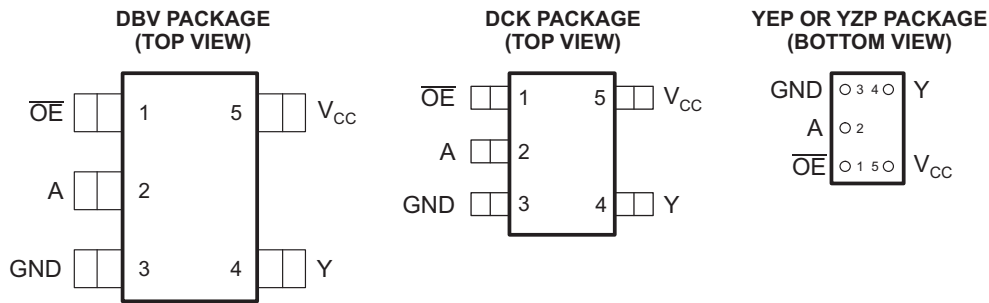


FEATURES

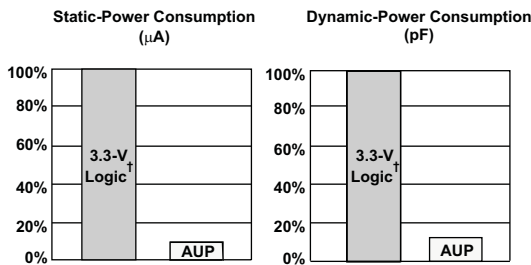
- Available in the Texas Instruments NanoStar™ and NanoFree™ Packages
- Low Static-Power Consumption
 - $I_{CC} = 0.9 \mu A$ Max
- Low Dynamic-Power Consumption
 - $C_{pd} = 4.2 pF$ at 3.3 V Typ
- Low Input Capacitance
 - $C_i = 1.5 pF$ Typ
- Low Noise – Overshoot and Undershoot <10% of V_{CC}
- Input-Disable Feature Allows Floating Input Conditions
- I_{off} Supports Partial Power-Down-Mode Operation
- Input Hysteresis Allows Slow Input Transition and Better Switching Noise Immunity at the Input
- Wide Operating V_{CC} Range of 0.8 V to 3.6 V
- Optimized for 3.3-V Operation
- 3.6-V I/O Tolerant to Support Mixed-Mode Signal Operation
- $t_{pd} = 4.1 ns$ Max at 3.3 V
- Suitable for Point-to-Point Applications
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II
- ESD Performance Tested Per JESD 22
 - 2000-V Human-Body Model (A114-B, Class II)
 - 200-V Machine Model (A115-A)
 - 1000-V Charged-Device Model (C101)
- ESD Protection Exceeds $\pm 5000 V$ With Human-Body Model



See mechanical drawings for dimensions.

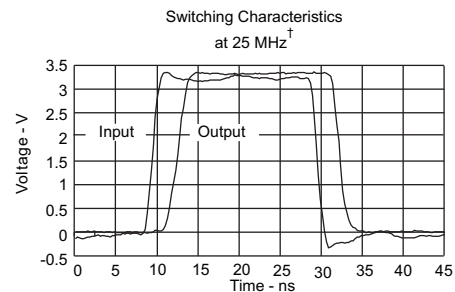
DESCRIPTION/ORDERING INFORMATION

The AUP family is TI's premier solution to the industry's low power needs in battery-powered portable applications. This family ensures a very low static and dynamic power consumption across the entire V_{CC} range of 0.8 V to 3.6 V, resulting in an increased battery life. This product also maintains excellent signal integrity (see Figure 1 and Figure 2).



† Single, dual, and triple gates.

Figure 1. AUP – The Lowest-Power Family



† AUP1G08 data at $C_L = 15 pF$.

Figure 2. Excellent Signal Integrity



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.

NanoStar, NanoFree are trademarks of Texas Instruments.

SN74AUP1G240

LOW-POWER SINGLE BUFFER/DRIVER WITH 3-STATE OUTPUT

SCES627A—MARCH 2005—REVISED AUGUST 2006

DESCRIPTION/ORDERING INFORMATION (CONTINUED)

This buffer/driver is a single line driver with a 3-state output. The output is disabled when the output-enable (\overline{OE}) input is high. This device has the input-disable feature, which allows floating input signals.

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

NanoStar™ and NanoFree™ package technology is a major breakthrough in IC packaging concepts, using the die as the package.

