## SN54BCT760, SN74BCT760 OCTAL BUFFERS/DRIVERS WITH OPEN-COLLECTOR OUTPUTS SCBS034B – JULY 1989 – REVISED NOVEMBER 1993

- Open-Collector Version of 'BCT244
- Open-Collector Outputs Drive Bus Lines or Buffer Memory Address Registers
- ESD Protection Exceeds 2000 V Per MIL-STD-883C Method 3015
- Packages Options Include Plastic Small-Outline (DW) Packages, Ceramic Chip Carriers (FK) and Flatpacks (W), and Standard Plastic and Ceramic 300-mil DIPs (J, N)

## description

These octal buffers and line drivers are designed specifically to improve both the performance and density of 3-state memory address drivers, clock drivers, and bus-oriented receivers and transmitters.

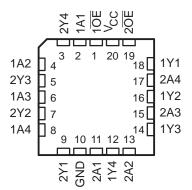
The 'BCT760 is organized as two 4-bit buffers/line drivers with separate output-enable ( $\overline{OE}$ ) inputs. When  $\overline{OE}$  is low, the device passes data from the A inputs to the Y outputs. When  $\overline{OE}$  is high, the outputs are in the high-impedance state.

The SN54BCT760 is characterized for operation over the full military temperature range of  $-55^{\circ}$ C to 125°C. The SN74BCT760 is characterized for operation from 0°C to 70°C.

SN54BCT760 J OR W PACKAGE										
SN74BCT760 DW OR N PACKAGE										

		= • • • )	
10E [ 1A1 [ 2Y4 [ 1A2 [ 2Y3 [ 1A3 [ 2Y2 [ 1A4 [ 2Y1 ]	1 2 3 4 5 6	20 19 18 17 16 15 14 13 12	V <u>CC</u> 20E 1Y1 2A4 1Y2 2A3 1Y3 2A2 1Y4
2Y1 [ GND [	9 10	12 11	] 1Y4 ] 2A1

#### SN54BCT760 . . . FK PACKAGE (TOP VIEW)



#### FUNCTION TABLE (each buffer)

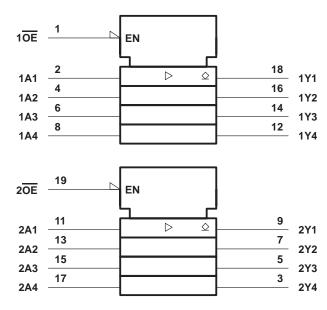
(cuon bunch)											
INP	UTS	OUTPUT									
OE	Α	Y									
L	Н	Н									
L	L	L									
н	Х	н									

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

# SN54BCT760, SN74BCT760 **OCTAL BUFFERS/DRIVERS** WITH OPEN-COLLECTOR OUTPUTS

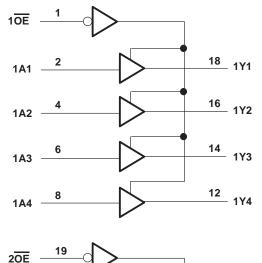
SCBS034B - JULY 1989 - REVISED NOVEMBER 1993

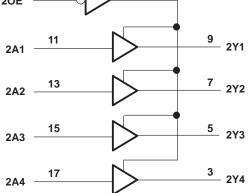
## logic symbol<sup>†</sup>



<sup>†</sup> This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

# logic diagram (positive logic)





# absolute maximum ratings over operating free-air temperature range (unless otherwise noted)<sup>‡</sup>

Supply voltage range, V <sub>CC</sub> Input voltage range, V <sub>I</sub> (see Note 1)	$\ldots$ – 0.5 V to 7 V
Input current range, I <sub>1</sub>	30 mA to 5 mA
Voltage range applied to any output in the disabled or power-off state, VO	$-$ 0.5 V to 5.5 V
Voltage range applied to any output in the high state, Vo	$\ldots$ – 0.5 V to V <sub>CC</sub>
Current into any output in the low state: SN54BCT760	96 mÅ
SN74BCT760	128 mA
Operating free-air temperature range: SN54BCT760	– 55°C to 125°C
SN74BCT760	0°C to 70°C
Storage temperature range	– 65°C to 150°C

<sup>‡</sup> 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.

NOTE 1: The negative input voltage rating may be exceeded if the input clamp current rating is observed.



