



High-Bandwidth, Quad DPDT Switches

MAX4760/MAX4761

General Description

The MAX4760/MAX4761 (DPDT) analog switches operate from a single +1.8V to +5.5V supply. These switches feature a low 25pF capacitance for high-speed data switching applications.

The MAX4760 is a quad double-pole/double-throw (DPDT) switch and the MAX4761 is an octal single-pole/double-throw (SPDT) switch. They have eight 3.5Ω on-resistance, low-capacitance switches to route audio and data signals. The MAX4760 has 4 logic inputs to control the switches in pairs. The MAX4761 has one logic control input and an enable input (EN) to disable the switches.

The MAX4760/MAX4761 are available in a small 36-pin (6mm x 6mm) thin QFN and 36-bump (3mm x 3mm) chip-scale package (UCSP™).

Applications

- USB Signal Switching
- Audio-Signal Routing
- Cellular Phones
- PDA's/Hand-Held Devices
- Notebook Computers

Features

- ◆ USB 1.1 and USB 2.0 (Full Speed) Signal-Switching Compliant
- ◆ Data and Audio Signal Routing
- ◆ Low-Capacitance (25pF) Data Switches
- ◆ Less than 0.2ns Skew
- ◆ -3dB Bandwidth: 325MHz
- ◆ 0.2Ω Channel-to-Channel Matching
- ◆ 0.8Ω On-Resistance Flatness
- ◆ Rail-to-Rail Signal Handling
- ◆ 0.03% THD
- ◆ +1.8V to +5.5V Supply Range
- ◆ Tiny 36-Bump UCSP (3mm x 3mm)
- ◆ 36-Pin Thin QFN (6mm x 6mm)

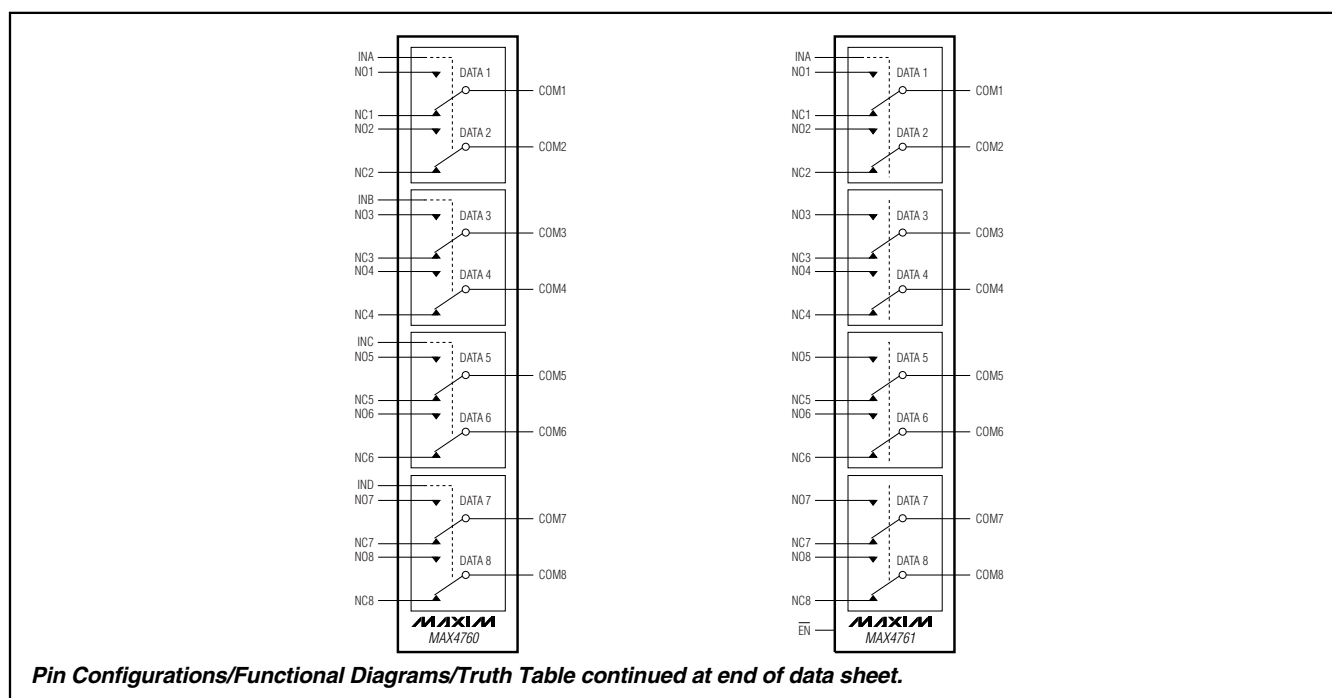
Ordering Information

| PART | TEMP RANGE | PIN-PACKAGE | PKG CODE |
|--------------|----------------|-------------------------|----------|
| MAX4760EWX+T | -40°C to +85°C | 36 UCSP | AS27Y-2Z |
| MAX4760ETX | -40°C to +85°C | 36 Thin QFN (6mm x 6mm) | AS27Y-2Z |

+ Denotes a lead-free package.

