



**THE DATASHEET OF
SN74LV4066ADR**



SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

- 2-V to 5.5-V V_{CC} Operation
- Support Mixed-Mode Voltage Operation on All Ports
- High On-Off Output-Voltage Ratio
- Low Crosstalk Between Switches
- Individual Switch Controls
- Extremely Low Input Current
- 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

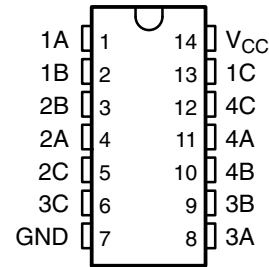
This quadruple silicon-gate CMOS analog switch is designed for 2-V to 5.5-V V_{CC} operation.

These switches are designed to handle both analog and digital signals. Each switch permits signals with amplitudes up to 5.5 V (peak) to be transmitted in either direction.

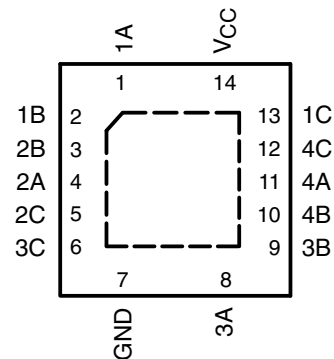
Each switch section has its own enable-input control (C). A high-level voltage applied to C turns on the associated switch section.

Applications include signal gating, chopping, modulation or demodulation (modem), and signal multiplexing for analog-to-digital and digital-to-analog conversion systems.

SN54LV4066A . . . J OR W PACKAGE
SN74LV4066A . . . D, DB, DGV, N, NS, OR PW PACKAGE
(TOP VIEW)



SN74LV4066A . . . RGY PACKAGE
(TOP VIEW)



NC – No internal connection

ORDERING INFORMATION

T_A	PACKAGE†		ORDERABLE PART NUMBER	TOP-SIDE MARKING
–40°C to 85°C	PDIP – N	Tube of 25	SN74LV4066AN	SN74LV4066AN
	QFN – RGY	Reel of 1000	SN74LV4066ARGYR	LW066A
	SOIC – D	Tube of 50	SN74LV4066AD	LV4066A
		Reel of 2500	SN74LV4066ADR	
	SOP – NS	Reel of 2000	SN74LV4066ANSR	74LV4066A
	SSOP – DB	Reel of 2000	SN74LV4066ADBR	LW066A
	TSSOP – PW	Tube of 90	SN74LV4066APW	LW066A
		Reel of 2000	SN74LV4066APWR	
Reel of 250		SN74LV4066APWT		
TVSOP – DGV	Reel of 2000	SN74LV4066ADGVR	LW066A	
–55°C to 125°C	CDIP – J	Tube of 25	SNJ54LV4066AJ	SNJ54LV4066AJ
	CFP – W	Tube of 150	SNJ54LV4066AW	SNJ54LV4066AW

† 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.

UNLESS OTHERWISE NOTED this document contains PRODUCTION DATA information 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.

 **TEXAS
INSTRUMENTS**

POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

Copyright © 2005, Texas Instruments Incorporated

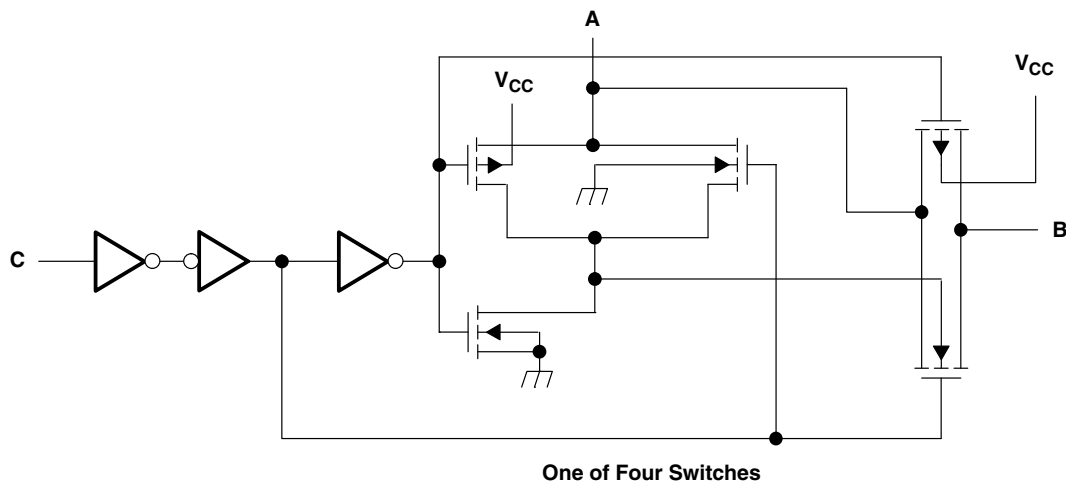
SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

FUNCTION TABLE
(each switch)

INPUT CONTROL (C)	SWITCH
L	OFF
H	ON

logic diagram (positive logic)



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)[†]

Supply voltage range, V_{CC} (see Note 1)	-0.5 V to 7 V
Input voltage range, V_I (see Note 1)	-0.5 V to 7 V
Switch I/O voltage range, V_{IO} (see Notes 1 and 2)	-0.5 V to $V_{CC} + 0.5$ V
Control-input clamp current, I_{IK} ($V_I < 0$)	-20 mA
I/O diode current, I_{IOK} ($V_{IO} < 0$)	-50 mA
On-state switch current, I_T ($V_{IO} = 0$ to V_{CC})	± 25 mA
Continuous current through V_{CC} or GND	± 50 mA
Package thermal impedance, θ_{JA} (see Note 3): D package	86°C/W
(see Note 3): DB package	96°C/W
(see Note 3): DGV package	127°C/W
(see Note 3): N package	80°C/W
(see Note 3): NS package	76°C/W
(see Note 3): PW package	113°C/W
(see Note 4): RGY package	47°C/W
Storage temperature range, T_{stg}	-65°C to 150°C

[†] 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.