# SN54BCT760, SN74BCT760 OCTAL BUFFERS/DRIVERS WITH OPEN-COLLECTOR OUTPUTS

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### recommended operating conditions

		SN54BCT760			SN	74BCT7	60	UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	UNIT
VCC	Supply voltage	4.5	5	5.5	4.5	5	5.5	V
VIH	High-level input voltage	2			2			V
VIL	Low-level input voltage			0.8			0.8	V
VOH	High-level output voltage			5.5			5.5	V
IIК	Input clamp current			-18			-18	mA
IOL	Low-level output current			48			64	mA
ТА	Operating free-air temperature	-55		125	0		70	°C

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

	TEST CONDIT	IONS	SN	I54BCT7	60	SN	UNIT		
	TEST CONDIT	10115	MIN	TYP†	MAX	MIN	TYP†	MAX	UNIT
V <sub>CC</sub> = 4.5 V,	lı = -18 mA				-1.2			-1.2	V
	I <sub>OL</sub> = 48 mA			0.38	0.55				V
VCC = 4.5 V	I <sub>OL</sub> = 64 mA						0.42	0.55	v
$V_{CC} = 5.5 V,$	VI = 7 V				0.1			0.1	mA
V <sub>CC</sub> = 5.5 V,	VI = 2.7 V				20			20	μA
$V_{CC} = 5.5 V,$	$V_{  } = 0.5 V$				-1			-1	mA
V <sub>CC</sub> = 4.5 V,	V <sub>OH</sub> = 5.5 V				0.1			0.1	mA
		Outputs high		21	33		21	33	
V <sub>CC</sub> = 5.5 V,	Outputs open	Outputs low		48	76		48	76	mA
		OE disabled		6	10		6	10	
V <sub>CC</sub> = 5 V,	V <sub>I</sub> = 2.5 V or 0.5		6			6		pF	
V <sub>CC</sub> = 5 V,	V <sub>I</sub> = 2.5 V or 0.5		10			10		pF	
	$V_{CC} = 4.5 V$ $V_{CC} = 5.5 V,$ $V_{CC} = 5.5 V,$ $V_{CC} = 5.5 V,$ $V_{CC} = 4.5 V,$ $V_{CC} = 5.5 V,$ $V_{CC} = 5.5 V,$ $V_{CC} = 5.5 V,$	$\label{eq:VCC} \begin{array}{c} V_{CC} = 4.5 \ V, & I_{I} = -18 \ \text{mA} \\ \\ V_{CC} = 4.5 \ V & \hline I_{OL} = 48 \ \text{mA} \\ \hline I_{OL} = 64 \ \text{mA} \\ \\ V_{CC} = 5.5 \ V, & V_{I} = 7 \ V \\ \\ V_{CC} = 5.5 \ V, & V_{I} = 2.7 \ V \\ \\ V_{CC} = 5.5 \ V, & V_{I} = 0.5 \ V \\ \\ V_{CC} = 4.5 \ V, & V_{OH} = 5.5 \ V \\ \\ \\ V_{CC} = 5.5 \ V, & Outputs \ open \\ \\ \\ V_{CC} = 5 \ V, & V_{I} = 2.5 \ V \ or \ 0. \end{array}$	$\begin{array}{c} V_{CC} = 4.5 \ V & \hline I_{OL} = 48 \ \text{mA} \\ \hline I_{OL} = 64 \ \text{mA} \\ \hline V_{CC} = 5.5 \ \text{V}, & V_{I} = 7 \ \text{V} \\ \hline V_{CC} = 5.5 \ \text{V}, & V_{I} = 2.7 \ \text{V} \\ \hline V_{CC} = 5.5 \ \text{V}, & V_{I} = 0.5 \ \text{V} \\ \hline V_{CC} = 4.5 \ \text{V}, & V_{OH} = 5.5 \ \text{V} \\ \hline V_{CC} = 5.5 \ \text{V}, & Outputs \ \text{open} \\ \hline \hline \begin{array}{c} Outputs \ \text{high} \\ \hline Outputs \ \text{low} \\ \hline \hline \overline{\text{OE}} \ \text{disabled} \\ \hline \end{array} \\ \hline V_{CC} = 5 \ \text{V}, & V_{I} = 2.5 \ \text{V} \ \text{or} \ 0.5 \ \text{V} \\ \hline \end{array}$	TEST CONDITIONS   MIN $V_{CC} = 4.5 \text{ V}$ I <sub>I</sub> = -18 mA $V_{CC} = 4.5 \text{ V}$ IOL = 48 mA $I_{OL} = 64 \text{ mA}$ IOL = 64 mA $V_{CC} = 5.5 \text{ V}$ , $V_I = 7 \text{ V}$ V $V_{CC} = 5.5 \text{ V}$ , $V_I = 2.7 \text{ V}$ V $V_{CC} = 5.5 \text{ V}$ , $V_I = 0.5 \text{ V}$ V $V_{CC} = 4.5 \text{ V}$ , $V_{OH} = 5.5 \text{ V}$ Outputs high $V_{CC} = 5.5 \text{ V}$ , Outputs open Outputs high $V_{CC} = 5.5 \text{ V}$ , $V_I = 2.5 \text{ V}$ or $0.5 \text{ V}$ V	$\begin{tabular}{ c c c c } \hline TEST CONDITIONS & \hline MIN TYPT \\ \hline V_{CC} = 4.5 V, & I_I = -18 mA & & & & & & & & & & & & & & & & & & $	$\begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} \\ \hline \mbox{V}_{CC} = 4.5 \ \mbox{V} & I_I = -18 \ \mbox{mA} & -1.2 \\ \hline \mbox{V}_{CC} = 4.5 \ \mbox{V} & I_{OL} = 48 \ \mbox{mA} & 0.38 & 0.55 \\ \hline \mbox{I}_{OL} = 64 \ \mbox{mA} & 0.38 & 0.55 \\ \hline \mbox{I}_{OL} = 64 \ \mbox{mA} & 0.38 & 0.55 \\ \hline \mbox{V}_{CC} = 5.5 \ \mbox{V} & \mbox{V}_I = 7 \ \mbox{V} & 0.1 \\ \hline \mbox{V}_{CC} = 5.5 \ \mbox{V} & \mbox{V}_I = 2.7 \ \mbox{V} & 0.1 \\ \hline \mbox{V}_{CC} = 5.5 \ \mbox{V} & \mbox{V}_I = 0.5 \ \mbox{V} & -11 \\ \hline \mbox{V}_{CC} = 5.5 \ \mbox{V} & \mbox{V}_I = 0.5 \ \mbox{V} & 0.1 \\ \hline \mbox{V}_{CC} = 5.5 \ \mbox{V} & \mbox{Outputs open} & \end{tabular} & \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	$\begin{tabular}{ c c c c c c } \hline TEST CONDITIONS & \hline MIN $$TYP$^{\dagger}$ $$MAX $$MIN$ \\ \hline VCC = 4.5 V, $$I_I = -18 $mA$ $$-1.2 $ \\ \hline U_{CC} = 4.5 V, $$I_{OL} = 48 $mA$ $$0.38 $$0.55 $\\ \hline I_{OL} = 64 $mA$ $$0.38 $$0.55 $\\ \hline U_{CC} = 5.5 V, $$V_I = 7 V$ $$0.1 $\\ \hline V_{CC} = 5.5 V, $$V_I = 7 V$ $$0.1 $\\ \hline V_{CC} = 5.5 V, $$V_I = 2.7 V$ $$0.1 $\\ \hline V_{CC} = 5.5 V, $$V_I = 0.5 V$ $$0.1 $\\ \hline V_{CC} = 4.5 V, $$V_{OH} = 5.5 V$ $$0.1 $\\ \hline V_{CC} = 5.5 V, $$V_{OH} = 5.5 V$ $$0.1 $\\ \hline V_{CC} = 5.5 V, $$Outputs open $$ $$0tputs high $$21 $$33 $\\ \hline 0utputs high $$21 $$33 $\\ \hline 0utputs low $$48 $$76 $\\ \hline \hline \overline{OE} $ disabled $$6 $$10 $\\ \hline V_{CC} = 5 V, $$V_I = 2.5 V $$ 0.5 V$ $$ $$6 $\\ \hline \end{tabular}$	$\begin{tabular}{ c c c c c c } \hline TEST CONDITIONS & \hline MIN $$TYPT$ $$MAX$ $$MIN $$TYPT$ $$MIN $$TYPT$ $$MAX$ $$MIN $$TYPT$ $$MIN $$TYPT$ $$MAX$ $$MIN $$TYPT$ $$\\ \hline V_{CC} = 4.5 V, $$I_1 = -18 $mA$ $$-1.2$ $$\\ \hline U_{CC} = 4.5 V, $$I_0 = 64 $mA$ $$0.38$ $$0.55$ $$\\ \hline I_{0L} = 64 $mA$ $$0.38$ $$0.55$ $$\\ \hline U_{CC} = 5.5 V, $$V_1 = 7 V$ $$0.1$ $$\\ \hline V_{CC} = 5.5 V, $$V_1 = 2.7 V$ $$0.1$ $$\\ \hline V_{CC} = 5.5 V, $$V_1 = 0.5 V$ $$$0.1$ $$\\ \hline V_{CC} = 5.5 V, $$V_1 = 0.5 V$ $$$0.1$ $$\\ \hline V_{CC} = 5.5 V, $$V_1 = 0.5 V$ $$$0.1$ $$\\ \hline V_{CC} = 5.5 V, $$Outputs open $$ $$Outputs high $$21$ $$33$ $$21$ $$\\ \hline Outputs high $$21$ $$33$ $$21$ $$\\ \hline Outputs low $$48$ $$76$ $$48$ $$\\ \hline OE $$ $disabled $$6$ $$10$ $$6$ $$\\ \hline V_{CC} = 5 V, $$V_1 = 2.5 V $$or 0.5 V$ $$\\ \hline \end{tabular}$	$\begin{tabular}{ c c c c c c } \hline \mbox{TEST CONDITIONS} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c c } \hline \mbox{MIN TYPT MAX} & \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$