Ordering Information continued at end of data sheet.

Functional Diagrams



UCSP is a trademark of Maxim Integrated Products, Inc.



For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.

High-Bandwidth, Quad DPDT Switches

ABSOLUTE MAXIMUM RATINGS

(All voltages referenced to GND.)

| | |
|---|----------------------|
| V+, IN_, EN_ | -0.3V to +6V |
| COM_, NO_, NC_ (Note 1) | -0.3V to (V+ + 0.3V) |
| Continuous Current | |
| NO_, NC_, COM_ | ±100mA |
| Peak Current | |
| (pulsed at 1ms, 10% duty cycle) | ±200mA |
| (pulsed at 1ms, 50% duty cycle) | ±300mA |
| Continuous Power Dissipation (T _A = +70°C) | |
| 36-Bump UCSP (derate 15.3mW/°C above +70°C) | 1221mW |
| 36-Pin Thin QFN (derate 26.3mW/°C above +70°C) | 2105mW |

| | |
|-----------------------------------|-----------------|
| ESD per Method 3015.7 | ±2kV |
| Operating Temperature Range | -40°C to +85°C |
| Junction Temperature | +150°C |
| Storage Temperature Range | -65°C to +150°C |
| Lead Temperature (soldering, 10s) | +300°C |
| Bump Temperature (soldering) | |
| Infrared (15s) | +220°C |
| Vapor Phase (60s) | +215°C |

Note 1: Signals on NO_, NC_, COM_ exceeding V+ or GND are clamped by internal diodes. Limit forward-diode current to maximum current rating.

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 in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

(V+ = +2.7V to +5.25V, T_A = -40°C to +85°C, unless otherwise noted. Typical values are at V+ = 3V, T_A = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | T _A | MIN | TYP | MAX | UNITS |
|---|---|--|--------------------------------------|-----|------|------|-------|
| ANALOG SWITCH | | | | | | | |
| Analog Signal Range | V _{COM_} , V _{NO_} , V _{NC_} | | T _{MIN} to T _{MAX} | 0 | | V+ | V |
| On-Resistance (Note 4) | R _{ON} | V+ = 2.7V, I _{COM_} = 10mA, V _{NC_} or V _{NO_} = 0V or V+ | +25°C | 2.0 | 3.5 | | Ω |
| | | | T _{MIN} to T _{MAX} | | | 4 | |
| On-Resistance Match Between Channels (Notes 4, 5) | ΔR _{ON} | V+ = 2.7V, I _{COM_} = 10mA, V _{NO_} or V _{NC_} = 1.5V | +25°C | 0.2 | 0.4 | | Ω |
| | | | T _{MIN} to T _{MAX} | | | 0.55 | |
| On-Resistance Flatness (Note 6) | R _{FLAT(ON)} | V+ = 2.7V, I _{COM_} = 10mA, V _{NC_} or V _{NO_} = 0V or V+ | +25°C | 0.8 | 1.5 | | Ω |
| | | | T _{MIN} to T _{MAX} | | | 1.8 | |
| NO_, NC_ Off-Leakage Current | I _{NO_(OFF)} , I _{NC_(OFF)} | V+ = 3.6V; V _{COM_} = 3.3V, 0.3V; V _{NO_} or V _{NC_} = 0.3V, 3.3V | +25°C | -5 | | +5 | nA |
| | | | T _{MIN} to T _{MAX} | -25 | | +25 | |
| COM_ Off-Leakage Current | | V+ = 3.6V (MAX4761); V _{COM_} = 3.3V, 0.3V; V _{NO_} or V _{NC_} = 0.3V, 3.3V | +25°C | -5 | 0.01 | +5 | nA |
| | | | T _{MIN} to T _{MAX} | -25 | | +25 | |
| COM_ On-Leakage Current | I _{COM_(ON)} | V+ = 3.6V; V _{COM_} = 3.3V, 0.3V; V _{NO_} or V _{NC_} = 3.3V, 0.3V or floating | +25°C | -5 | | +5 | nA |
| | | | T _{MIN} to T _{MAX} | -25 | | +25 | |
| DYNAMIC | | | | | | | |
| Turn-On Time | t _{ON} | V _{NO_} or V _{NC_} = 1.5V; R _L = 50Ω; C _L = 35pF, Figure 2 | +25°C | 45 | 140 | | ns |
| | | | T _{MIN} to T _{MAX} | | | 150 | |
| Turn-Off Time | t _{OFF} | V+ = 2.7V, V _{NO_} or V _{NC_} = 1.5V; R _L = 50Ω; C _L = 35pF, Figure 2 | +25°C | 25 | 50 | | ns |
| | | | T _{MIN} to T _{MAX} | | | 60 | |

