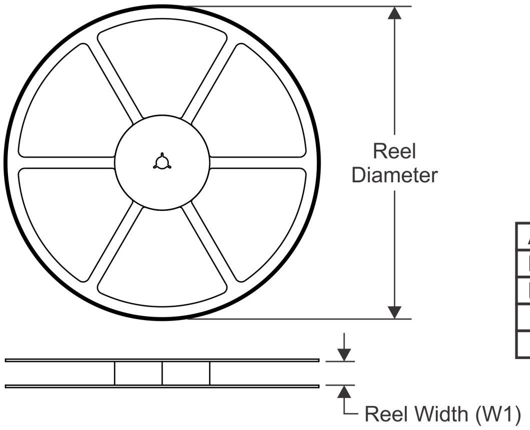
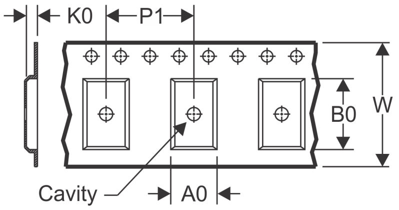
TAPE AND REEL INFORMATION

REEL DIMENSIONS

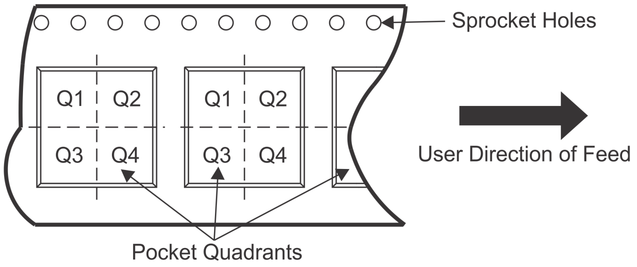


TAPE DIMENSIONS



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

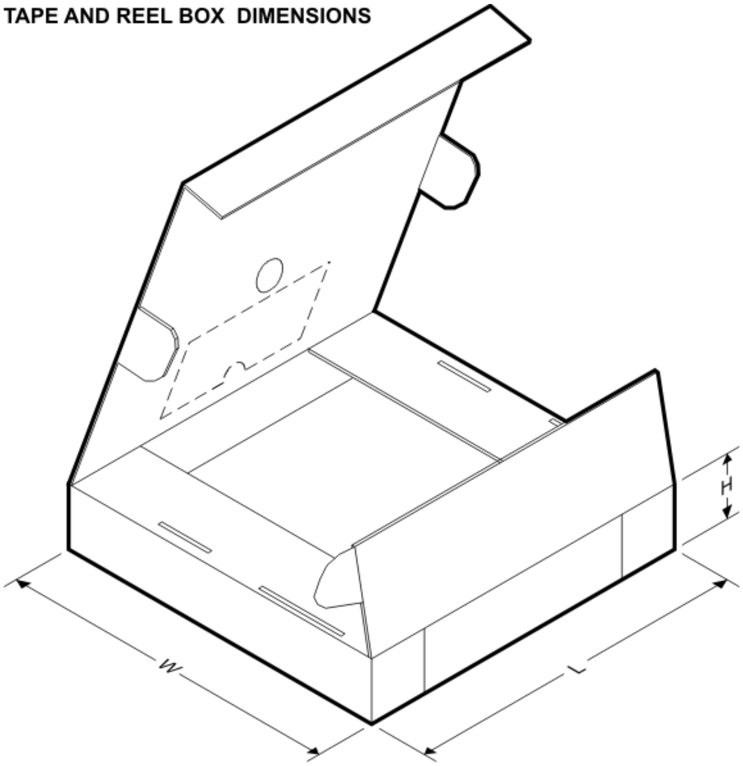
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*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
TPS3800G27DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3800G27DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801-01DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3801-01DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801E18DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801E18DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3801I50DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801J25DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801K33DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801K33DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3801L30DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3801T50DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3801T50DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3802K33DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3802K33DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3
TPS3802L30DCKR	SC70	DCK	5	3000	178.0	9.0	2.4	2.5	1.2	4.0	8.0	Q3
TPS3802L30DCKR	SC70	DCK	5	3000	180.0	8.4	2.41	2.41	1.2	4.0	8.0	Q3

