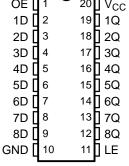


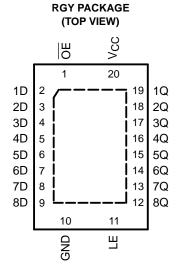
#### **FEATURES**

- Inputs Are TTL-Voltage Compatible
- 4.5-V to 5.5-V V<sub>CC</sub> Operation
- Typical  $t_{pd} = 5.1 \text{ ns at 5 V}$
- Typical V<sub>OLP</sub> (Output Ground Bounce) <0.8 V at  $V_{CC} = 5 \text{ V}$ ,  $T_A = 25^{\circ}\text{C}$
- Typical  $V_{OHV}$  (Output  $V_{OH}$  Undershoot) >2.3 V at  $V_{CC}$  = 5 V,  $T_A$  = 25°C
- **Supports Mixed-Mode Voltage Operation on All Ports**

DB, DGV, DW, NS, OR PW PACKAGE (TOP VIEW) 20 V<sub>CC</sub> ΟE



- I<sub>off</sub> Supports Partial-Power-Down Mode Operation
- Latch-Up Performance Exceeds 250 mA Per **JESD 17**
- **ESD Protection Exceeds JESD 22** 
  - 2000-V Human-Body Model (A114-A)
  - 200-V Machine Model (A115-A)
  - 1000-V Charged-Device Model (C101)



#### **DESCRIPTION/ORDERING INFORMATION**

The SN74LV573AT is an octal transparent D-type latch. When the latch-enable (LE) input is high, the Q outputs follow the data (D) inputs. When LE is low, the Q outputs are latched at the logic levels of the D inputs.

#### ORDERING INFORMATION

T <sub>A</sub>	PA	CKAGE <sup>(1)</sup>	ORDERABLE PART NUMBER	TOP-SIDE MARKING
	QFN – RGY	Tape and reel	SN74LV573ATRGYR	VV573
	SOIC - DW	Tube	SN74LV573ATDW	LV573AT
	SOIC - DW	Tape and reel	SN74LV573ATDWR	LVS/SAT
4000 1- 0500	SOP - NS	Tape and reel	SN74LV573ATNSR	74LV573AT
–40°C to 85°C	SSOP – DB	Tape and reel	SN74LV573ATDBR	LV573AT
	TSSOP – PW	Tube	SN74LV573ATPW	LV573AT
	1550P – PW	Tape and reel	SN74LV573ATPWR	LV5/3AT
	TVSOP - DGV	Tape and reel	SN74LV573ATDGVR	LV573AT

(1) Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.



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.



## **DESCRIPTION/ORDERING INFORMATION (CONTINUED)**

A buffered output-enable  $(\overline{OE})$  input can be used to place the eight outputs in either a normal logic state (high or low) or the high-impedance state. In the high-impedance state, the outputs neither load nor drive the bus lines significantly. The high-impedance state and increased drive provide the capability to drive bus lines without interface or pullup components.

To ensure the high-impedance state during power up or power down,  $\overline{\text{OE}}$  shall be tied to  $V_{\text{CC}}$  through a pullup resistor; the minimum value of the resistor is determined by the current-sinking capability of the driver.

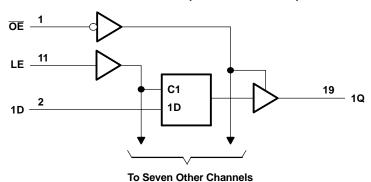
OE does not affect the internal operations of the latches. Old data can be retained or new data can be entered while the outputs are in the high-impedance state.

This device is fully specified for partial-power-down applications using I<sub>off</sub>. The I<sub>off</sub> circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

# FUNCTION TABLE (EACH LATCH)

	INPUTS	OUTPUTS	
ŌĒ	LE	D	Q
L	Н	Н	П
L	Н	L	L
L	L	X	$Q_0$
Н	X	X	Z

#### **LOGIC DIAGRAM (POSTIVE LOGIC)**





# Absolute Maximum Ratings<sup>(1)</sup>

over operating free-air temperature range (unless otherwise noted)

