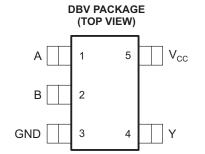
www.ti.com

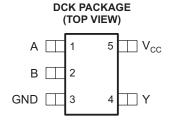
SCES546B-FEBRUARY 2004-REVISED SEPTEMBER 2006

FEATURES

- Available in Texas Instruments NanoStar[™] and NanoFree[™] Packages
- Supports 5-V V_{CC} Operation
- Inputs Accept Voltages to 5.5 V
- Max t_{pd} of 5.3 ns at 3.3 V
- Low Power Consumption, 10-μA Max I_{CC}
- ±24-mA Output Drive at 3.3 V

- I_{off} Supports Partial-Power-Down Mode Operation
- Latch-Up Performance Exceeds 100 mA Per JESD 78, Class II
- ESD Protection Exceeds JESD 22
 - 2000-V Human-Body Model (A114-A)
 - 200-V Machine Model (A115-A)
 - 1000-V Charged-Device Model (C101)







See mechanical drawings for dimensions.

DESCRIPTION/ORDERING INFORMATION

The SN74LVC1G132 contains one 2-input NAND gate with Schmitt-trigger inputs designed for 1.65-V to 5.5-V V_{CC} operation and performs the Boolean function $Y = \overline{A} \bullet \overline{B}$ or $Y = \overline{A} + \overline{B}$ in positive logic.

Because of Schmitt action, this device has different input threshold levels for positive-going (V_{T+}) and negative-going (V_{T-}) signals.

This device can be triggered from the slowest of input ramps and still give clean jitter-free output signals.

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.

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

ORDERING INFORMATION

T _A	PACKAGE ⁽¹⁾		ORDERABLE PART NUMBER	TOP-SIDE MARKING ⁽²⁾	
	NanoStar™ – WCSP (DSBGA) 0.23-mm Large Bump – YEP		SN74LVC1G132YEPR		
–40°C to 85°C	NanoFree [™] – WCSP (DSBGA) 0.23-mm Large Bump – YZP (Pb-free)	n Large Bump – YZP		D5_	
-40 C 10 03 C	SOT (SOT-23) – DBV	Reel of 3000	SN74LVC1G132DBVR	- C3B	
	301 (301-23) – DBV	Reel of 250	SN74LVC1G132DBVT	C3B_	
	SOT (SC-70) – DCK	Reel of 3000	SN74LVC1G132DCKR	D5	
	301 (30-70) – DOK	Reel of 250	SN74LVC1G132DCKT	D3_	

⁽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).



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.

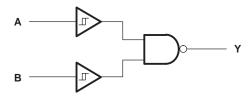
NanoStar, NanoFree are trademarks of Texas Instruments.



FUNCTION TABLE

INF	PUTS	OUTPUT				
Α	В	Y				
L	L	Н				
L	Н	Н				
Н	L	Н				
Н	Н	L				

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	6.5	V	
VI	Input voltage range (2)		-0.5	6.5	V	
Vo	Voltage range applied to any output in the high-impedance or power-off state (2)		-0.5	6.5	V	
Vo	Voltage range applied to any output in the high or low state (2)(3)		-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	
Io	Continuous output current			±50	mA	
	Continuous current through V _{CC} or GND			±100	mA	
		DBV package		206		
θ_{JA}	Package thermal impedance ⁽⁴⁾	DCK package		252	°C/W	
		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 and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.

⁽³⁾ The value of V_{CC} is provided in the recommended operating conditions table.

⁽⁴⁾ The package thermal impedance is calculated in accordance with JESD 51-7.

SCES546B-FEBRUARY 2004-REVISED SEPTEMBER 2006

Recommended Operating Conditions⁽¹⁾

			MIN	MAX	UNIT	
V	Complementary	Operating	1.65 5.5		V	
V _{CC}	Supply voltage	Data retention only	1.5		V	
V_{I}	Input voltage		0	5.5	V	
Vo	Output voltage		0	V_{CC}	V	
		V _{CC} = 1.65 V		-4		
		V _{CC} = 2.3 V		-8	mA	
I_{OH}	High-level output current	V 2V		-16		
		V _{CC} = 3 V		-24		
		$V_{CC} = 4.5 \text{ V}$		-32		
		V _{CC} = 1.65 V		4		
		$V_{CC} = 2.3 \text{ V}$		8		
I_{OL}	Low-level output current	V 2V		16	mA	
		V _{CC} = 3 V		24		
		V _{CC} = 4.5 V		32		
T _A	Operating free-air temperature		-40	85	°C	

⁽¹⁾ 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.