- NOTES:
1. The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.
 2. This value is limited to 5.5 V maximum.
 3. The package thermal impedance is calculated in accordance with JESD 51-7.
 4. The package thermal impedance is calculated in accordance with JESD 51-5.

SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

recommended operating conditions (see Note 5)

		SN54LV4066A		SN74LV4066A		UNIT
		MIN	MAX	MIN	MAX	
V_{CC}	Supply voltage	2 [†]	5.5	2 [†]	5.5	V
V_{IH}	High-level input voltage, control inputs	$V_{CC} = 2\text{ V}$	1.5	1.5		V
		$V_{CC} = 2.3\text{ V to }2.7\text{ V}$	$V_{CC} \times 0.7$	$V_{CC} \times 0.7$		
		$V_{CC} = 3\text{ V to }3.6\text{ V}$	$V_{CC} \times 0.7$	$V_{CC} \times 0.7$		
		$V_{CC} = 4.5\text{ V to }5.5\text{ V}$	$V_{CC} \times 0.7$	$V_{CC} \times 0.7$		
V_{IL}	Low-level input voltage, control inputs	$V_{CC} = 2\text{ V}$		0.5	0.5	V
		$V_{CC} = 2.3\text{ V to }2.7\text{ V}$		$V_{CC} \times 0.3$	$V_{CC} \times 0.3$	
		$V_{CC} = 3\text{ V to }3.6\text{ V}$		$V_{CC} \times 0.3$	$V_{CC} \times 0.3$	
		$V_{CC} = 4.5\text{ V to }5.5\text{ V}$		$V_{CC} \times 0.3$	$V_{CC} \times 0.3$	
V_I	Control input voltage	0	5.5	0	5.5	V
V_{IO}	Input/output voltage	0	V_{CC}	0	V_{CC}	V
$\Delta t/\Delta v$	Input transition rise or fall rate	$V_{CC} = 2.3\text{ V to }2.7\text{ V}$		200	200	ns/V
		$V_{CC} = 3\text{ V to }3.6\text{ V}$		100	100	
		$V_{CC} = 4.5\text{ V to }5.5\text{ V}$		20	20	
T_A	Operating free-air temperature	-55	125	-40	85	°C

[†] With supply voltages at or near 2 V, the analog switch on-state resistance becomes very nonlinear. Only digital signals should be transmitted at these low supply voltages.

NOTE 5: 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.

SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

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

PARAMETER	TEST CONDITIONS	V _{CC}	T _A = 25°C			SN54LV4066A		SN74LV4066A		UNIT	
			MIN	TYP	MAX	MIN	MAX	MIN	MAX		
r _{on} On-state switch resistance	I _T = -1 mA, V _I = V _{CC} or GND, V _C = V _{IH} (see Figure 1)	2.3 V		38	180		225		225	Ω	
		3 V		29	150		190		190		
		4.5 V		21	75		100		100		
r _{on(p)} Peak on-state resistance	I _T = -1 mA, V _I = V _{CC} to GND, V _C = V _{IH}	2.3 V		143	500		600		600	Ω	
		3 V		57	180		225		225		
		4.5 V		31	100		125		125		
Δr _{on} Difference in on-state resistance between switches	I _T = -1 mA, V _I = V _{CC} to GND, V _C = V _{IH}	2.3 V		6	30		40		40	Ω	
		3 V		3	20		30		30		
		4.5 V		2	15		20		20		
I _I Control input current	V _I = 5.5 V or GND	0 to 5.5 V				±0.1		±1		±1	μA
I _{S(off)} Off-state switch leakage current	V _I = V _{CC} and V _O = GND, or V _I = GND and V _O = V _{CC} , V _C = V _{IL} (see Figure 2)	5.5 V				±0.1		±1		±1	μA
I _{S(on)} On-state switch leakage current	V _I = V _{CC} or GND, V _C = V _{IH} (see Figure 3)	5.5 V				±0.1		±1		±1	μA
I _{CC} Supply current	V _I = V _{CC} or GND	5.5 V						20		20	μA
C _{ic} Control input capacitance					1.5						pF
C _{io} Switch input/output capacitance					5.5						pF
C _F Feed-through capacitance					0.5						pF

PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

**switching characteristics over recommended operating free-air temperature range,
 $V_{CC} = 2.5\text{ V} \pm 0.2\text{ V}$ (unless otherwise noted)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	$T_A = 25^\circ\text{C}$			SN54LV4066A		SN74LV4066A		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH} t_{PHL} Propagation delay time	A or B	B or A	$C_L = 15\text{ pF}$, (see Figure 4)		1.2	10		16		16	ns
t_{PZH} t_{PZL} Switch turn-on time	C	A or B	$C_L = 15\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		3.3	15		20		20	ns
t_{PLZ} t_{PHZ} Switch turn-off time	C	A or B	$C_L = 15\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		6	15		23		23	ns
t_{PLH} t_{PHL} Propagation delay time	A or B	B or A	$C_L = 50\text{ pF}$, (see Figure 4)		2.6	12		18		18	ns
t_{PZH} t_{PZL} Switch turn-on time	C	A or B	$C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		4.2	25		32		32	ns
t_{PLZ} t_{PHZ} Switch turn-off time	C	A or B	$C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		9.6	25		32		32	ns

**switching characteristics over recommended operating free-air temperature range,
 $V_{CC} = 3.3\text{ V} \pm 0.3\text{ V}$ (unless otherwise noted)**