			MIN	MAX	UNIT
$V_{CC}$	Supply voltage range		-0.5	7	V
$V_{I}$	Input voltage range (2)		-0.5	7	V
Vo	Voltage range applied to any output in the high-impedance	e or power-off state (2)	-0.5	7	V
Vo	Output voltage range applied in the high or low state (2)(3)		-0.5	V <sub>CC</sub> + 0.5	V
I <sub>IK</sub>	Input clamp current	V <sub>I</sub> < 0		-20	mA
I <sub>OK</sub>	Output clamp current	V <sub>O</sub> < 0		-50	mA
Io	Continuous output current	$V_O = 0$ to $V_{CC}$		±35	mA
	Continuous current through V <sub>CC</sub> or GND			±70	mA
		DB package (4)		70	
		DGV package <sup>(4)</sup>		92	
0	Deckage thermal impedance	DW package <sup>(4)</sup>		58	2000
$\theta_{JA}$	Package thermal impedance	NS package (4)		60	°C/W
		PW package <sup>(4)</sup>		83	
		RGYpackage <sup>(5)</sup>		37	•
T <sub>stg</sub>	Storage temperature range		-65	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) The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.
- (3) This value is limited to 5.5 V maximum.
- 4) The package thermal impedance is calculated in accordance with JESD 51-7.
- (5) The package thermal impedance is calculated in accordance with JESD 51-5.

## Recommended Operating Conditions<sup>(1)</sup>

			MIN	MAX	UNIT
$V_{CC}$	Supply voltage		4.5	5.5	V
V <sub>IH</sub>	High-level input voltage	V <sub>CC</sub> = 4.5 V to 5.5 V	2		V
V <sub>IL</sub>	Low-level input voltage	V <sub>CC</sub> = 4.5 V to 5.5 V		0.8	V
VI	Input voltage		0	5.5	V
V	Output valtage	High or low state	0	$V_{CC}$	V
Vo	Output voltage	3-state	0	5.5	V
I <sub>OH</sub>	High-level output current	V <sub>CC</sub> = 4.5 V to 5.5 V		-16	mA
I <sub>OL</sub>	Low-level output current	$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$		16	mA
$\Delta t/\Delta v$	Input transition rise or fall rate	$V_{CC} = 4.5 \text{ V to } 5.5 \text{ V}$		20	ns/V
T <sub>A</sub>	Operating free-air temperature		-40	85	°C

All unused inputs of the device must be held at V<sub>CC</sub> or GND to ensure proper device operation. Refer to the TI application report, Implications of Slow or Floating CMOS Inputs, literature number SCBA004.

# SN74LV573AT OCTAL TRANSPARENT D-TYPE LATCH WITH 3-STATE OUTPUTS

SCES574C-JUNE 2004-REVISED AUGUST 2005



#### **Electrical Characteristics**

over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER	TEST CONDITIONS	V <sub>cc</sub>	T	( = 25°C		T <sub>A</sub> = -	UNIT	
			MIN	TYP	MAX	MIN	0.1 0.55 ±1 ±2.5	
V	$I_{OH} = -50 \mu A$	4.5 V	4.4	4.5		4.4		V
V <sub>OH</sub>	$I_{OH} = -16 \text{ mA}$	4.5 V	3.8			3.8		V
V <sub>OL</sub>	$I_{OL} = 50 \mu A$	4.5 V		0	0.1		0.1	V
V OL	I <sub>OL</sub> = 16 mA	4.5 V			0.55		0.55	V
I <sub>I</sub>	$V_I = 5.5 \text{ V or GND}$	0 to 5.5 V			±0.1		±1	μΑ
I <sub>OZ</sub>	$V_O = V_{CC}$ or GND	5.5 V			±0.25		±2.5	μΑ
I <sub>CC</sub>	$V_I = V_{CC}$ or GND, $I_O = 0$	5.5 V			2		20	μΑ
$\Delta I_{CC}^{(1)}$	One input at 3.4 V, Other inputs at V <sub>CC</sub> or GND	5.5 V			1.35		1.5	mA
I <sub>off</sub>	$V_I$ or $V_O = 0$ to 5.5 V	0			0.5		5	μΑ
C <sub>i</sub>	$V_I = V_{CC}$ or GND			4.5				pF

<sup>(1)</sup> This is the increase in supply current for each input at one of the specified TTL voltage levels, rather than 0 V or V<sub>CC</sub>.