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ELECTRICAL CHARACTERISTICS (continued)

(V+ = +2.7V to +5.25V, T_A = -40°C to +85°C, unless otherwise noted. Typical values are at V+ = 3V, T_A = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | T _A | MIN | TYP | MAX | UNITS |
|------------------------------|--|--|--------------------------------------|------|-----|-----|-------|
| Break-Before-Make (Note 7) | t _{BBM} | V+ = 2.7V, V _{NO_} or V _{NC_} = 1.5V; R _L = 50Ω, C _L = 35pF, Figure 3 | +25°C | 15 | | ns | |
| | | | T _{MIN} to T _{MAX} | 2 | | | |
| Skew (Note 7) | t _{SKEW} | R _S = 39Ω, C _L = 50pF, Figure 4 | +25°C | 0.2 | 0.5 | ns | |
| Charge Injection | Q | V _{GEN} = 0V, R _{GEN} = 0, C _L = 1.0nF, Figure 5 | +25°C | 15 | | pC | |
| On-Channel -3dB Bandwidth | BW | Signal = 0dBm, C _L = 5pF, R _L = 50Ω | +25°C | 320 | | MHz | |
| Off-Isolation (Note 8) | V _{ISO} | C _L = 5pF, R _L = 50Ω, V _{COM_} = 1V _{P-P} , f = 100kHz, Figure 6 | +25°C | 100 | | dB | |
| Crosstalk (Note 9) | V _{CT} | C _L = 5pF, R _L = 50Ω, V _{COM_} = 1V _{P-P} , f = 100kHz, Figure 6 | +25°C | 95 | | dB | |
| Total Harmonic Distortion | THD | f = 20Hz to 20kHz, 1V _{P-P} , R _L = 600Ω | +25°C | 0.03 | | % | |
| NO_, NC_ Off-Capacitance | C _{NO_(OFF)} , C _{NC_(OFF)} | V _{NO_} , V _{NC_} = GND, f = 1MHz, Figure 7 | +25°C | 25 | | pF | |
| COM_ On-Capacitance | C _{COM(ON)} | V _{NO_} , V _{NC_} = GND, f = 1MHz, Figure 7 | +25°C | 54 | | pF | |
| COM_ Off-Capacitance | C _{COM(OFF)} | V _{COM_} = GND, f = 1MHz (MAX4761), Figure 7 | +25°C | 25 | | pF | |
| DIGITAL I/O (IN_, EN) | | | | | | | |
| Input-Logic High | V _{IH} | V+ = 2.7V to 3.6V | T _{MIN} to T _{MAX} | 1.4 | | V | |
| | | V+ = 3.6V to 5.25V | T _{MIN} to T _{MAX} | 2.0 | | | |
| Input-Logic Low | V _{IL} | V+ = 2.7V to 3.6V | T _{MIN} to T _{MAX} | 0.5 | | V | |
| | | V+ = 3.6V to 5.25V | T _{MIN} to T _{MAX} | 0.6 | | | |
| Input Leakage Current | I _{IN} | V _{IN} = 0 or V+ | T _{MIN} to T _{MAX} | 1 | | μA | |
| POWER SUPPLY | | | | | | | |
| Power-Supply Range | V+ | | T _{MIN} to T _{MAX} | 1.8 | 5.5 | V | |
| Positive Supply Current | I+ | V+ = 4.3V, V _{IN_} = 0V or V+ | +25°C | 0.01 | | μA | |
| | | | T _{MIN} to T _{MAX} | 1.0 | | | |

Note 2: The algebraic convention is used in this data sheet; the most negative value is shown in the minimum column.

Note 3: UCSP packages are 100% tested at +25°C and limits across the full temperature range are guaranteed by correlation and design. Thin QFN packages are 100% tested at +85°C and limits across the full temperature range are guaranteed by correlation and design.

Note 4: R_{ON} and ΔR_{ON} matching specifications are guaranteed by design.

Note 5: ΔR_{ON} = R_{ON(MAX)} - R_{ON(MIN)}.

Note 6: Flatness is defined as the difference between the maximum and minimum value of on-resistance as measured over the specified analog signal ranges.

Note 7: Guaranteed by design, not production tested.