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	$T_A = 25^\circ\text{C}$			SN54LV4066A		SN74LV4066A		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH} t_{PHL} Propagation delay time	A or B	B or A	$C_L = 15\text{ pF}$, (see Figure 4)		0.8	6		10		10	ns
t_{PZH} t_{PZL} Switch turn-on time	C	A or B	$C_L = 15\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		2.3	11		15		15	ns
t_{PLZ} t_{PHZ} Switch turn-off time	C	A or B	$C_L = 15\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		4.5	11		15		15	ns
t_{PLH} t_{PHL} Propagation delay time	A or B	B or A	$C_L = 50\text{ pF}$, (see Figure 4)		1.5	9		12		12	ns
t_{PZH} t_{PZL} Switch turn-on time	C	A or B	$C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		3	18		22		22	ns
t_{PLZ} t_{PHZ} Switch turn-off time	C	A or B	$C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		7.2	18		22		22	ns

PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

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

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	$T_A = 25^\circ\text{C}$			SN54LV4066A		SN74LV4066A		UNIT
				MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t_{PLH} t_{PHL} Propagation delay time	A or B	B or A	$C_L = 15\text{ pF}$, (see Figure 4)		0.3	4		7		7	ns
t_{PZH} t_{PZL} Switch turn-on time	C	A or B	$C_L = 15\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		1.6	7		10		10	ns
t_{PLZ} t_{PHZ} Switch turn-off time	C	A or B	$C_L = 15\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		3.2	7		10		10	ns
t_{PLH} t_{PHL} Propagation delay time	A or B	B or A	$C_L = 50\text{ pF}$, (see Figure 4)		0.6	6		8		8	ns
t_{PZH} t_{PZL} Switch turn-on time	C	A or B	$C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		2.1	12		16		16	ns
t_{PLZ} t_{PHZ} Switch turn-off time	C	A or B	$C_L = 50\text{ pF}$, $R_L = 1\text{ k}\Omega$ (see Figure 5)		5.1	12		16		16	ns

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

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	V_{CC}	$T_A = 25^\circ\text{C}$			UNIT
					MIN	TYP	MAX	
Frequency response (switch on)	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (sine wave) $20\log_{10}(V_O/V_I) = -3\text{ dB}$ (see Figure 6)	2.3 V	30			MHz
				3 V	35			
				4.5 V	50			
Crosstalk (between any switches)	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (sine wave) (see Figure 7)	2.3 V	-45			dB
				3 V	-45			
				4.5 V	-45			
Crosstalk (control input to signal output)	C	A or B	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (square wave) (see Figure 8)	2.3 V	15			mV
				3 V	20			
				4.5 V	50			
Feed-through attenuation (switch off)	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 600\ \Omega$, $f_{in} = 1\text{ MHz}$ (see Figure 9)	2.3 V	-40			dB
				3 V	-40			
				4.5 V	-40			
Sine-wave distortion	A or B	B or A	$C_L = 50\text{ pF}$, $R_L = 10\text{ k}\Omega$, $f_{in} = 1\text{ kHz}$ (sine wave) (see Figure 10)	$V_I = 2\text{ V}_{p-p}$	2.3 V	0.1		%
				$V_I = 2.5\text{ V}_{p-p}$	3 V	0.1		
				$V_I = 4\text{ V}_{p-p}$	4.5 V	0.1		

operating characteristics, $T_A = 25^\circ\text{C}$

PARAMETER	TEST CONDITIONS	TYP	UNIT
C_{pd} Power dissipation capacitance	$C_L = 50\text{ pF}$, $f = 10\text{ MHz}$	4.5	pF

PRODUCT PREVIEW information concerns products in the formative or design phase of development. Characteristic data and other specifications are design goals. Texas Instruments reserves the right to change or discontinue these products without notice.