SN74LVC1G132 SINGLE 2-INPUT NAND GATE WITH SCHMITT-TRIGGER INPUTS

SCES546B-FEBRUARY 2004-REVISED SEPTEMBER 2006



Electrical Characteristics

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

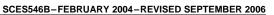
PARAMETER	TEST CONDITIONS	V _{cc}	MIN TYP(1) MAX	UNIT			
		1.65 V	0.79 1.16				
V_{T+}		2.3 V	1.11 1.56				
Positive-going input threshold		3 V	1.5 1.87	V			
voltage		4.5 V	2.16 2.74				
		5.5 V	2.61 3.33				
		1.65 V	0.39 0.62				
V_{T-}		2.3 V	0.58 0.87				
Negative-going input threshold		3 V	0.84 1.14	V			
voltage		4.5 V	1.41 1.79				
		5.5 V	1.87 2.29	1			
		1.65 V	0.37 0.62				
ΔV_{T}		2.3 V	0.48 0.77				
Hysteresis		3 V	0.56 0.87	V			
$(V_{T+} - V_{T-})$		4.5 V	0.71 1.04				
		5.5 V	0.71 1.11				
	$I_{OH} = -100 \mu\text{A}$	1.65 V to 5.5 V	V _{CC} - 0.1				
	$I_{OH} = -4 \text{ mA}$	1.65 V	1.2				
	$I_{OH} = -8 \text{ mA}$	2.3 V	1.9	.,			
V_{OH}	I _{OH} = -16 mA	0.17	2.4	V			
	I _{OH} = -24 mA	3 V	2.3				
	I _{OH} = -32 mA	4.5 V	3.8				
	I _{OL} = 100 μA	1.65 V to 5.5 V	0.1				
	I _{OL} = 4 mA	1.65 V	0.45				
	I _{OL} = 8 mA	2.3 V	0.3	.,			
V_{OL}	I _{OL} = 16 mA	0.17	0.4	V			
	I _{OL} = 24 mA	3 V	0.55				
	I _{OL} = 32 mA	4.5 V	0.55				
I _I A or B inputs	V _I = 5.5 V or GND	1.65 V to 5.5 V	±1	μΑ			
I _{off}	V_I or $V_O = 5.5 \text{ V}$	0	±10	μΑ			
I _{CC}	$V_I = V_{CC}$ or GND, $I_O = 0$	1.65 V to 5.5 V	10	μΑ			
Δl _{CC}	One input at V _{CC} – 0.6 V, Other inputs at V _{CC} or GND	3 V to 5.5 V	500	μΑ			
C _i	V _I = V _{CC} or GND	3.3 V	3.5	pF			

⁽¹⁾ All typical values are at $V_{CC} = 3.3 \text{ V}$, $T_A = 25^{\circ}\text{C}$.

Switching Characteristics

over recommended operating free-air temperature range, $C_L = 15 \text{ pF}$ (unless otherwise noted) (see Figure 1)

	PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} = 1.8 V ±0.15 V		V_{CC} = 2.5 V ± 0.2 V		V _{CC} = 3.3 V ±0.3 V		V _{CC} = 5 V ±0.5 V		UNIT	
				MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
	t _{pd}	A or B	Υ	4	16	2.5	7	2	5.3	1.5	4.4	ns	





Switching Characteristics

over recommended operating free-air temperature range, $C_L = 30 \text{ pF}$ or 50 pF (unless otherwise noted) (see Figure 2)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} = 1.8 V ±0.15 V		V _{CC} = 2.5 V ±0.2 V		V _{CC} = 3.3 V ±0.3 V		V _{CC} = 5 V ±0.5 V		UNIT
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	ı
t _{pd}	A or B	Y	4	16	3	7.5	2	6	2	5	ns

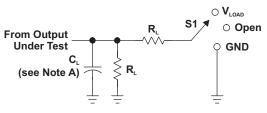
Operating Characteristics

 $T_A = 25^{\circ}C$

	PARAMETER	TEST	V _{CC} = 1.8 V	V _{CC} = 2.5 V	V _{CC} = 3.3 V	V _{CC} = 5 V	UNIT	
	TANAMETER	CONDITIONS	TYP	TYP	TYP	TYP	0.4	
C_{pd}	Power dissipation capacitance	f = 10 MHz	17	18	18	20	pF	