### **Timing Requirements**

over recommended operating free-air temperature range,  $V_{CC}$  = 5 V  $\pm$  0.5 V (unless otherwise noted) (see Figure 1)

		T <sub>A</sub> = 2	T <sub>A</sub> = 25°C MIN MAX		T <sub>A</sub> = -40°C to 85°C		
		MIN			MAX		
t <sub>w</sub>	Pulse duration, LE high	6.5		8.5		ns	
t <sub>su</sub>	Setup time, data before LE↓	1.5		1.5		ns	
t <sub>h</sub>	Hold time, data after LE $\downarrow$	3.5		3.5		ns	

### **Switching Characteristics**

over recommended operating free-air temperature range,  $V_{CC}$  = 5 V  $\pm$  0.5 V (unless otherwise noted) (see Figure 1)

PARAMETER	FROM	TO (OUTPUT)	LOAD	т,	<sub>A</sub> = 25°C	;	T <sub>A</sub> = -	UNIT		
	(INPUT)	(OUTPUT)	CAPACITANCE	MIN	TYP	MAX	MIN	MAX		
t <sub>PLH</sub>	D	Q	C <sub>L</sub> = 15 pF	2.6	5.1	8.5	1	9.5	20	
t <sub>PHL</sub>	Ь	Q	OL = 13 pi	OL = 13 pi	3	5.1	8.5	1	9.5	ns
t <sub>PLH</sub>	LE	Q	C <sub>L</sub> = 15 pF	3	7.7	12.3	1	14.5	ns	
t <sub>PHL</sub>	LC	Q	C <sub>L</sub> = 15 pr	3.5	7.7	12.3	1	14.5	115	
t <sub>PZH</sub>	ŌĒ	Q	C 15 pF	3	6.3	10.9	1	12.5	20	
t <sub>PZL</sub>	OE	Q	$C_L = 15 pF$	3.3	6.3	10.9	1	12.5	ns	
t <sub>PHZ</sub>	ŌĒ	Q	C <sub>L</sub> = 15 pF	2.8	5.5	8	1	11	ns	
$t_{PLZ}$	OE	Q	C <sub>L</sub> = 15 pr	1.6	5.4	8	1	9.5		
t <sub>PLH</sub>	<b>D</b>	0	C	3.7	5.9	9.5	1	10.5	20	
t <sub>PHL</sub>	D	Q	$C_L = 50 \text{ pF}$	5.5	5.9	9.5	1	10.5	ns	
t <sub>PLH</sub>	LE	0	C	4.3	8.5	13.3	1	14.5	20	
t <sub>PHL</sub>	LE	Q	$C_L = 50 \text{ pF}$	5.9	8.5	13.3	1	14.5	ns	
t <sub>PZH</sub>	ŌĒ	0	C	4.5	7.1	11.9	1	13.5	20	
t <sub>PZL</sub>	OE	Q	$C_L = 50 \text{ pF}$	5.4	7.1	11.9	1	13.5	ns	
t <sub>PHZ</sub>	ŌĒ	0	C 50 pF	3.3	8.8	11.2	1	12	20	
t <sub>PLZ</sub>	UE	Q	C <sub>L</sub> = 50 pF	$C_L = 50 \text{ pF}$	2.6	8.8	11.2	1	12	ns
t <sub>sk(o)</sub>			C <sub>L</sub> = 50 pF			1.5		1.5	ns	





# Noise Characteristics<sup>(1)</sup>

 $V_{CC} = 5 \text{ V}, C_L = 50 \text{ pF}$ 

		T <sub>A</sub> = 25°C			UNIT
		MIN TYP		MAX	Oldii
V <sub>OL(P)</sub>	Quiet output, maximum dynamic V <sub>OL</sub>		1.1	1.5	V
$V_{OL(V)}$	Quiet output, minimum dynamic V <sub>OL</sub>		-1.1	-1.5	V
V <sub>OH(V)</sub>	Quiet output, maximum dynamic V <sub>OH</sub>		4		V
$V_{IH(D)}$	High-level dynamic input voltage	2			V
$V_{IL(D)}$	Low-level dynamic input voltage			8.0	V

<sup>(1)</sup> Characteristics are for surface-mount packages only.