POST OFFICE BOX 655303 • DALLAS, TEXAS 75265

PARAMETER MEASUREMENT INFORMATION

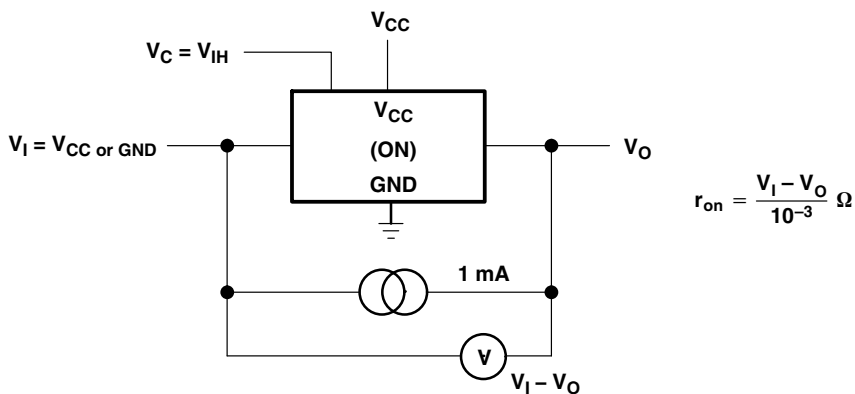


Figure 1. On-State Resistance Test Circuit

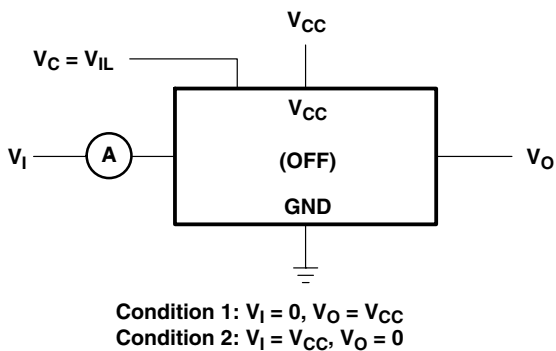


Figure 2. Off-State Switch Leakage-Current Test Circuit

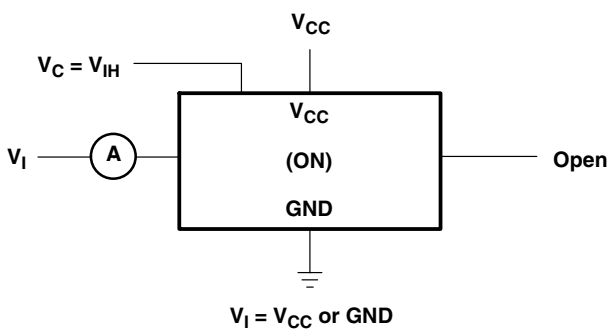
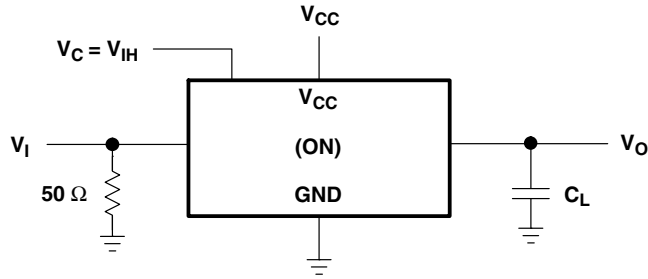


Figure 3. On-State Leakage-Current Test Circuit

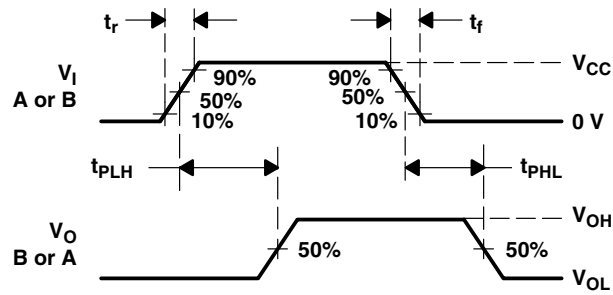
SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

PARAMETER MEASUREMENT INFORMATION



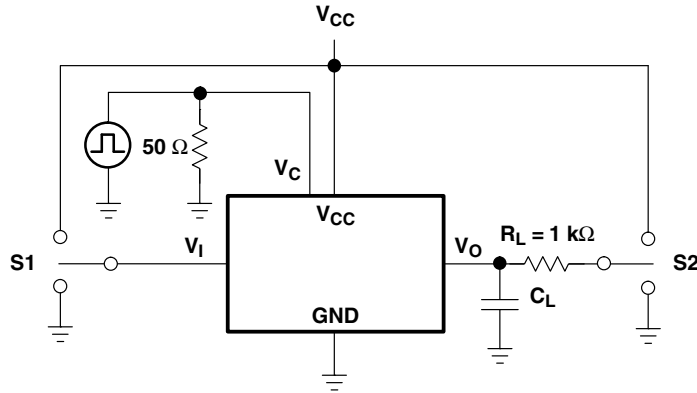
TEST CIRCUIT



VOLTAGE WAVEFORMS

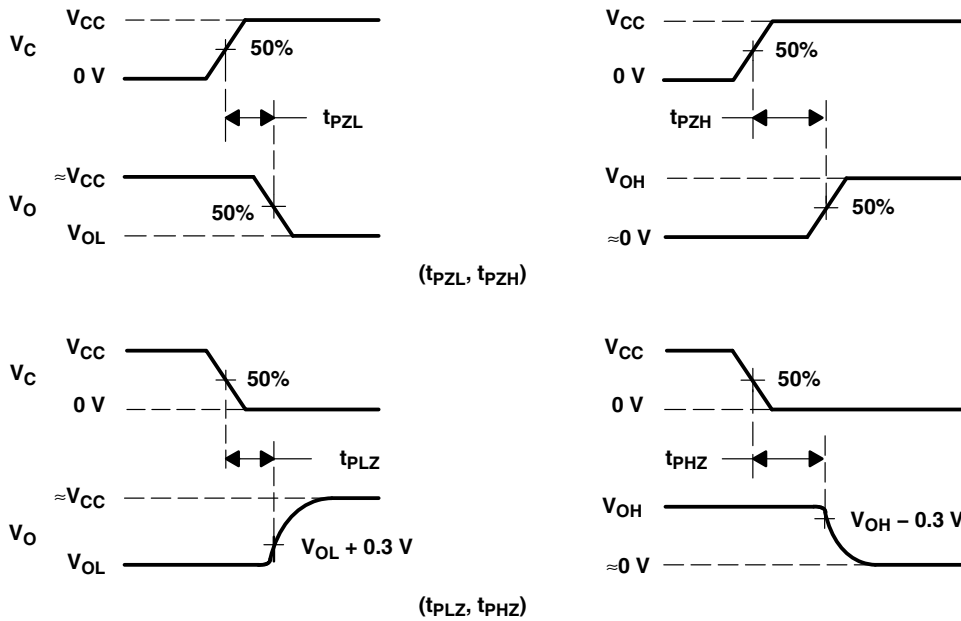
Figure 4. Propagation Delay Time, Signal Input to Signal Output

PARAMETER MEASUREMENT INFORMATION



TEST	S1	S2
t _{PZL}	GND	V _{CC}
t _{PZH}	V _{CC}	GND
t _{PLZ}	GND	V _{CC}
t _{PHZ}	V _{CC}	GND

TEST CIRCUIT



VOLTAGE WAVEFORMS

Figure 5. Switching Time (t_{PZL}, t_{PLZ}, t_{PZH}, t_{PHZ}), Control to Signal Output