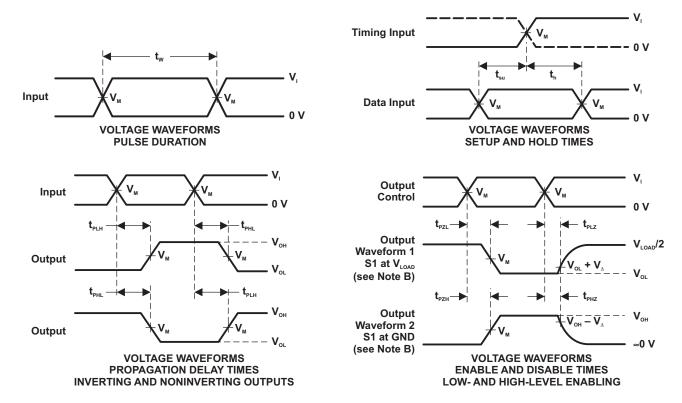
PARAMETER MEASUREMENT INFORMATION



TEST	S1
t _{PLH} /t _{PHL}	Open
t_{PLZ}/t_{PZL}	V _{LOAD}
t _{PHZ} /t _{PZH}	GND

LOAD CIRCUIT

.,	INPUTS			V			.,
V _{cc}	V,	t,/t,	V _M	V _{LOAD}	C _L	R _L	V _Δ
1.8 V ± 0.15 V	V _{cc}	≤2 ns	V _{cc} /2	2 × V _{cc}	15 pF	1 M Ω	0.15 V
$2.5 \text{ V} \pm 0.2 \text{ V}$	V _{cc}	≤2 ns	V _{cc} /2	2 × V _{cc}	15 pF	1 M Ω	0.15 V
$3.3~V~\pm~0.3~V$	3 V	≤2.5 ns	1.5 V	6 V	15 pF	1 M Ω	0.3 V
5 V ± 0.5 V	V _{cc}	≤2.5 ns	V _{cc} /2	2 × V _{cc}	15 pF	1 M Ω	0.3 V



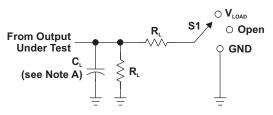
NOTES: A. C_L includes probe and jig capacitance.

- 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 MHz, Z_o = 50 Ω .
- D. The outputs are measured one at a time, with one transition per measurement.
- E. t_{PLZ} and \dot{t}_{PHZ} are the same as t_{dis} .
- F. t_{PZL} and t_{PZH} are the same as t_{en} .
- G. t_{PLH} and t_{PHL} are the same as t_{pd} .
- H. All parameters and waveforms are not applicable to all devices.

Figure 1. Load Circuit and Voltage Waveforms



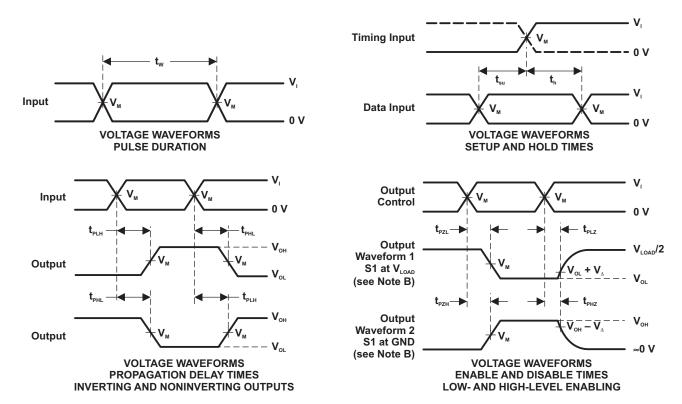
PARAMETER MEASUREMENT INFORMATION



TEST	S1
t _{PLH} /t _{PHL}	Open
t_{PLZ}/t_{PZL}	V _{LOAD}
t _{PHZ} /t _{PZH}	GND

LOAD CIRCUIT

V	INPUTS		V	V			V	
V _{cc}	V,	t,/t,	V _M	V _{LOAD}	C _L	R _⊾	V _A	
1.8 V ± 0.15 V	V _{cc}	≤2 ns	V _{cc} /2	2 × V _{cc}	30 pF	1 k Ω	0.15 V	
2.5 V ± 0.2 V	V _{cc}	≤2 ns	V _{cc} /2	2 × V _{cc}	30 pF	500 Ω	0.15 V	
3.3 V ± 0.3 V	3 V	≤2.5 ns	1.5 V	6 V	50 pF	500 Ω	0.3 V	
5 V ± 0.5 V	V _{cc}	≤2.5 ns	V _{cc} /2	2 × V _{cc}	50 pF	500 Ω	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 MHz, Z_o = 50 Ω .
- D. The outputs are measured one at a time, with one transition per measurement.
- E. t_{PLZ} and \dot{t}_{PHZ} are the same as t_{dis} .
- F. t_{PZL} and t_{PZH} are the same as t_{en} .
- G. t_{PLH} and t_{PHL} are the same as t_{pd} .
- H. All parameters and waveforms are not applicable to all devices.