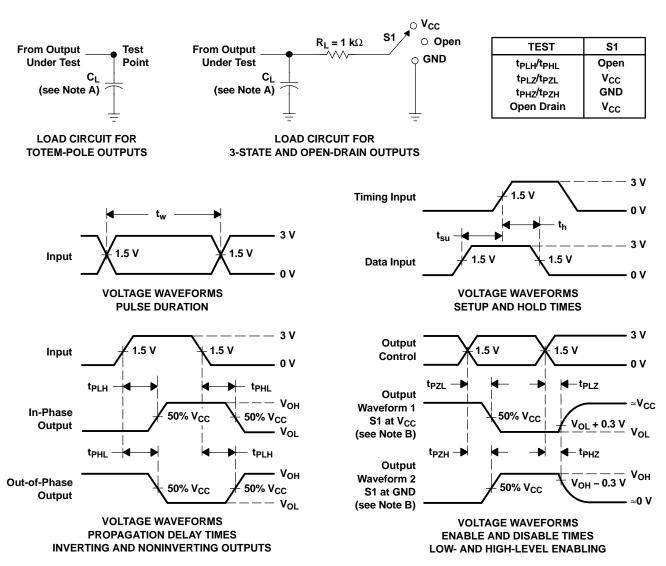
# **Operating Characteristics**

 $V_{CC} = 5 \text{ V}, T_A = 25^{\circ}\text{C}$ 

	PARAMETER	TEST CO	TYP	UNIT		
$C_{pd}$	Power dissipation capacitance	Outputs enabled	$C_L = 50 \text{ pF},$	f = 10 MHz	8	pF



#### PARAMETER MEASUREMENT INFORMATION



NOTES: A.  $C_L$  includes probe and jig capacitance.

- B. Waveform 1 is for an output with internal conditions such that the output is low, except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high, except when disabled by the output control.
- C. All input pulses are supplied by generators having the following characteristics: PRR  $\leq$  1 MHz,  $Z_O = 50 \Omega$ ,  $t_f \leq$  3 ns.  $t_f \leq$  3 ns.
- D. The outputs are measured one at a time, with one input transition per measurement.
- E. t<sub>PLZ</sub> and t<sub>PHZ</sub> are the same as t<sub>dis</sub>.
- F. t<sub>PZL</sub> and t<sub>PZH</sub> are the same as t<sub>en</sub>.
- G.  $t_{PHL}$  and  $t_{PLH}$  are the same as  $t_{pd}$ .
- H. All parameters and waveforms are not applicable to all devices.

Figure 1. Load Circuits and Voltage Waveforms



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## **PACKAGING INFORMATION**

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	e Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
SN74LV573ATDBR	ACTIVE	SSOP	DB	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDBRE4	ACTIVE	SSOP	DB	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDBRG4	ACTIVE	SSOP	DB	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDGVR	ACTIVE	TVSOP	DGV	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDGVRE4	ACTIVE	TVSOP	DGV	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDGVRG4	ACTIVE	TVSOP	DGV	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDW	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDWE4	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDWG4	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDWR	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDWRE4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATDWRG4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATNSR	ACTIVE	SO	NS	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATNSRE4	ACTIVE	SO	NS	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATNSRG4	ACTIVE	SO	NS	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATPW	ACTIVE	TSSOP	PW	20	70	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATPWE4	ACTIVE	TSSOP	PW	20	70	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATPWG4	ACTIVE	TSSOP	PW	20	70	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATPWR	ACTIVE	TSSOP	PW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATPWRE4	ACTIVE	TSSOP	PW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATPWRG4	ACTIVE	TSSOP	PW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LV573ATRGYR	ACTIVE	VQFN	RGY	20	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
SN74LV573ATRGYRG4	ACTIVE	VQFN	RGY	20	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR

(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.



#### PACKAGE OPTION ADDENDUM

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**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.

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# PACKAGE MATERIALS INFORMATION

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## TAPE AND REEL INFORMATION





	Dimension designed to accommodate the component width
В0	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		SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
SN74LV573ATDBR	SSOP	DB	20	2000	330.0	16.4	8.2	7.5	2.5	12.0	16.0	Q1
SN74LV573ATDGVR	TVSOP	DGV	20	2000	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74LV573ATDWR	SOIC	DW	20	2000	330.0	24.4	10.8	13.0	2.7	12.0	24.0	Q1
SN74LV573ATNSR	SO	NS	20	2000	330.0	24.4	8.2	13.0	2.5	12.0	24.0	Q1
SN74LV573ATPWR	TSSOP	PW	20	2000	330.0	16.4	6.95	7.1	1.6	8.0	16.0	Q1
SN74LV573ATRGYR	VQFN	RGY	20	3000	330.0	12.4	3.8	4.8	1.6	8.0	12.0	Q1