SN54LV4066A, SN74LV4066A QUADRUPLE BILATERAL ANALOG SWITCHES

SCLS4271 – APRIL 1999 – REVISED APRIL 2005

PARAMETER MEASUREMENT INFORMATION

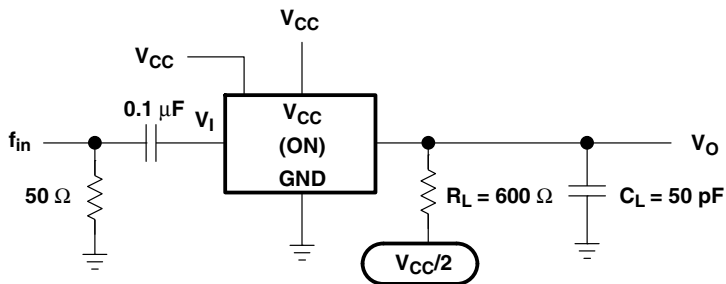


Figure 6. Frequency Response (Switch On)

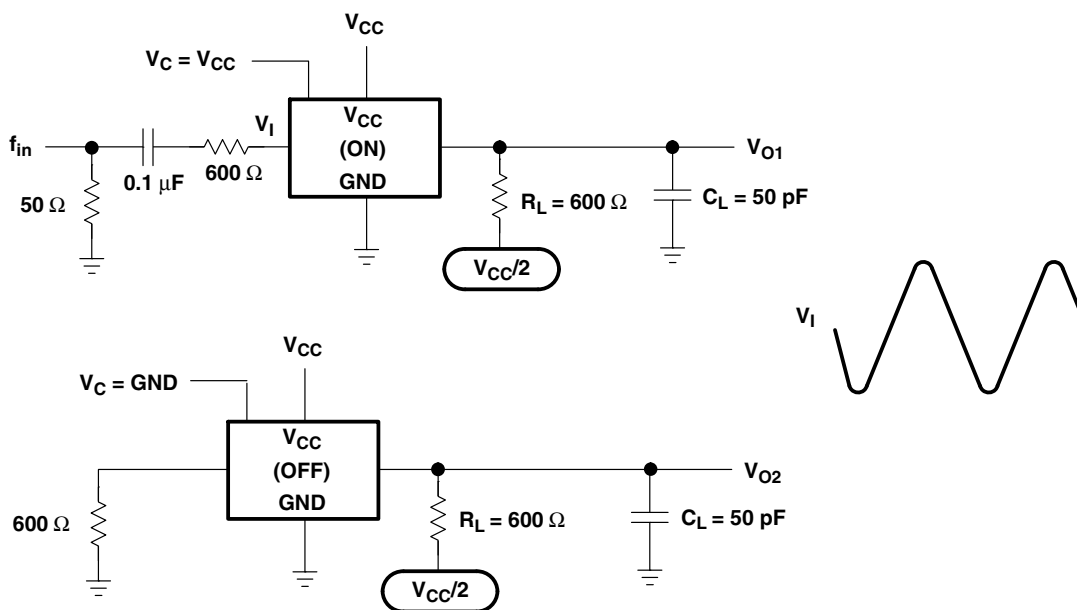


Figure 7. Crosstalk Between Any Two Switches

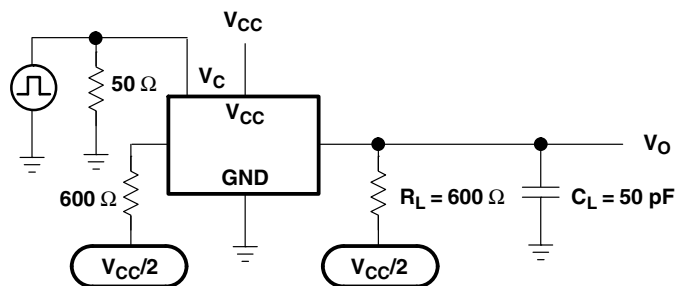


Figure 8. Crosstalk (Control Input – Switch Output)

PARAMETER MEASUREMENT INFORMATION

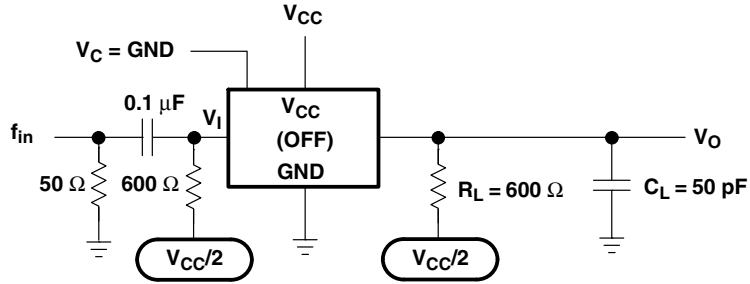


Figure 9. Feed-Through Attenuation (Switch Off)