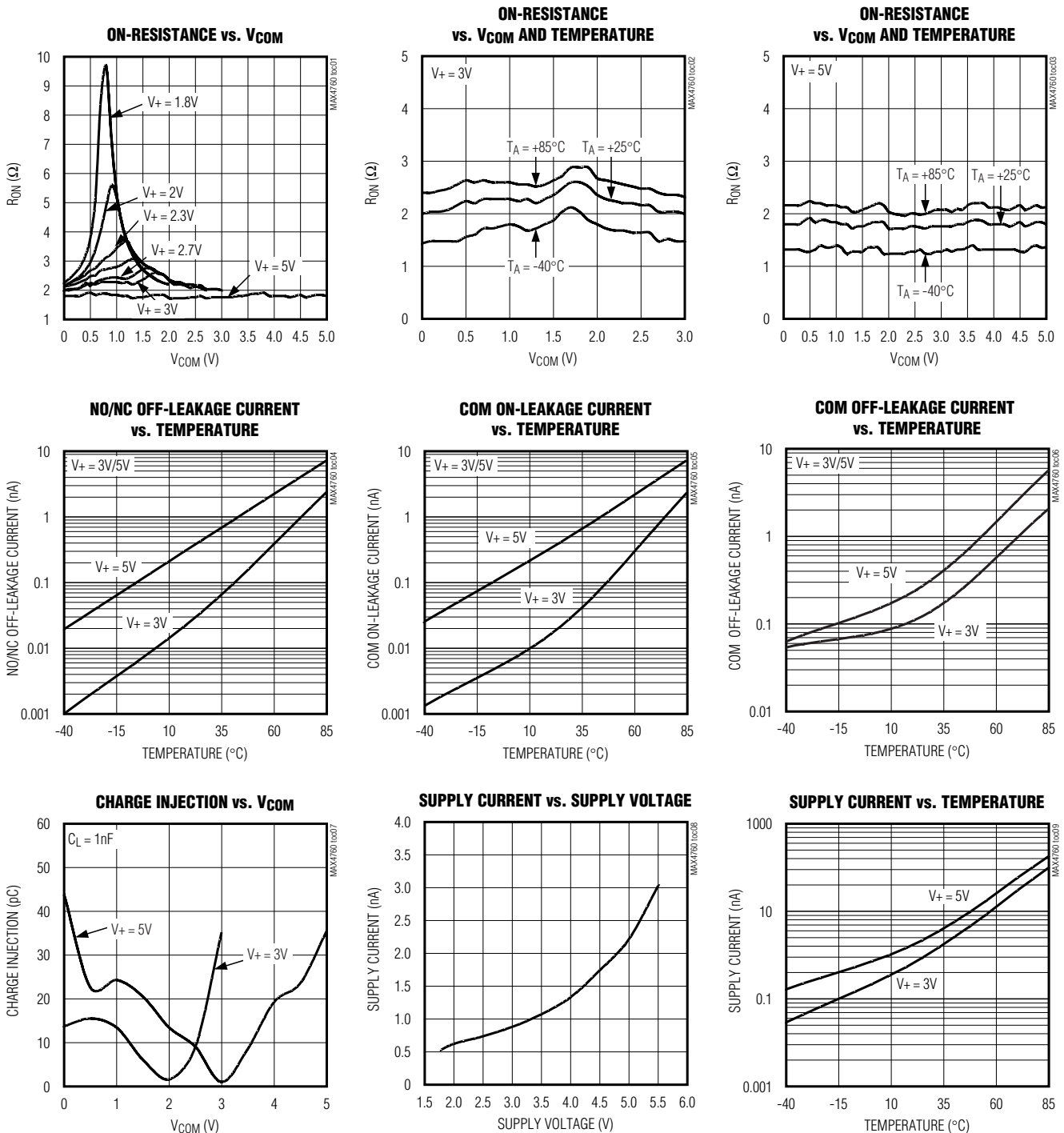
Note 8: Off-isolation = 20log₁₀ [V_{COM_} / (V_{NO_} or V_{NC_})], V_{COM_} = output, V_{NO_} or V_{NC_} = input to off switch.

Note 9: Between any two switches.

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Typical Operating Characteristics

($V_+ = 3V$, $T_A = +25^\circ C$, unless otherwise noted.)