This device is fully specified for partial-power-down applications using I_{off} . The I_{off} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

ORDERING INFORMATION

T_A	PACKAGE ⁽¹⁾		ORDERABLE PART NUMBER	TOP-SIDE MARKING ⁽²⁾
-40°C to 85°C	NanoStar™ – WCSP (DSBGA) 0.23-mm large bump – YEP	Reel of 3000	SN74AUP1G240YEPR	___HK_
	NanoFree™ – WCSP (DSBGA) 0.23-mm large bump – YZP (Pb-free)	Reel of 3000	SN74AUP1G240YZPR	
	SOT (SOT-23) – DBV	Reel of 3000	SN74AUP1G240DBVR	H40_
	SOT (SC-70) – DCK	Reel of 3000	SN74AUP1G240DCKR	HK_

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

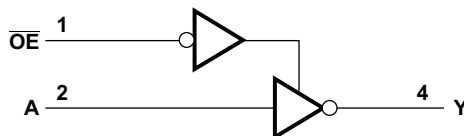
(2) DBV/DCK: The actual top-side marking has one additional character that designates the assembly/test site. YEP/YZP: The actual top-side marking has three preceding characters to denote year, month, and sequence code, and one following character to designate the assembly/test site. Pin 1 identifier indicates solder-bump composition (1 = SnPb, • = Pb-free).

FUNCTION TABLE

INPUTS		OUTPUT Y
\overline{OE}	A	
L	H	L
L	L	H
H	X ⁽¹⁾	Z

(1) Floating inputs allowed.

LOGIC DIAGRAM (POSITIVE LOGIC)



Absolute Maximum Ratings⁽¹⁾

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

		MIN	MAX	UNIT
V_{CC}	Supply voltage range	-0.5	4.6	V
V_I	Input voltage range ⁽²⁾	-0.5	4.6	V
V_O	Voltage range applied to any output in the high-impedance or power-off state ⁽²⁾	-0.5	4.6	V
V_O	Output voltage range in the high or low state ⁽²⁾	-0.5	$V_{CC} + 0.5$	V
I_{IK}	Input clamp current	$V_I < 0$	-50	mA
I_{OK}	Output clamp current	$V_O < 0$	-50	mA
I_O	Continuous output current		±20	mA
	Continuous current through V_{CC} or GND		±50	mA
θ_{JA}	Package thermal impedance ⁽³⁾	DBV package	206	°C/W
		DCK package	252	
		YEP/YZP package	132	
T_{stg}	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 negative-voltage and output voltage ratings may be exceeded if the input and output current ratings are observed.
- (3) The package thermal impedance is calculated in accordance with JESD 51-7.

Recommended Operating Conditions⁽¹⁾

		MIN	MAX	UNIT	
V_{CC}	Supply voltage	0.8	3.6	V	
V_{IH}	High-level input voltage	$V_{CC} = 0.8$ V	V_{CC}	3.6	
		$V_{CC} = 1.1$ V to 1.95 V	$0.65 \times V_{CC}$	3.6	
		$V_{CC} = 2.3$ V to 2.7 V	1.6	3.6	
		$V_{CC} = 3$ V to 3.6 V	2	3.6	
V_{IL}	Low-level input voltage	$V_{CC} = 0.8$ V	0	V	
		$V_{CC} = 1.1$ V to 1.95 V	0		$0.35 \times V_{CC}$
		$V_{CC} = 2.3$ V to 2.7 V	0		0.7
		$V_{CC} = 3$ V to 3.6 V	0		0.9
V_O	Output voltage	Active state	0	V_{CC}	
		3-state	0	3.6	
$\Delta t/\Delta v$	Input transition rise or fall rate		200	ns/V	
T_A	Operating free-air temperature	-40	85	°C	

- (1) The A data input pins may be floated if the \overline{OE} is high and the outputs are disabled; otherwise, all unused inputs of the device must be held at V_{CC} or GND to ensure proper device operation. Refer to the TI application report, *Implications of Slow or Floating CMOS Inputs*, literature number SCBA004.