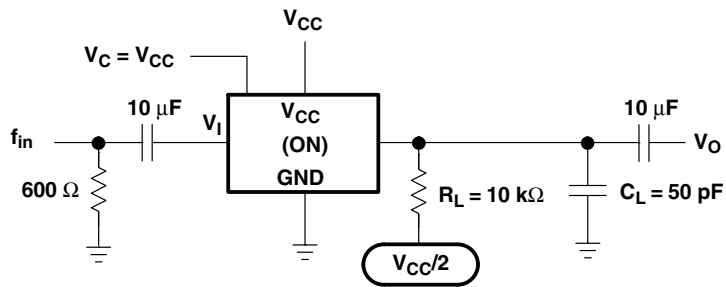


Figure 10. Sine-Wave Distortion

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
SN74LV4066AD	ACTIVE	SOIC	D	14	50	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LV4066A	Samples
SN74LV4066ADBR	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LW066A	Samples
SN74LV4066ADBRG4	ACTIVE	SSOP	DB	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LW066A	Samples
SN74LV4066ADGVR	ACTIVE	TVSOP	DGV	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LW066A	Samples
SN74LV4066ADR	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LV4066A	Samples
SN74LV4066ADRE4	ACTIVE	SOIC	D	14	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LV4066A	Samples
SN74LV4066AN	ACTIVE	PDIP	N	14	25	Green (RoHS & no Sb/Br)	CU NIPDAU	N / A for Pkg Type	-40 to 85	SN74LV4066AN	Samples
SN74LV4066ANSR	ACTIVE	SO	NS	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	74LV4066A	Samples
SN74LV4066APW	ACTIVE	TSSOP	PW	14	90	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LW066A	Samples
SN74LV4066APWR	ACTIVE	TSSOP	PW	14	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LW066A	Samples
SN74LV4066APWT	ACTIVE	TSSOP	PW	14	250	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-40 to 85	LW066A	Samples
SN74LV4066ARGYR	ACTIVE	VQFN	RGY	14	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	LW066A	Samples
SN74LV4066ARGYRG4	ACTIVE	VQFN	RGY	14	3000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	-40 to 85	LW066A	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) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of ≤ 1000 ppm threshold. Antimony trioxide based flame retardants must also meet the ≤ 1000 ppm threshold requirement.

(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.

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.

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.

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
SN74LV4066ADGVR	TVSOP	DGV	14	2000	330.0	12.4	6.8	4.0	1.6	8.0	12.0	Q1
SN74LV4066ADR	SOIC	D	14	2500	330.0	16.4	6.5	9.0	2.1	8.0	16.0	Q1
SN74LV4066ANSR	SO	NS	14	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
SN74LV4066APWR	TSSOP	PW	14	2000	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74LV4066APWT	TSSOP	PW	14	250	330.0	12.4	6.9	5.6	1.6	8.0	12.0	Q1
SN74LV4066ARGYR	VQFN	RGY	14	3000	330.0	12.4	3.75	3.75	1.15	8.0	12.0	Q1

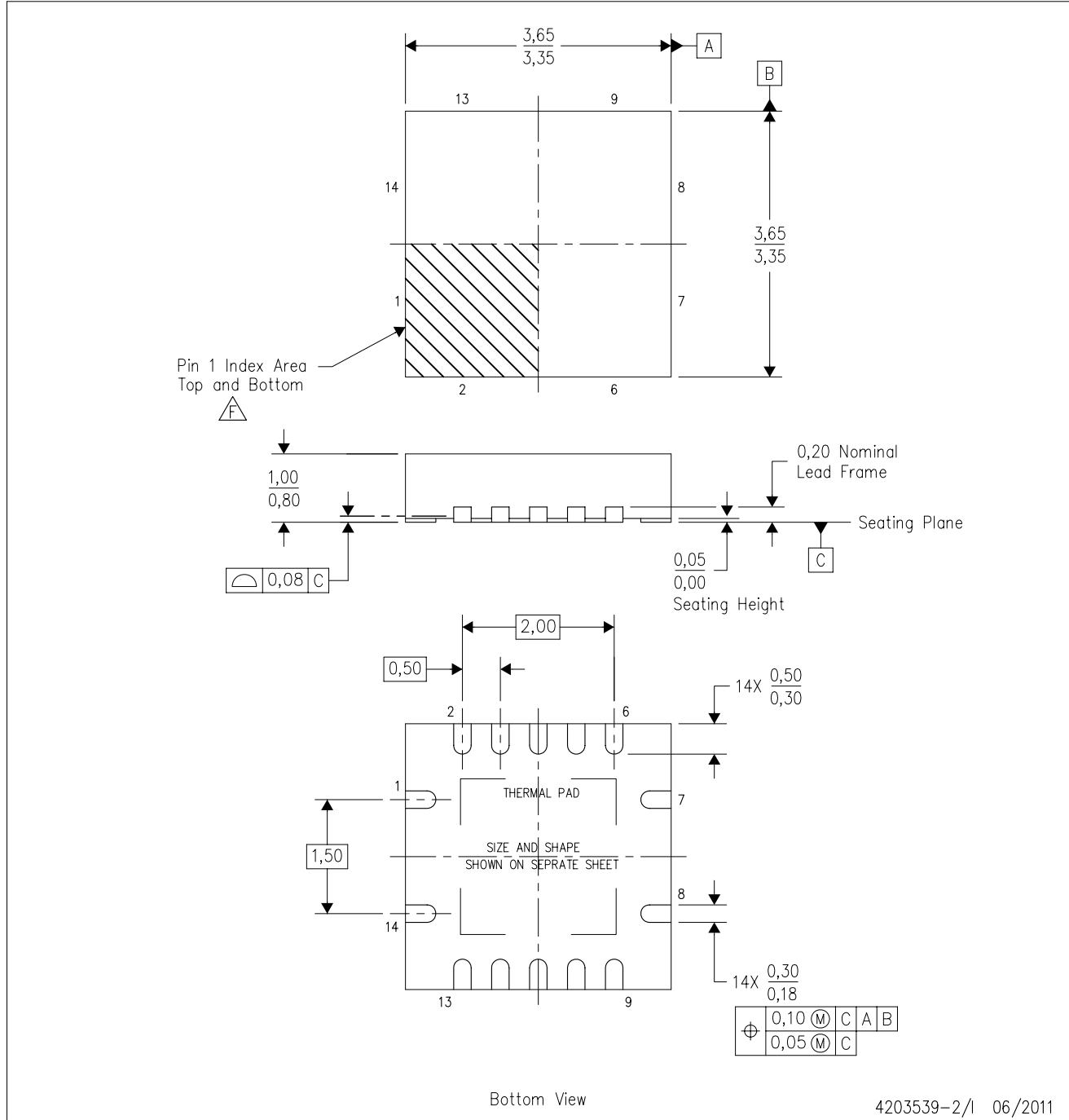
TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LV4066ADGVR	TVSOP	DGV	14	2000	367.0	367.0	35.0
SN74LV4066ADR	SOIC	D	14	2500	367.0	367.0	38.0
SN74LV4066ANSR	SO	NS	14	2000	367.0	367.0	38.0
SN74LV4066APWR	TSSOP	PW	14	2000	367.0	367.0	35.0
SN74LV4066APWT	TSSOP	PW	14	250	367.0	367.0	35.0
SN74LV4066ARGYR	VQFN	RGY	14	3000	367.0	367.0	35.0

RGY (S-PVQFN-N14)

PLASTIC QUAD FLATPACK NO-LEAD



- 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.
 - D. The package thermal pad must be soldered to the board for thermal and mechanical performance.
 - E. See the additional figure in the Product Data Sheet for details regarding the exposed thermal pad features and 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.
 - G. Package complies to JEDEC MO-241 variation BA.