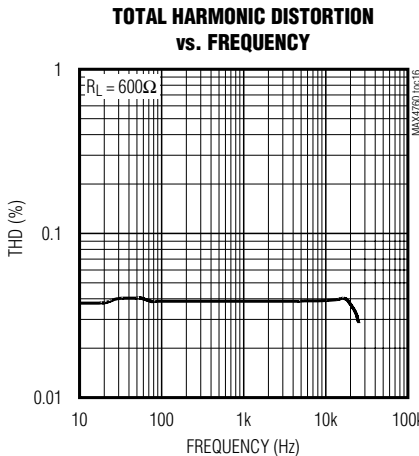
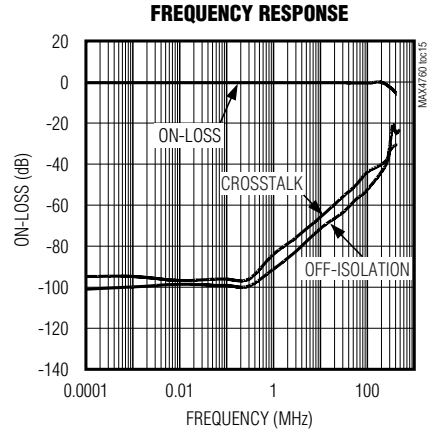
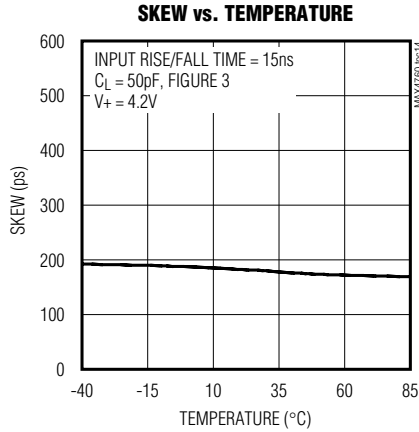
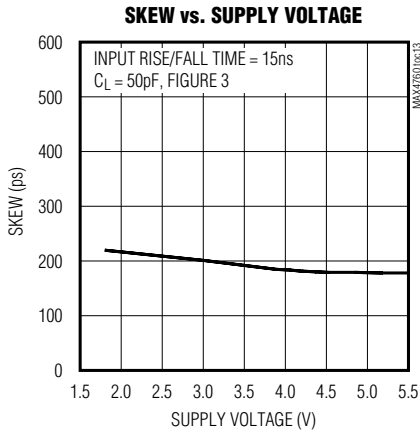
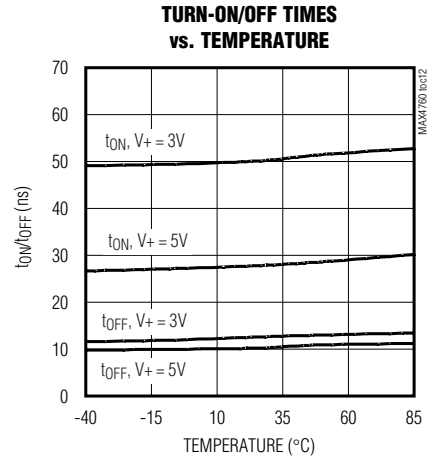
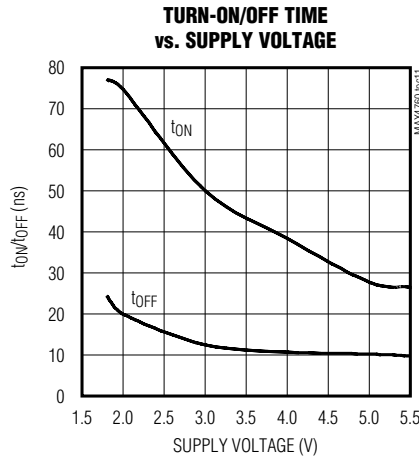
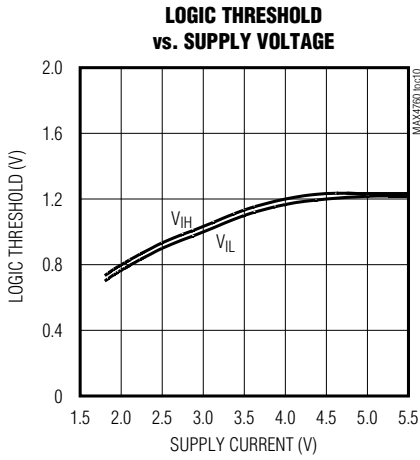


High-Bandwidth, Quad DPDT Switches

MAX4760/MAX4761

Typical Operating Characteristics (continued)

($V_+ = 3V$, $T_A = +25^\circ C$, unless otherwise noted.)