<sup>†</sup> All typical values are at V<sub>CC</sub> = 5 V,  $T_A = 25^{\circ}C$ .

## switching characteristics (see Note 2)

PARAMETER	FROM (INPUT)	ТО (OUTPUT)	V <sub>CC</sub> = 5 V, C <sub>L</sub> = 50 pF, R <sub>L</sub> = 500 Ω, T <sub>A</sub> = 25°C			V <sub>CC</sub> = 4.5 V to 5.5 V, C <sub>L</sub> = 50 pF, R <sub>L</sub> = 500 Ω, T <sub>A</sub> = MIN to MAX <sup>‡</sup>				UNIT
			′BCT760			SN54BCT760		SN74BCT760		
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
<sup>t</sup> PLH	0.000	v	6.3	8	9.5	6.3	11.1	6.3	10	
<sup>t</sup> PHL	Any A	ř	2.1	4.3	6.5	2.1	7.7	2.1	7.2	ns
<sup>t</sup> PLH	OE	v	8.6	13	15.2	8.6	18.7	8.6	17.5	200
<sup>t</sup> PHL		r	3.2	6.2	8.9	3.2	10.4	3.2	9.9	ns

<sup>‡</sup> For conditions shown as MIN or MAX, use the appropriate values specified under recommended operating conditions. NOTE 2: Load circuits and voltage waveforms are shown in Section 1.





25-Sep-2013

# PACKAGING INFORMATION

Orderable Device	Status	Package Type	Package Drawing	Pins			Lead/Ball Finish		Op Temp (°C)	Device Marking	Samples
5962-9093801M2A	(1) ACTIVE	LCCC	FK	20	<b>Qty</b> 1	(2) TBD	POST-PLATE	(3) N / A for Pkg Type	-55 to 125	(4/5)	Samples
										9093801M2A SNJ54BCT 760FK	Samples
5962-9093801MRA	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	5962-9093801MR A SNJ54BCT760J	Samples
5962-9093801MSA	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9093801MS A SNJ54BCT760W	Samples
SN54BCT760J	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	SN54BCT760J	Samples
SN74BCT760DW	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760DWE4	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760DWG4	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760DWR	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760DWRE4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760DWRG4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760N	ACTIVE	PDIP	Ν	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	0 to 70	SN74BCT760N	Samples
SN74BCT760NE4	ACTIVE	PDIP	Ν	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	0 to 70	SN74BCT760N	Samples
SN74BCT760NSR	ACTIVE	SO	NS	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760NSRE4	ACTIVE	SO	NS	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SN74BCT760NSRG4	ACTIVE	SO	NS	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	0 to 70	BCT760	Samples
SNJ54BCT760FK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	-55 to 125	5962-	Samples



25-Sep-2013

Orderable Device	Status	Package Type		Pins	Package	Eco Plan	Lead/Ball Finish	MSL Peak Temp	Op Temp (°C)	Device Marking	Samples
	(1)		Drawing		Qty	(2)		(3)		(4/5) 9093801M2A SNJ54BCT 760FK	_
SNJ54BCT760J	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	5962-9093801MR A SNJ54BCT760J	Samples
SNJ54BCT760W	ACTIVE	CFP	W	20	1	TBD	Call TI	N / A for Pkg Type	-55 to 125	5962-9093801MS A SNJ54BCT760W	Samples

<sup>(1)</sup> 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.

<sup>(2)</sup> 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)

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

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

<sup>(5)</sup> 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.