SN74AUP1G240

LOW-POWER SINGLE BUFFER/DRIVER WITH 3-STATE OUTPUT

SCES627A—MARCH 2005—REVISED AUGUST 2006

Electrical Characteristics

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

PARAMETER	TEST CONDITIONS	V _{CC}	T _A = 25°C			T _A = -40°C to 85°C		UNIT
			MIN	TYP	MAX	MIN	MAX	
V _{OH}	I _{OH} = -20 μA	0.8 V to 3.6 V	V _{CC} - 0.1			V _{CC} - 0.1		V
	I _{OH} = -1.1 mA	1.1 V	0.75 × V _{CC}			0.7 × V _{CC}		
	I _{OH} = -1.7 mA	1.4 V	1.11			1.03		
	I _{OH} = -1.9 mA	1.65 V	1.32			1.3		
	I _{OH} = -2.3 mA	2.3 V	2.05			1.97		
	I _{OH} = -3.1 mA		1.9			1.85		
	I _{OH} = -2.7 mA	3 V	2.72			2.67		
	I _{OH} = -4 mA		2.6			2.55		
V _{OL}	I _{OL} = 20 μA	0.8 V to 3.6 V	0.1			0.1		V
	I _{OL} = 1.1 mA	1.1 V	0.3 × V _{CC}			0.3 × V _{CC}		
	I _{OL} = 1.7 mA	1.4 V	0.31			0.37		
	I _{OL} = 1.9 mA	1.65 V	0.31			0.35		
	I _{OL} = 2.3 mA	2.3 V	0.31			0.33		
	I _{OL} = 3.1 mA		0.44			0.45		
	I _{OL} = 2.7 mA	3 V	0.31			0.33		
	I _{OL} = 4 mA		0.44			0.45		
I _I	A or \overline{OE} input	V _I = GND to 3.6 V	0 V to 3.6 V			0.1	0.5	μA
I _{off}		V _I or V _O = 0 V to 3.6 V	0 V			0.2	0.6	μA
ΔI _{off}		V _I or V _O = 0 V to 3.6 V	0 V to 0.2 V			0.2	0.6	μA
I _{oz}		V _O = V _{CC} or GND	3.6 V			0.1	0.5	μA
I _{CC}		V _I = GND or (V _{CC} to 3.6 V), \overline{OE} = GND, I _O = 0	0.8 V to 3.6 V			0.5	0.9	μA
ΔI _{CC}	A input	V _I = V _{CC} - 0.6 V, ⁽¹⁾	3.3 V			40	50	μA
	\overline{OE} input	I _O = 0				110	120	
	All inputs	V _I = GND to 3.6 V, \overline{OE} = V _{CC} ⁽²⁾	0.8 V to 3.6 V			0	0	
C _I	V _I = V _{CC} or GND	0 V	1.5					pF
		3.6 V	1.5					
C _O	V _O = V _{CC} or GND	3.6 V	3					pF

(1) One input at V_{CC} - 0.6 V, other input at V_{CC} or GND

(2) To show I_{CC} is very low when \overline{OE} is high and the inputs and outputs are disabled

Switching Characteristics

over recommended operating free-air temperature range, $C_L = 5 \text{ pF}$ (unless otherwise noted) (see [Figure 3](#) and [Figure 4](#))

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC}	$T_A = 25^\circ\text{C}$			$T_A = -40^\circ\text{C}$ to 85°C		UNIT
				MIN	TYP	MAX	MIN	MAX	
t_{pd}	A	Y	0.8 V	17.1					ns
			$1.2 \text{ V} \pm 0.1 \text{ V}$	4.4	7.5	10.3	3.5	15.5	
			$1.5 \text{ V} \pm 0.1 \text{ V}$	3.3	5.4	6.9	2.3	10.3	
			$1.8 \text{ V} \pm 0.15 \text{ V}$	2.6	4.4	5.8	1.8	8.3	
			$2.5 \text{ V} \pm 0.2 \text{ V}$	1.9	3.3	4.3	1.3	5.8	
			$3.3 \text{ V} \pm 0.3 \text{ V}$	1.6	2.7	3.6	1	4.7	
t_{en}	\overline{OE}	Y	0.8 V	16.5					ns
			$1.2 \text{ V} \pm 0.1 \text{ V}$	4.5	8.1	13.4	3	18.6	
			$1.5 \text{ V} \pm 0.1 \text{ V}$	3.8	5.7	8.4	2.8	12.2	
			$1.8 \text{ V} \pm 0.15 \text{ V}$	3.1	4.5	6.3	2.3	9.7	
			$2.5 \text{ V} \pm 0.2 \text{ V}$	2.4	3.2	4.1	1.8	6.6	
			$3.3 \text{ V} \pm 0.3 \text{ V}$	2.1	2.7	3.3	1.5	5.6	
t_{dis}	\overline{OE}	Y	0.8 V	9					ns
			$1.2 \text{ V} \pm 0.1 \text{ V}$	2.6	2.6	4.7	2.2	8.4	
			$1.5 \text{ V} \pm 0.1 \text{ V}$	2	2.8	3.2	1.7	5.9	
			$1.8 \text{ V} \pm 0.15 \text{ V}$	1.8	2.5	3.1	1.6	5.5	
			$2.5 \text{ V} \pm 0.2 \text{ V}$	1.3	1.9	2.1	1.1	4	
			$3.3 \text{ V} \pm 0.3 \text{ V}$	1.6	2.4	2.9	1.4	4.1	

Switching Characteristics

over recommended operating free-air temperature range, $C_L = 10 \text{ pF}$ (unless otherwise noted) (see [Figure 3](#) and [Figure 4](#))