**PACKAGE MATERIALS INFORMATION** 

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\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LV573ATDBR	SSOP	DB	20	2000	346.0	346.0	33.0
SN74LV573ATDGVR	TVSOP	DGV	20	2000	346.0	346.0	29.0
SN74LV573ATDWR	SOIC	DW	20	2000	346.0	346.0	41.0
SN74LV573ATNSR	SO	NS	20	2000	346.0	346.0	41.0
SN74LV573ATPWR	TSSOP	PW	20	2000	346.0	346.0	33.0
SN74LV573ATRGYR	VQFN	RGY	20	3000	346.0	346.0	29.0

## DGV (R-PDSO-G\*\*)

#### **24 PINS SHOWN**

#### **PLASTIC SMALL-OUTLINE**



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, not to exceed 0,15 per side.

D. Falls within JEDEC: 24/48 Pins – MO-153 14/16/20/56 Pins – MO-194

# DW (R-PDSO-G20)

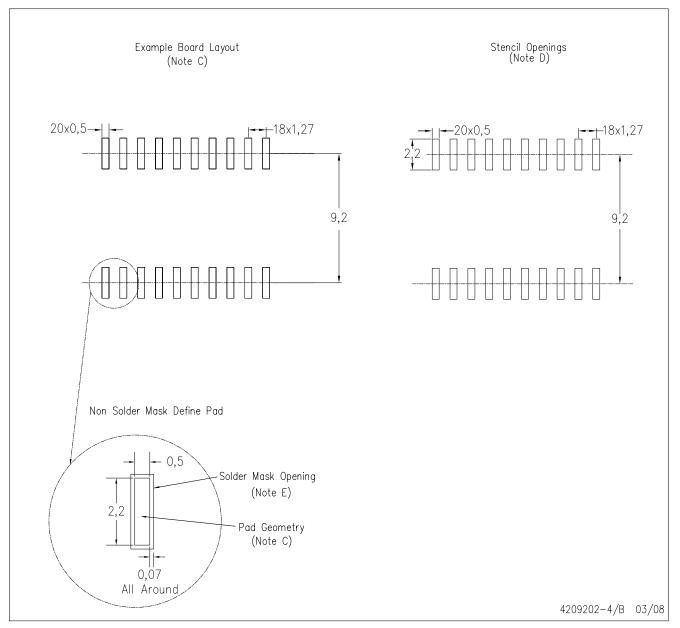
# PLASTIC SMALL-OUTLINE PACKAGE



- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
- D. Falls within JEDEC MS-013 variation AC.

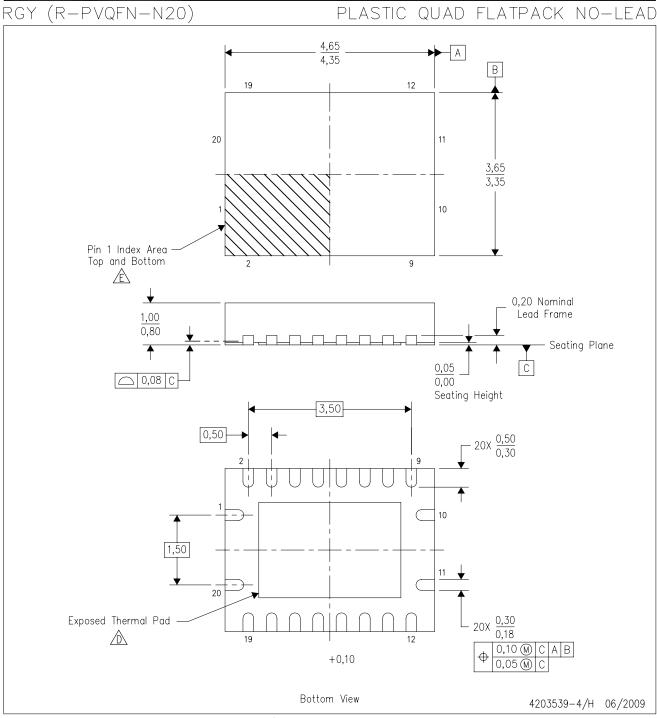


# DW (R-PDSO-G20)



- 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. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC—7525
- E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.





NOTES: A. All linear dimensions are in millimeters. Dimensioning and tolerancing per ASME Y14.5M-1994.

- B. This drawing is subject to change without notice.
- C. QFN (Quad Flatpack No-Lead) package configuration.
- The package thermal pad must be soldered to the board for thermal and mechanical performance.