**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

25-Sep-2013

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

#### OTHER QUALIFIED VERSIONS OF SN54BCT760, SN74BCT760 :

- Catalog: SN74BCT760
- Enhanced Product: SN74BCT760-EP, SN74BCT760-EP
- Military: SN54BCT760

NOTE: Qualified Version Definitions:

- Catalog TI's standard catalog product
- Enhanced Product Supports Defense, Aerospace and Medical Applications
- Military QML certified for Military and Defense Applications

# PACKAGE MATERIALS INFORMATION

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## TAPE AND REEL INFORMATION

#### REEL DIMENSIONS

Texas Instruments





TAPE AND REEL INFORMATION

#### 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

*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
SN74BCT760DWR	SOIC	DW	20	2000	330.0	24.4	10.8	13.0	2.7	12.0	24.0	Q1
SN74BCT760NSR	SO	NS	20	2000	330.0	24.4	8.2	13.0	2.5	12.0	24.0	Q1

TEXAS INSTRUMENTS

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# PACKAGE MATERIALS INFORMATION

14-Jul-2012



\*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74BCT760DWR	SOIC	DW	20	2000	367.0	367.0	45.0
SN74BCT760NSR	SO	NS	20	2000	367.0	367.0	45.0

J (R-GDIP-T\*\*) 14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE



NOTES: A. All linear dimensions are in inches (millimeters).

- B. This drawing is subject to change without notice.
- C. This package is hermetically sealed with a ceramic lid using glass frit.
- D. Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
- E. Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.

W (R-GDFP-F20)

CERAMIC DUAL FLATPACK



- NOTES: A. All linear dimensions are in inches (millimeters).
  - B. This drawing is subject to change without notice.
  - C. This package can be hermetically sealed with a ceramic lid using glass frit.
  - D. Index point is provided on cap for terminal identification only.
  - E. Falls within Mil-Std 1835 GDFP2-F20



LEADLESS CERAMIC CHIP CARRIER

FK (S-CQCC-N\*\*) 28 TERMINAL SHOWN



NOTES: A. All linear dimensions are in inches (millimeters).

B. This drawing is subject to change without notice.

- C. This package can be hermetically sealed with a metal lid.
- D. Falls within JEDEC MS-004



# N (R-PDIP-T\*\*)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



NOTES:

- A. All linear dimensions are in inches (millimeters).B. This drawing is subject to change without notice.
- Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
- $\triangle$  The 20 pin end lead shoulder width is a vendor option, either half or full width.



DW (R-PDSO-G20)

PLASTIC SMALL OUTLINE



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

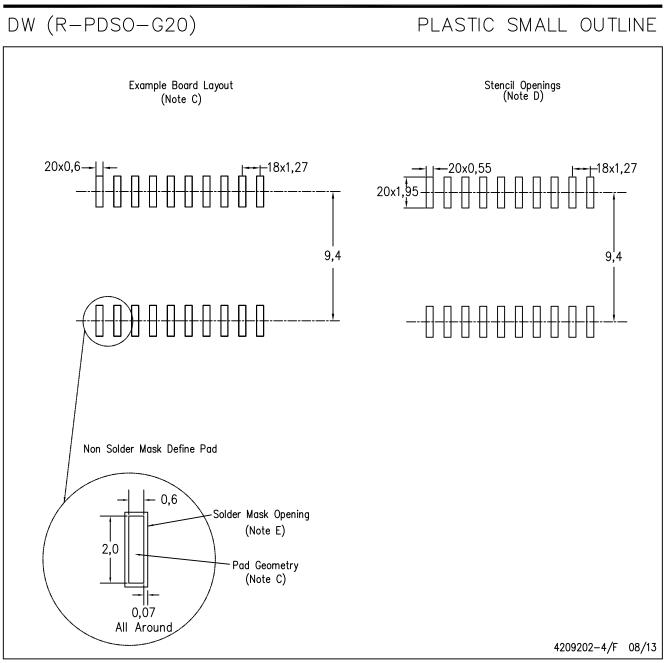
B. This drawing is subject to change without notice.

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.



# LAND PATTERN DATA



NOTES:

A. All linear dimensions are in millimeters.

- B. This drawing is subject to change without notice.
- C. Refer to IPC7351 for alternate board design.
- 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.



# MECHANICAL DATA

## PLASTIC SMALL-OUTLINE PACKAGE

#### 0,51 0,35 ⊕0,25⊛ 1,27 8 14 0,15 NOM 5,60 8,20 5,00 7,40 $\bigcirc$ Gage Plane ₽ 0,25 7 1 1,05 0,55 0°-10° Δ 0,15 0,05 Seating Plane — 2,00 MAX 0,10PINS \*\* 14 16 20 24 DIM 10,50 10,50 12,90 15,30 A MAX A MIN 9,90 9,90 12,30 14,70 4040062/C 03/03

NOTES: A. All linear dimensions are in millimeters.

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

**14-PINS SHOWN** 

- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.



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