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC}	$T_A = 25^\circ\text{C}$			$T_A = -40^\circ\text{C}$ to 85°C		UNIT
				MIN	TYP	MAX	MIN	MAX	
t_{pd}	A	Y	0.8 V	19.5					ns
			$1.2 \text{ V} \pm 0.1 \text{ V}$	5.4	8.6	11.5	4.4	17.3	
			$1.5 \text{ V} \pm 0.1 \text{ V}$	4	6.2	7.7	3	11.3	
			$1.8 \text{ V} \pm 0.15 \text{ V}$	3.3	5.1	6.5	2.4	9.1	
			$2.5 \text{ V} \pm 0.2 \text{ V}$	2.5	3.8	4.9	1.8	6.3	
			$3.3 \text{ V} \pm 0.3 \text{ V}$	2	3.2	4.1	1.5	5.2	
t_{en}	\overline{OE}	Y	0.8 V	18.7					ns
			$1.2 \text{ V} \pm 0.1 \text{ V}$	5.1	8.9	14.4	3.7	20.9	
			$1.5 \text{ V} \pm 0.1 \text{ V}$	4.3	6.3	9.1	3.3	13.7	
			$1.8 \text{ V} \pm 0.15 \text{ V}$	3.6	5	6.8	2.8	10.9	
			$2.5 \text{ V} \pm 0.2 \text{ V}$	2.8	3.7	4.6	2.2	7.7	
			$3.3 \text{ V} \pm 0.3 \text{ V}$	2.5	3.1	3.7	1.9	6.3	
t_{dis}	\overline{OE}	Y	0.8 V	9.7					ns
			$1.2 \text{ V} \pm 0.1 \text{ V}$	4.1	5.3	6.6	3.9	12.9	
			$1.5 \text{ V} \pm 0.1 \text{ V}$	2.4	3.7	4.6	2.1	9.6	
			$1.8 \text{ V} \pm 0.15 \text{ V}$	2.7	3.6	3.9	2.4	10.1	
			$2.5 \text{ V} \pm 0.2 \text{ V}$	1.7	2.5	2.8	1.5	7.3	
			$3.3 \text{ V} \pm 0.3 \text{ V}$	2.5	3.2	3.8	2.2	9.1	

SN74AUP1G240
LOW-POWER SINGLE BUFFER/DRIVER
WITH 3-STATE OUTPUT

SCES627A—MARCH 2005—REVISED AUGUST 2006

Switching Characteristics

over recommended operating free-air temperature range, $C_L = 15$ pF (unless otherwise noted) (see [Figure 3](#) and [Figure 4](#))

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC}	$T_A = 25^\circ\text{C}$			$T_A = -40^\circ\text{C}$ to 85°C		UNIT
				MIN	TYP	MAX	MIN	MAX	
t_{pd}	A	Y	0.8 V	22.4					ns
			$1.2\text{ V} \pm 0.1\text{ V}$	6.4	9.7	12.9	5.4	19.8	
			$1.5\text{ V} \pm 0.1\text{ V}$	4.8	7.1	8.7	3.8	13.3	
			$1.8\text{ V} \pm 0.15\text{ V}$	3.9	5.8	7.2	3.1	10.8	
			$2.5\text{ V} \pm 0.2\text{ V}$	2.9	4.4	5.4	2.3	7.6	
t_{en}	\overline{OE}	Y	0.8 V	23.3					ns
			$1.2\text{ V} \pm 0.1\text{ V}$	6	10.1	15.8	4.6	22.9	
			$1.5\text{ V} \pm 0.1\text{ V}$	4.9	7	9.9	3.9	15	
			$1.8\text{ V} \pm 0.15\text{ V}$	4	5.5	7.5	3.3	12.1	
			$2.5\text{ V} \pm 0.2\text{ V}$	3.2	4	4.9	2.6	8.6	
t_{dis}	\overline{OE}	Y	0.8 V	11.1					ns
			$1.2\text{ V} \pm 0.1\text{ V}$	4.1	5.3	5.8	3	14	
			$1.5\text{ V} \pm 0.1\text{ V}$	2.7	4	5.5	2.4	10.1	
			$1.8\text{ V} \pm 0.15\text{ V}$	3.1	4.5	5.4	2.9	10.9	
			$2.5\text{ V} \pm 0.2\text{ V}$	2.4	3	3.2	1.6	7.9	
			$3.3\text{ V} \pm 0.3\text{ V}$	3.3	4.7	5.4	3	10	

Switching Characteristics

over recommended operating free-air temperature range, $C_L = 30$ pF (unless otherwise noted) (see [Figure 3](#) and [Figure 4](#))