  See the Product Data Sheet for details regarding the exposed thermal pad dimensions.
- Pin 1 identifiers are located on both top and bottom of the package and within the zone indicated. The Pin 1 identifiers are either a molded, marked, or metal feature.
- F. Package complies to JEDEC MO-241 variation BC.

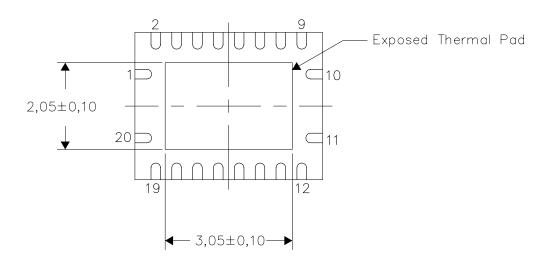


#### THERMAL INFORMATION

This package incorporates an exposed thermal pad that is designed to be attached directly to an external heatsink. The thermal pad must be soldered directly to the printed circuit board (PCB). After soldering, the PCB can be used as a heatsink. In addition, through the use of thermal vias, the thermal pad can be attached directly to the appropriate copper plane shown in the electrical schematic for the device, or alternatively, can be attached to a special heatsink structure designed into the PCB. This design optimizes the heat transfer from the integrated circuit (IC).

For information on the Quad Flatpack No—Lead (QFN) package and its advantages, refer to Application Report, QFN/SON PCB Attachment, Texas Instruments Literature No. SLUA271. This document is available at www.ti.com.

The exposed thermal pad dimensions for this package are shown in the following illustration.



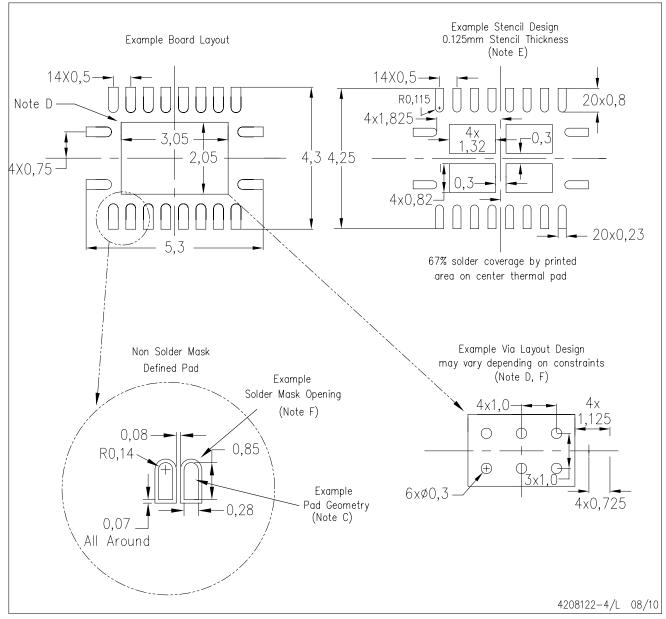
Bottom View

NOTE: All linear dimensions are in millimeters

Exposed Thermal Pad Dimensions

# RGY (R-PVQFN-N20)

# PLASTIC QUAD FLATPACK NO-LEAD



- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Publication IPC-7351 is recommended for alternate designs.
- D. This package is designed to be soldered to a thermal pad on the board. Refer to Application Note, Quad Flat—Pack QFN/SON PCB Attachment, Texas Instruments Literature No. SLUA271, and also the Product Data Sheets for specific thermal information, via requirements, and recommended board layout. These documents are available at www.ti.com <a href="https://www.ti.com">http://www.ti.com</a>.
- 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. Refer to IPC 7525 for stencil design considerations.
- F. Customers should contact their board fabrication site for minimum solder mask web tolerances between signal pads.



## **MECHANICAL DATA**

# NS (R-PDSO-G\*\*)

# 14-PINS SHOWN

### PLASTIC SMALL-OUTLINE PACKAGE



- 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, not to exceed 0,15.



## DB (R-PDSO-G\*\*)

## PLASTIC SMALL-OUTLINE

#### **28 PINS SHOWN**



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 not to exceed 0,15.

D. Falls within JEDEC MO-150

## PW (R-PDSO-G\*\*)

#### 14 PINS SHOWN

## 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 not to exceed 0,15.

D. Falls within JEDEC MO-153

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