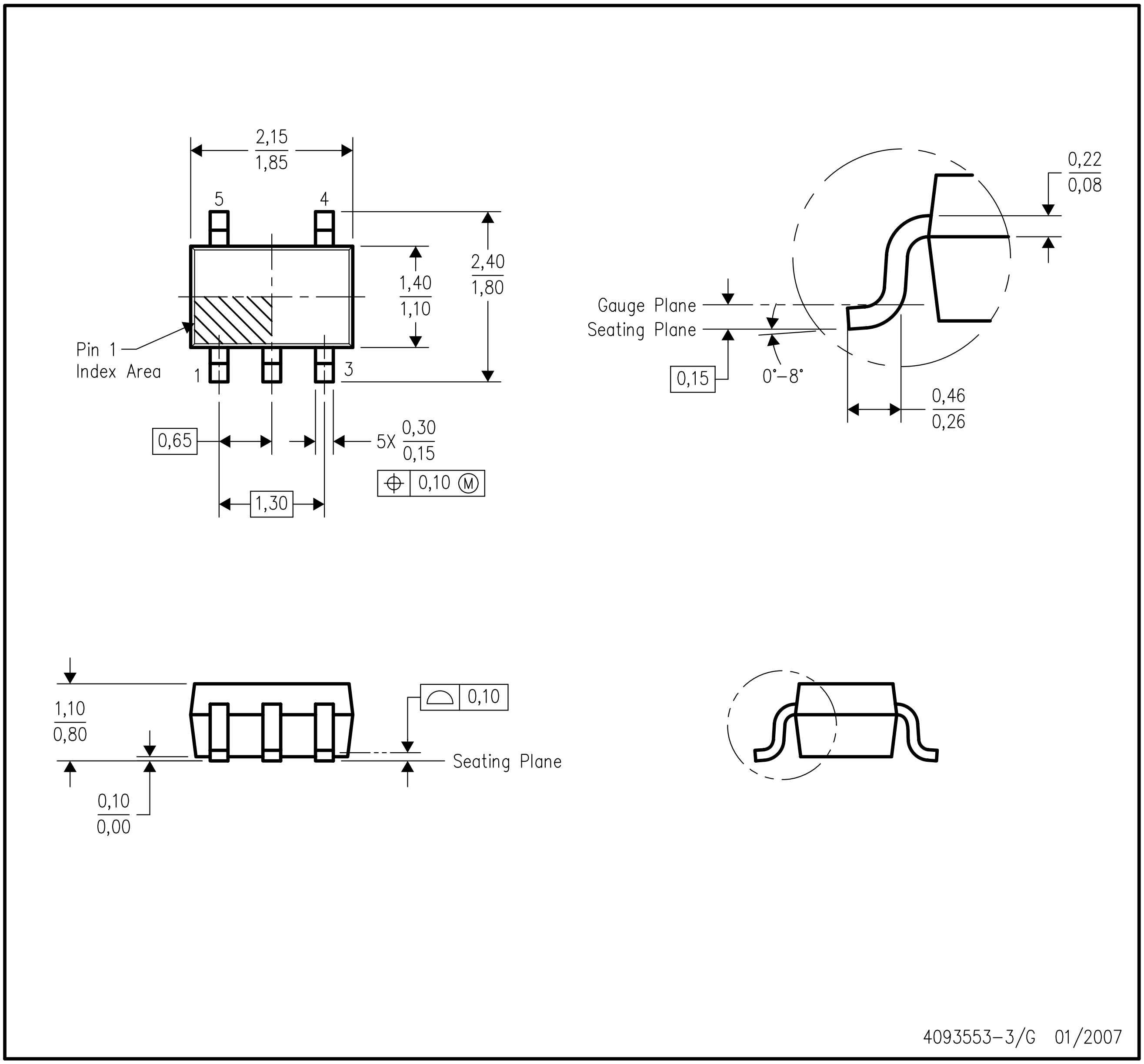
TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