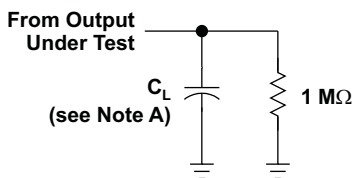
PARAMETER	FROM (INPUT)	TO (OUTPUT)	V_{CC}	$T_A = 25^\circ\text{C}$			$T_A = -40^\circ\text{C}$ to 85°C		UNIT
				MIN	TYP	MAX	MIN	MAX	
t_{pd}	A	Y	0.8 V	29					ns
			$1.2\text{ V} \pm 0.1\text{ V}$	8.9	12.6	16.1	7.3	25.7	
			$1.5\text{ V} \pm 0.1\text{ V}$	6.8	9.2	11	5.5	17.1	
			$1.8\text{ V} \pm 0.15\text{ V}$	5.5	7.6	9.2	4.5	13.8	
			$2.5\text{ V} \pm 0.2\text{ V}$	4.2	5.7	6.8	3.5	9.7	
t_{en}	\overline{OE}	Y	0.8 V	30.9					ns
			$1.2\text{ V} \pm 0.1\text{ V}$	8.2	12.6	18.5	6.8	27.4	
			$1.5\text{ V} \pm 0.1\text{ V}$	6.6	8.8	11.8	5.6	18	
			$1.8\text{ V} \pm 0.15\text{ V}$	5.5	7.1	9.1	4.7	14.2	
			$2.5\text{ V} \pm 0.2\text{ V}$	4.4	5.3	6.2	3.8	10.2	
t_{dis}	\overline{OE}	Y	0.8 V	14					ns
			$1.2\text{ V} \pm 0.1\text{ V}$	5	6.2	7.4	4.8	14.8	
			$1.5\text{ V} \pm 0.1\text{ V}$	4.2	5.7	7.7	3.9	10.8	
			$1.8\text{ V} \pm 0.15\text{ V}$	5.1	7.2	9	4.9	11.7	
			$2.5\text{ V} \pm 0.2\text{ V}$	4.3	5.3	5.9	4.1	9.1	
			$3.3\text{ V} \pm 0.3\text{ V}$	7.4	8.3	9.4	4.3	11.6	

Operating Characteristics

$T_A = 25^\circ\text{C}$

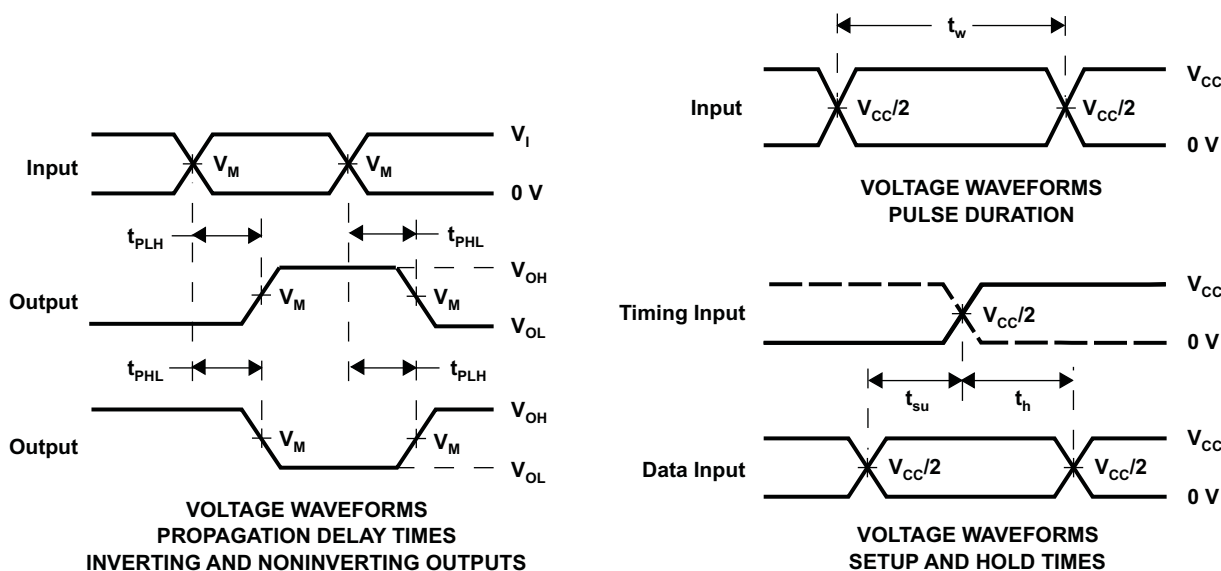
PARAMETER		TEST CONDITIONS	V_{CC}	TYP	UNIT
C_{pd} Power dissipation capacitance	Outputs enabled	f = 10 MHz	0.8 V	4	pF
			$1.2\text{ V} \pm 0.1\text{ V}$	3.9	
			$1.5\text{ V} \pm 0.1\text{ V}$	3.9	
			$1.8\text{ V} \pm 0.15\text{ V}$	3.9	
			$2.5\text{ V} \pm 0.2\text{ V}$	4	
			$3.3\text{ V} \pm 0.3\text{ V}$	4.2	
	Outputs disabled		0.8 V	0	
			$1.2\text{ V} \pm 0.1\text{ V}$	0	
			$1.5\text{ V} \pm 0.1\text{ V}$	0	
			$1.8\text{ V} \pm 0.15\text{ V}$	0	
			$2.5\text{ V} \pm 0.2\text{ V}$	0	
			$3.3\text{ V} \pm 0.3\text{ V}$	0	