High-Bandwidth, Quad DPDT Switches

Pin Description

| PIN | | | | NAME | FUNCTION |
|------------------------|--------|-------------------------------|--------|-----------------|--|
| MAX4760 | | MAX4761 | | | |
| THIN QFN | UCSP | THIN QFN | UCSP | | |
| 1 | A1 | 1 | A1 | NC1 | Analog Switch 1, Normally Closed Terminal 1 |
| 2 | B2 | 2 | B2 | COM2 | Analog Switch 2, Common Terminal 2 |
| 3 | A2 | 3 | A2 | NC2 | Analog Switch 2, Normally Closed Terminal 2 |
| 4 | A3 | 4 | A3 | INA | Logic Control Digital Input for the MAX4760 Switch 1 and Switch 2. Digital control input for all MAX4761 switches. |
| 5 | C3, D4 | 5 | C3, D4 | V+ | Positive Supply Voltage |
| 6 | A4 | — | — | INB | Logic Control Digital Input for Switches 3 and 4 |
| 7 | A5 | 7 | A5 | NC3 | Analog Switch 3, Normally Closed Terminal 3 |
| 8 | B5 | 8 | B5 | COM3 | Analog Switch 3, Common Terminal 2 |
| 9 | A6 | 9 | A6 | NC4 | Analog Switch 4, Normally Closed Terminal 4 |
| 10 | B6 | 10 | B6 | COM4 | Analog Switch 4, Common Terminal 4 |
| 11, 14, 17, 29, 32, 35 | — | 6, 11, 14, 17, 24, 29, 32, 35 | A4, F3 | N.C. | No Connection. Not internally connected. |
| 12 | C5 | 12 | C5 | NO3 | Analog Switch 3, Normally Open Terminal 3 |
| 13 | C6 | 13 | C6 | NO4 | Analog Switch 4, Normally Open Terminal 4 |
| 15 | D6 | 15 | D6 | NO8 | Analog Switch 8, Normally Open Terminal 8 |
| 16 | D5 | 16 | D5 | NO7 | Analog Switch 7, Normally Open Terminal 7 |
| 18 | E6 | 18 | E6 | COM8 | Analog Switch 8, Common Terminal 8 |
| 19 | F6 | 19 | F6 | NC8 | Analog Switch 8, Normally Closed Terminal 8 |
| 20 | E5 | 20 | E5 | COM7 | Analog Switch 7, Common Terminal 7 |
| 21 | F5 | 21 | F5 | NC7 | Analog Switch 7, Normally Closed Terminal 7 |
| 22 | F4 | — | — | IND | Logic Control Digital Input for Switches 7 and 8 |
| 23 | C4, D3 | 23 | C4, D3 | GND | Ground |
| 24 | F3 | — | — | INC | Logic Control Digital Input for Switches 5 and 6 |
| 25 | F2 | 25 | F2 | NC6 | Analog Switch 6, Normally Closed Terminal 2 |
| 26 | E2 | 26 | E2 | COM6 | Analog Switch 6, Common Terminal 6 |
| 27 | F1 | 27 | F1 | NC5 | Analog Switch 5, Normally Closed Terminal 5 |
| 28 | E1 | 28 | E1 | COM5 | Analog Switch 5, Common Terminal 5 |
| 30 | D2 | 30 | D2 | NO6 | Analog Switch 6, Normally Open Terminal 6 |
| 31 | D1 | 31 | D1 | NO5 | Analog Switch 5, Normally Open Terminal 5 |
| 33 | C1 | 33 | C1 | NO1 | Analog Switch 1, Normally Open Terminal 1 |
| 34 | C2 | 34 | C2 | NO2 | Analog Switch 2, Normally Open Terminal 1 |
| 36 | B1 | 36 | B1 | COM1 | Analog Switch 1, Common Terminal 1 |
| — | — | 22 | F4 | \overline{EN} | Output Enable, Active Low |
| EP | — | EP | — | EP | Exposed Pad, Connect to GND. |

High-Bandwidth, Quad DPDT Switches

Detailed Description

The MAX4760 quad double-pole/double-throw (DPDT) and the MAX4761 octal single-pole/double-throw (SPDT) analog switches operate from a single +1.8V to +5.5V supply. These devices are fully specified for +3V applications.

The MAX4760/MAX4761 have a guaranteed 3.5Ω (max) on-resistance to switch data or audio signals. The low 25pF capacitance and 0.2ns change in skew makes them ideal for data switching applications. The MAX4760 has 4 logic inputs to control two switches in pairs and the MAX4761 has one logic control input and an enable input (\overline{EN}) to disable the switches.

Applications Information

Digital Control Inputs

The MAX4760/MAX4761 logic inputs accept up to +5.5V regardless of the supply voltage. For example, with a +3.3V supply, IN_{-} can be driven low to GND and high to +5.5V, which allows mixed logic levels in a system. Driving the control logic inputs rail-to-rail also minimizes power consumption. For a +3V supply voltage, the logic thresholds are 0.5V (low) and 1.4V (high).

For the MAX4761, drive \overline{EN} low to enable. When \overline{EN} is high, COM_{-} is high impedance.

Analog Signal Levels

Analog signal inputs over the full voltage range (0V to V_{+}) are passed through the switch with minimal change in on-resistance (see the *Typical Operating Characteristics*). The switches are bidirectional so NO_{-} , NC_{-} , and COM_{-} can be either inputs or outputs.

Power-Supply Bypassing

Power-supply bypassing improves noise margin and prevents switching noise from propagating from the V_{+} supply to other components. A 0.1 μ F capacitor connected from V_{+} to GND is adequate for most applications.