RGY (S-PVQFN-N14)

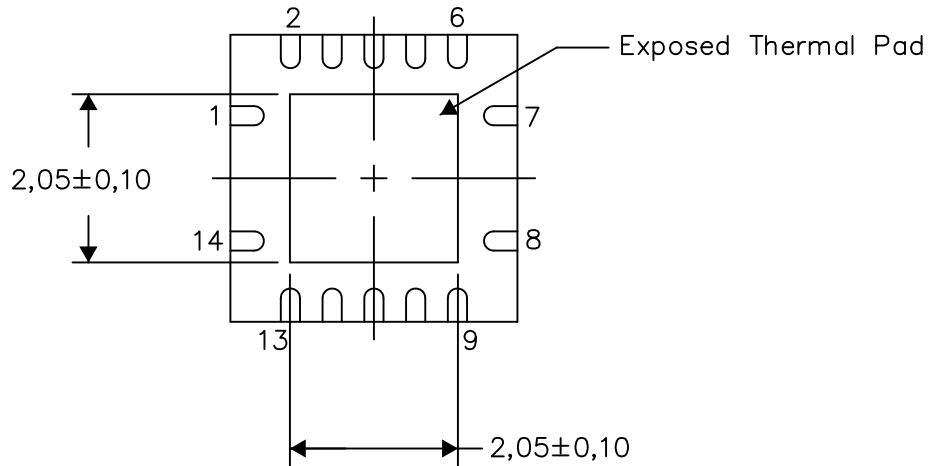
PLASTIC QUAD FLATPACK NO-LEAD

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

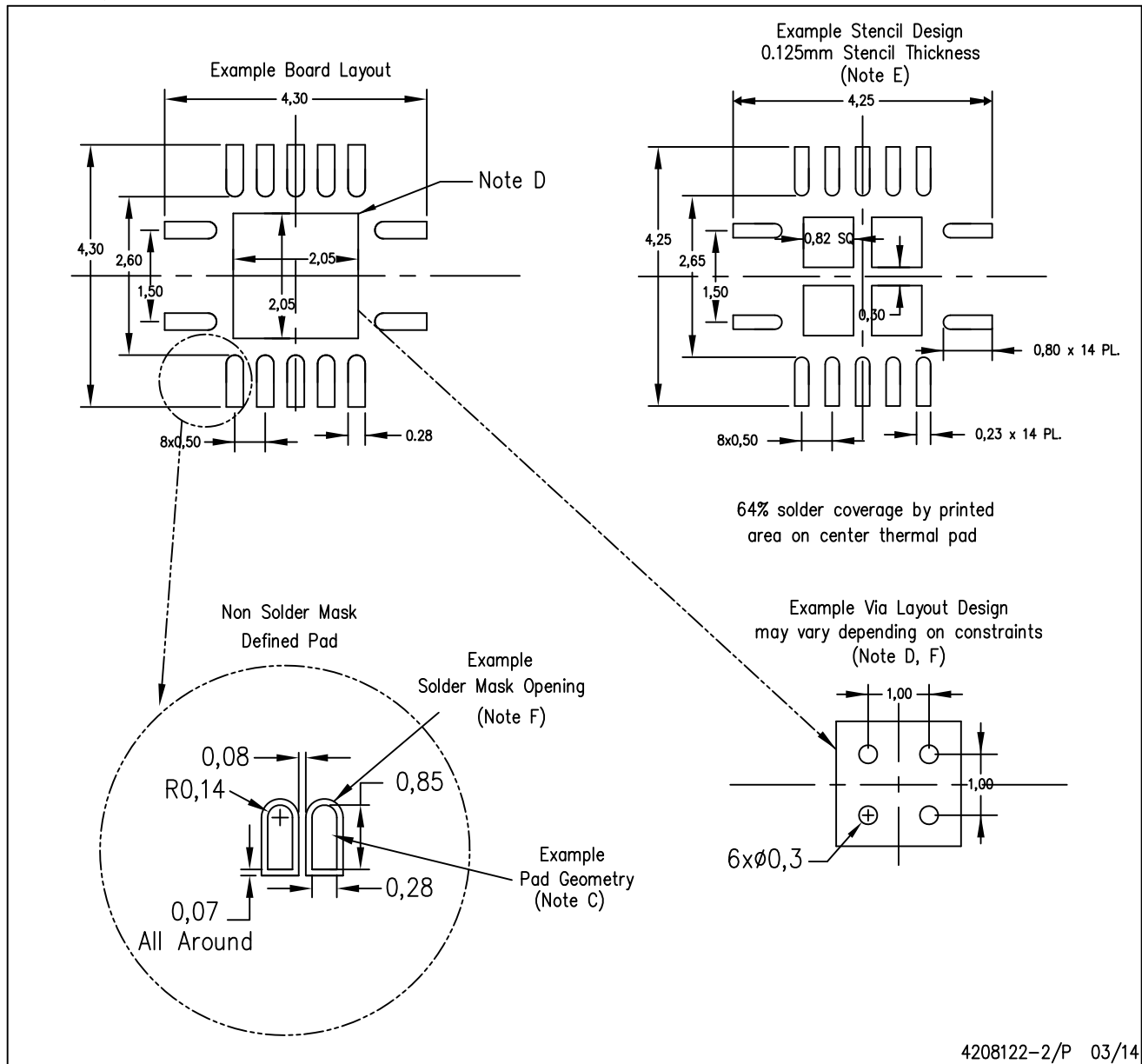
Exposed Thermal Pad Dimensions

4206353-2/P 03/14

NOTE: All linear dimensions are in millimeters

RGY (S-PVQFN-N14)

PLASTIC QUAD FLATPACK NO-LEAD



4208122-2/P 03/14

- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - Publication IPC-7351 is recommended for alternate designs.
 - 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 <<http://www.ti.com>>.
 - 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.
 - Customers should contact their board fabrication site for minimum solder mask web tolerances between signal pads.