PARAMETER MEASUREMENT INFORMATION
(Propagation Delays, Setup and Hold Times, and Pulse Width)



LOAD CIRCUIT

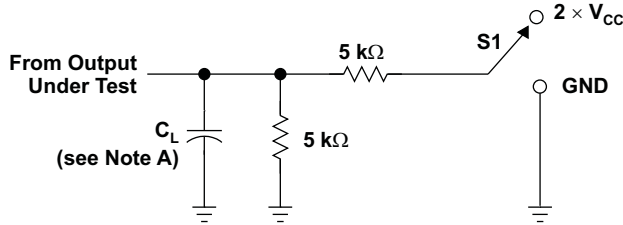
	$V_{CC} = 0.8 \text{ V}$	$V_{CC} = 1.2 \text{ V}$ $\pm 0.1 \text{ V}$	$V_{CC} = 1.5 \text{ V}$ $\pm 0.1 \text{ V}$	$V_{CC} = 1.8 \text{ V}$ $\pm 0.15 \text{ V}$	$V_{CC} = 2.5 \text{ V}$ $\pm 0.2 \text{ V}$	$V_{CC} = 3.3 \text{ V}$ $\pm 0.3 \text{ V}$
C_L	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF
V_M	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$
V_I	V_{CC}	V_{CC}	V_{CC}	V_{CC}	V_{CC}	V_{CC}



- NOTES: A. C_L includes probe and jig capacitance.
B. All input pulses are supplied by generators having the following characteristics: $PRR \leq 10 \text{ MHz}$, $Z_O = 50 \Omega$, $t_r/t_f = 3 \text{ ns}$.
C. The outputs are measured one at a time, with one transition per measurement.
D. t_{PLH} and t_{PHL} are the same as t_{pd} .
E. All parameters and waveforms are not applicable to all devices.

Figure 3. Load Circuit and Voltage Waveforms

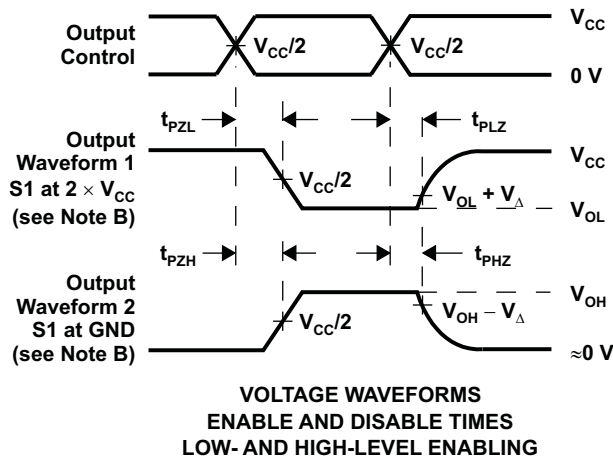
PARAMETER MEASUREMENT INFORMATION
(Enable and Disable Times)



TEST	S1
t_{PLZ}/t_{PZL}	$2 \times V_{CC}$
t_{PHZ}/t_{PZH}	GND

LOAD CIRCUIT

	$V_{CC} = 0.8 \text{ V}$	$V_{CC} = 1.2 \text{ V}$ $\pm 0.1 \text{ V}$	$V_{CC} = 1.5 \text{ V}$ $\pm 0.1 \text{ V}$	$V_{CC} = 1.8 \text{ V}$ $\pm 0.15 \text{ V}$	$V_{CC} = 2.5 \text{ V}$ $\pm 0.2 \text{ V}$	$V_{CC} = 3.3 \text{ V}$ $\pm 0.3 \text{ V}$
C_L	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF	5, 10, 15, 30 pF
V_M	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$	$V_{CC}/2$
V_I	V_{CC}	V_{CC}	V_{CC}	V_{CC}	V_{CC}	V_{CC}
V_{Δ}	0.1 V	0.1 V	0.1 V	0.15 V	0.15 V	0.3 V



- 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 $\leq 10 \text{ MHz}$, $Z_O = 50 \Omega$, $t_r/t_f = 3 \text{ ns}$.
 D. The outputs are measured one at a time, with one transition per measurement.
 E. t_{PLZ} and t_{PHZ} are the same as t_{dis} .
 F. t_{PZL} and t_{PZH} are the same as t_{en} .
 G. All parameters and waveforms are not applicable to all devices.