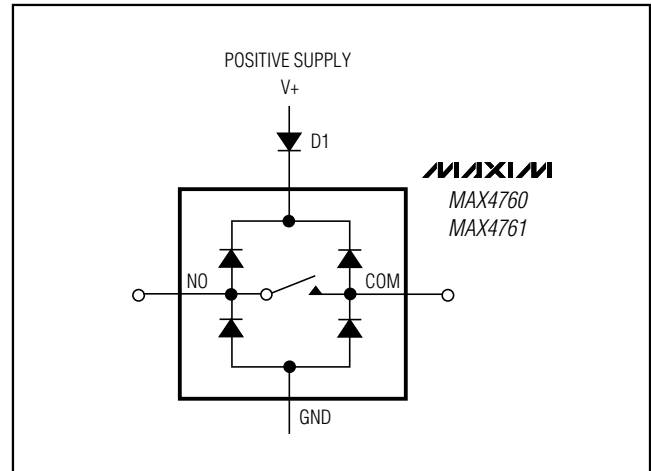


Figure 1. Overvoltage Protection Using an External Blocking Diode

Power-Supply Sequencing

CMOS devices require proper power-supply sequencing. Always apply V_{+} before the analog signals, especially if the input signal is not current limited. If sequencing is not possible, and the input signal is not current limited to less than 20mA, add a small-signal diode (Figure 1). Adding the diode reduces the analog range to a diode drop (0.7V) below V_{+} and increases the on-resistance slightly. The maximum supply voltage must not exceed +6V at any time.

UCSP Applications Information

For the latest application details on UCSP construction, dimensions, tape carrier information, printed circuit board techniques, bump-pad layout, and recommended reflow temperature profile, as well as the latest information on reliability testing results, go to the Maxim website at www.maxim-ic.com/ucsp for the Application Note, "UCSP—A Wafer-Level Chip-Scale Package."