Figure 2. Load Circuit and Voltage Waveforms





i.com 27-Nov-2008

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Packag Qty	e Eco Plan ⁽²⁾	Lead/Ball Finish	n MSL Peak Temp ⁽³⁾
74LVC1G132DBVRG4	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74LVC1G132DBVTE4	ACTIVE	SOT-23	DBV	5		TBD	Call TI	Call TI
74LVC1G132DCKRE4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74LVC1G132DCKRG4	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74LVC1G132DCKTE4	ACTIVE	SC70	DCK	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74LVC1G132DCKTG4	ACTIVE	SC70	DCK	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132DBVR	ACTIVE	SOT-23	DBV	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132DBVT	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132DBVTE4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132DBVTG4	ACTIVE	SOT-23	DBV	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132DCKR	ACTIVE	SC70	DCK	5	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132DCKT	ACTIVE	SC70	DCK	5	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
SN74LVC1G132YZPR	ACTIVE	DSBGA	YZP	5	3000	TBD	Call TI	Call TI

(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.

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.



PACKAGE OPTION ADDENDUM

27-Nov-2008

In no event shall TI's liabil to Customer on an annual	lity arising out of such inforr I basis.	mation exceed the total p	ourchase price of the TI pa	art(s) at issue in this do	cument sold by Ti



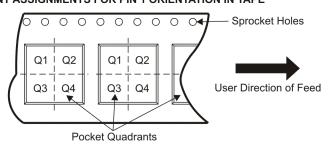
TAPE AND REEL INFORMATION



TAPE DIMENSIONS + K0 - P1 - B0 W Cavity - 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		SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
SN74LVC1G132DBVR	SOT-23	DBV	5	3000	180.0	9.2	3.23	3.17	1.37	4.0	8.0	Q3
SN74LVC1G132DBVT	SOT-23	DBV	5	250	180.0	9.2	3.23	3.17	1.37	4.0	8.0	Q3
SN74LVC1G132DCKR	SC70	DCK	5	3000	180.0	9.2	2.24	2.34	1.22	4.0	8.0	Q3
SN74LVC1G132DCKT	SC70	DCK	5	250	180.0	9.2	2.24	2.34	1.22	4.0	8.0	Q3





*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LVC1G132DBVR	SOT-23	DBV	5	3000	202.0	201.0	28.0
SN74LVC1G132DBVT	SOT-23	DBV	5	250	202.0	201.0	28.0
SN74LVC1G132DCKR	SC70	DCK	5	3000	202.0	201.0	28.0
SN74LVC1G132DCKT	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



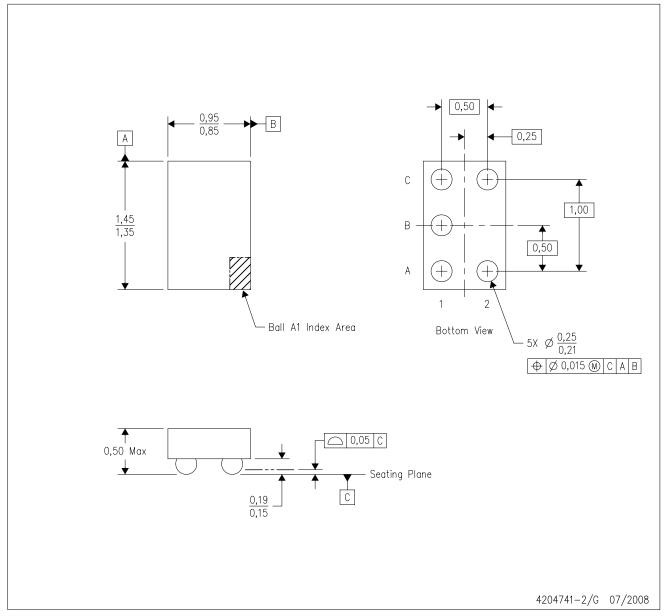
NOTES: A. All linear dimensions are in millimeters.

- 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 $^{\text{TM}}$ package configuration.
- D. This package is lead-free. Refer to the 5 YEP package (drawing 4204725) for tin-lead (SnPb).

NanoFree is a trademark of Texas Instruments.



IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products Amplifiers amplifier.ti.com Data Converters dataconverter.ti.com DSP dsp.ti.com Clocks and Timers www.ti.com/clocks Interface interface.ti.com Logic logic.ti.com Power Mgmt power.ti.com Microcontrollers microcontroller.ti.com www.ti-rfid.com RF/IF and ZigBee® Solutions www.ti.com/lprf

Applications	
Audio	www.ti.com/audio
Automotive	www.ti.com/automotive
Broadband	www.ti.com/broadband
Digital Control	www.ti.com/digitalcontrol
Medical	www.ti.com/medical
Military	www.ti.com/military
Optical Networking	www.ti.com/opticalnetwork
Security	www.ti.com/security
Telephony	www.ti.com/telephony
Video & Imaging	www.ti.com/video
Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265 Copyright © 2008, Texas Instruments Incorporated