Figure 4. Load Circuit and Voltage Waveforms

PACKAGING INFORMATION

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/Ball Finish	MSL Peak Temp ⁽³⁾
74AUP1G240DBVRE4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DBVTE4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DCKRE4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DCKTE4	ACTIVE	SC70	DCK	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74AUP1G240DCKTG4	ACTIVE	SC70	DCK	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74AUP1G240DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74AUP1G240DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74AUP1G240DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74AUP1G240DCKT	ACTIVE	SC70	DCK	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74AUP1G240YZPR	ACTIVE	WCSP	YZP	5	3000	Green (RoHS & no Sb/Br)	SNAGCU	Level-1-260C-UNLIM

⁽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.

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TAPE AND REEL INFORMATION



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
SN74AUP1G240DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.23	3.17	1.37	4.0	8.0	Q3
SN74AUP1G240DBVT	SOT-23	DBV	5	250	180.0	9.2	3.23	3.17	1.37	4.0	8.0	Q3
SN74AUP1G240DCKR	SC70	DCK	5	3000	180.0	9.2	2.24	2.34	1.22	4.0	8.0	Q3
SN74AUP1G240DCKT	SC70	DCK	5	250	180.0	9.2	2.24	2.34	1.22	4.0	8.0	Q3

TAPE AND REEL BOX DIMENSIONS

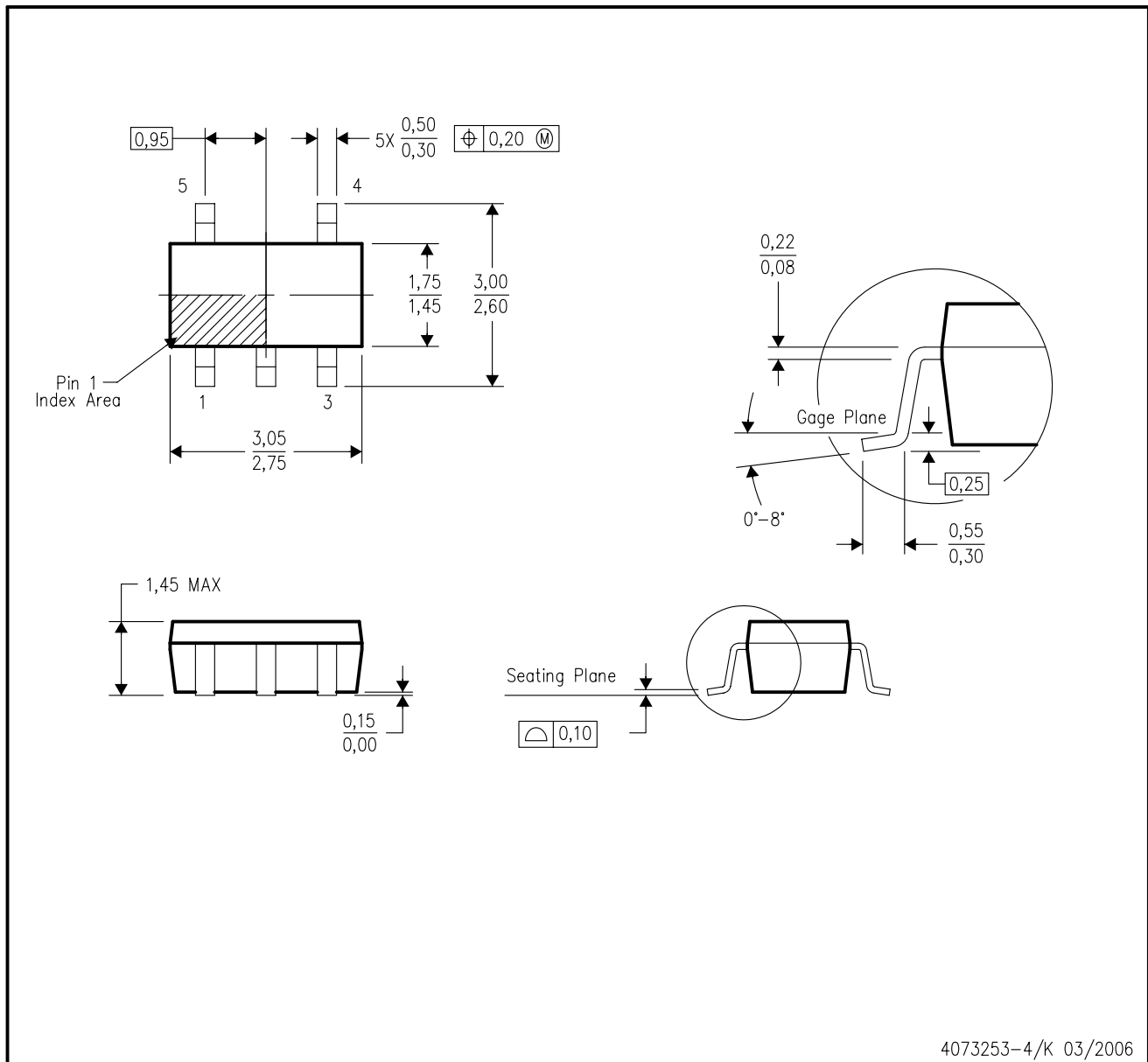


*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74AUP1G240DBVR	SOT-23	DBV	5	3000	202.0	201.0	28.0
SN74AUP1G240DBVT	SOT-23	DBV	5	250	202.0	201.0	28.0
SN74AUP1G240DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
SN74AUP1G240DCKT	SC70	DCK	5	250	202.0	201.0	28.0

DBV (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-178 Variation AA.