MECHANICAL DATA

NS (R-PDSO-G**)

PLASTIC SMALL-OUTLINE PACKAGE

14-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.

DGV (R-PDSO-G**)

PLASTIC SMALL-OUTLINE

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

D (R-PDSO-G14)

PLASTIC SMALL OUTLINE

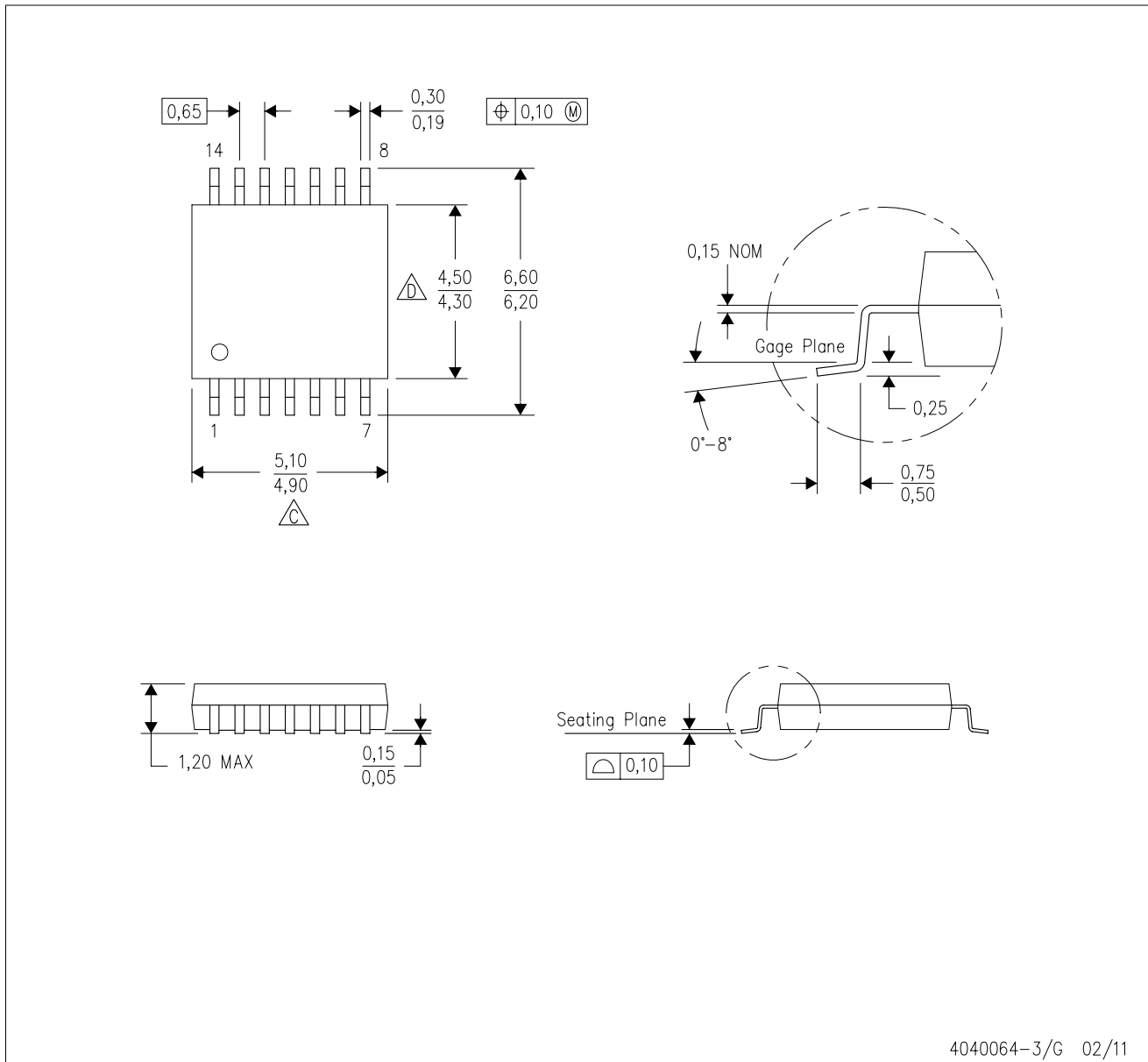


4211283-3/E 08/12

- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - Publication IPC-7351 is recommended for alternate designs.
 - 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 other stencil recommendations.
 - Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

PW (R-PDSO-G14)

PLASTIC SMALL OUTLINE



4040064-3/G 02/11

- 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.
 -  Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0,15 each side.
 -  Body width does not include interlead flash. Interlead flash shall not exceed 0,25 each side.
 - E. Falls within JEDEC MO-153

PW (R-PDSO-G14)

PLASTIC SMALL OUTLINE



4211284-2/G 08/15

- NOTES:
- 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. 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 other stencil recommendations.
 - E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.

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).
 - The 20 pin end lead shoulder width is a vendor option, either half or full width.

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

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2019, Texas Instruments Incorporated


Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View SN74LV4066ADR on WIN SOURCE](#)

 [Texas Instruments](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management