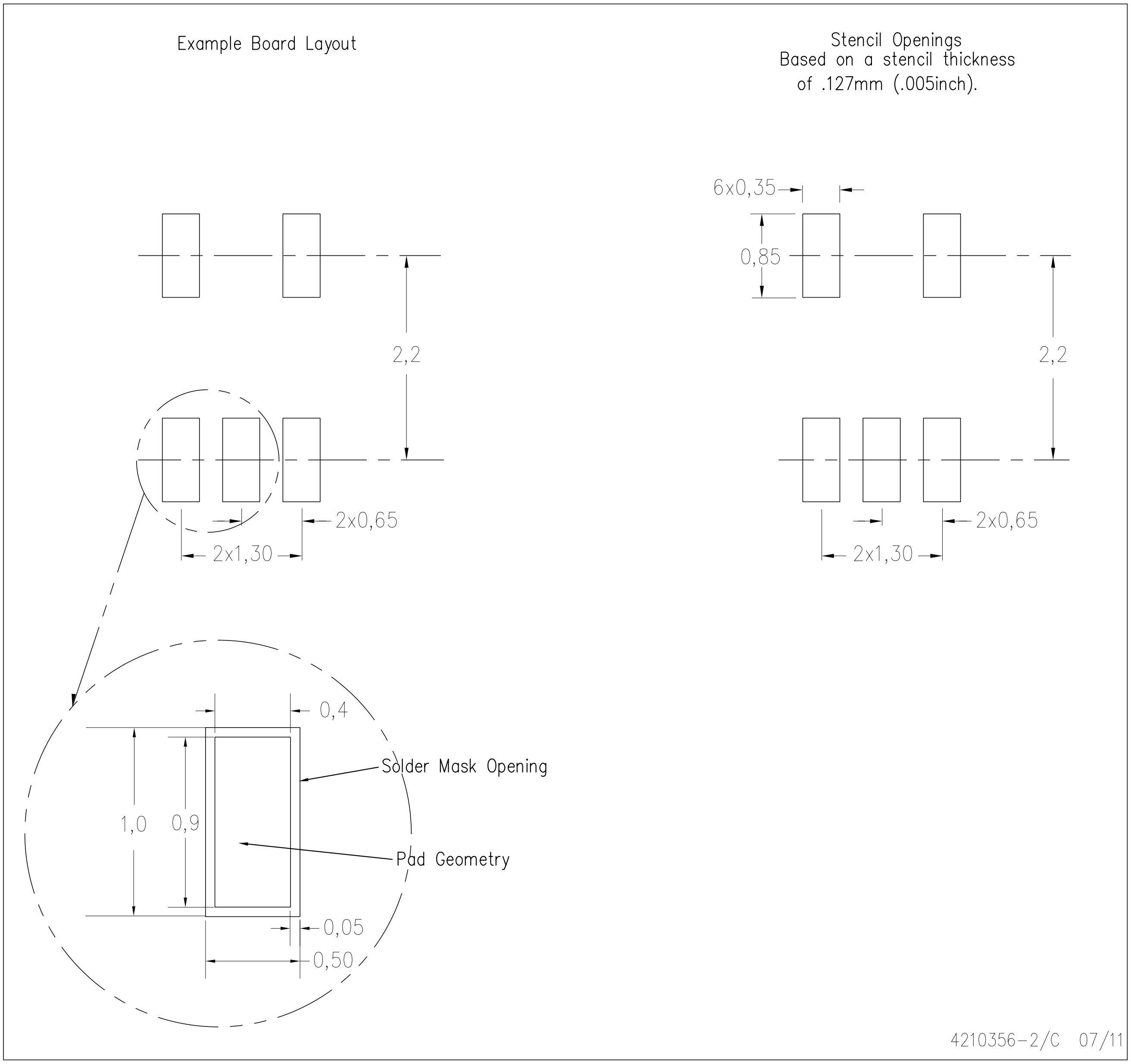
Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
TPS3800G27DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3800G27DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801-01DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3801-01DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801E18DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801E18DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3801I50DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801J25DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801K33DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801K33DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3801L30DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3801T50DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3801T50DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3802K33DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3802K33DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
TPS3802L30DCKR	SC70	DCK	5	3000	180.0	180.0	18.0
TPS3802L30DCKR	SC70	DCK	5	3000	202.0	201.0	28.0

DCK (R–PDSO–G5) PLASTIC SMALL–OUTLINE PACKAGE



NOTES:
- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion. Mold flash and protrusion shall not exceed 0.15 per side.
- D. Falls within JEDEC MO–203 variation AA.

DCK (R–PDSO–G5) PLASTIC SMALL OUTLINE



NOTES:
- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Customers should place a note on the circuit board fabrication drawing not to alter the center solder mask defined pad.
- D. Publication IPC–7351 is recommended for alternate designs.
- E. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Example stencil design based on a 50% volumetric metal load solder paste. Refer to IPC–7525 for other stencil recommendations.

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