DCK (R-PDSO-G5)

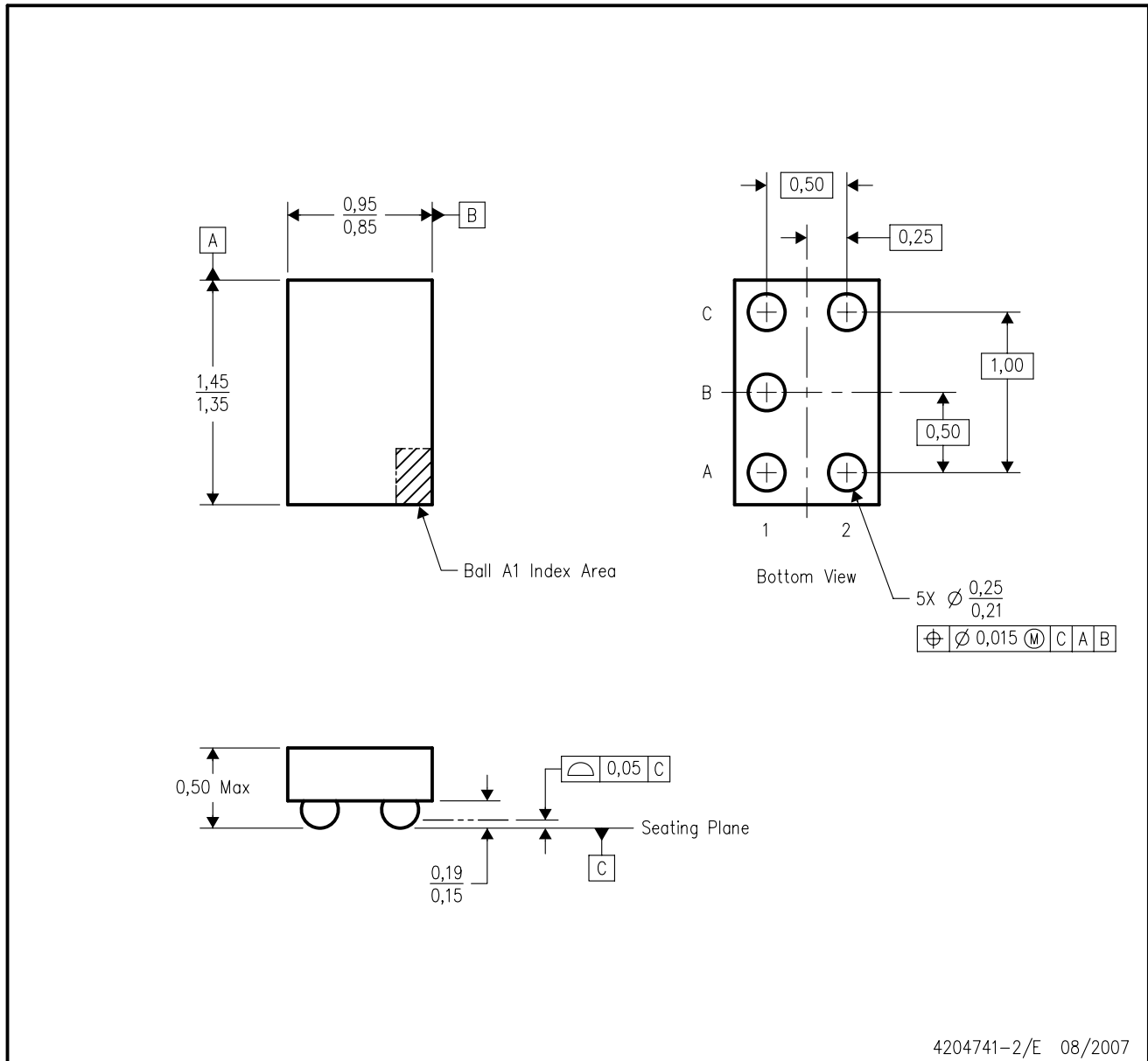
PLASTIC SMALL-OUTLINE PACKAGE



- 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.

YZP (R-XBGA-N5)

DIE-SIZE BALL GRID ARRAY



- 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. NanoFree™ package configuration.
 - D. This package is lead-free. Refer to the 5 YEP package (drawing 4204725) for tin-lead (SnPb).

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