High-Bandwidth, Quad DPDT Switches

Timing Circuits/Timing Diagrams

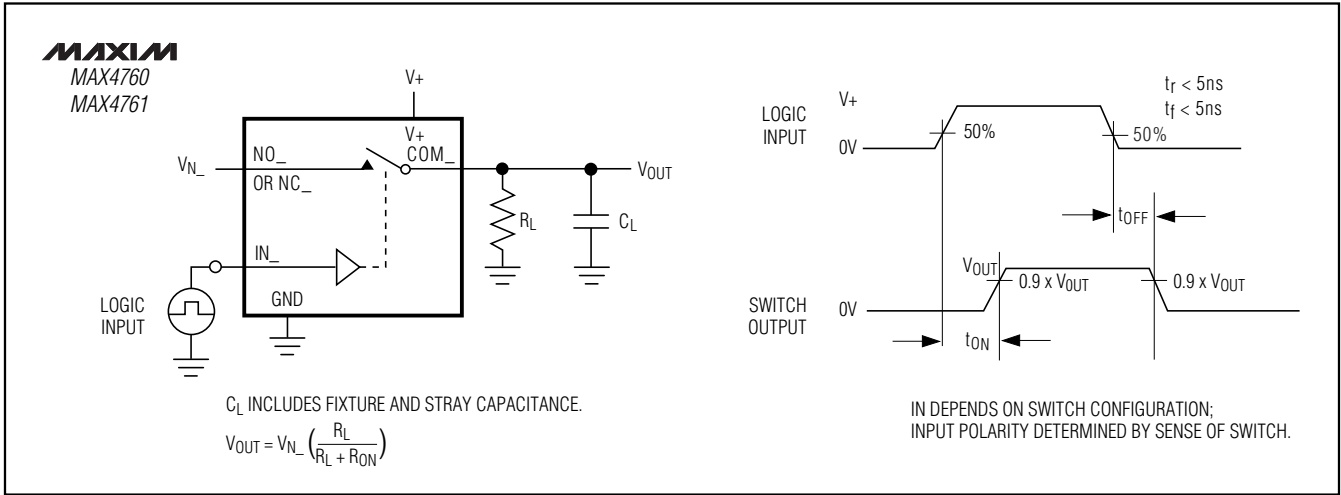


Figure 2. Switching Time

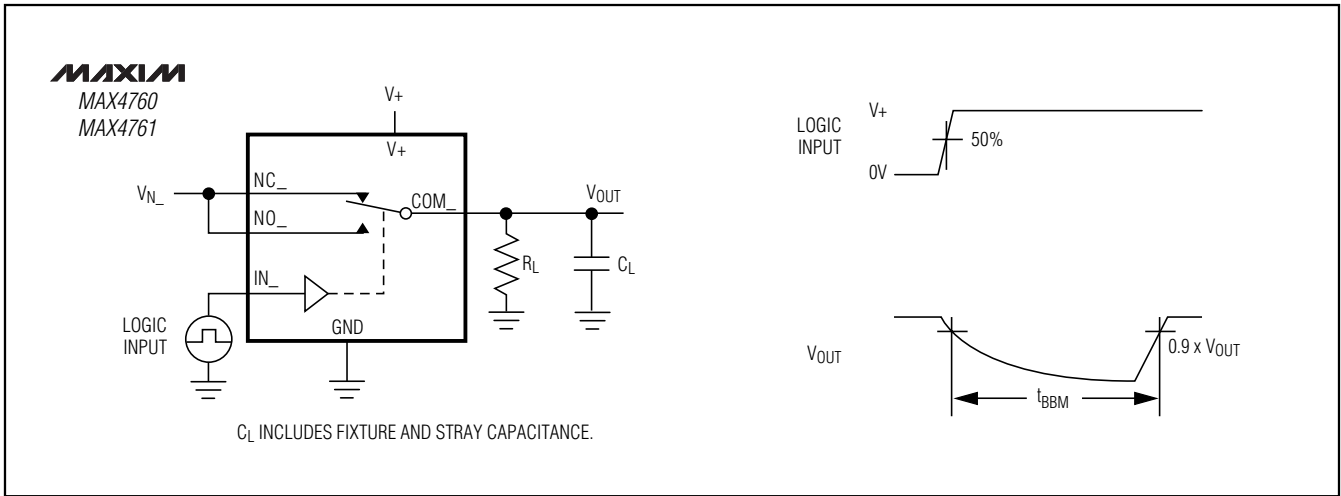


Figure 3. Break-Before-Make Interval

High-Bandwidth, Quad DPDT Switches

MAX4760/MAX4761

Timing Circuits/Timing Diagrams (continued)

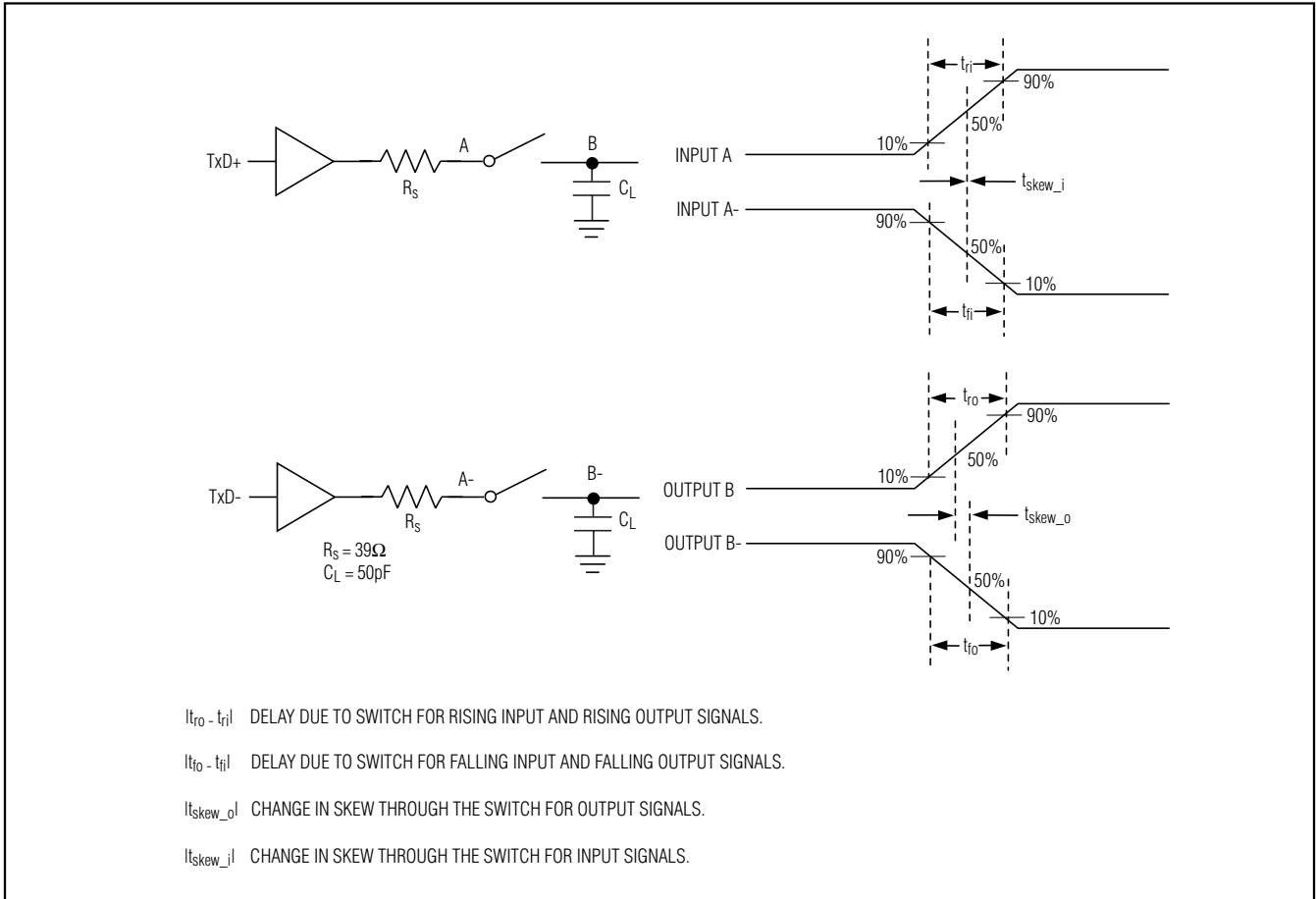


Figure 4. Input/Output Skew Timing Diagram

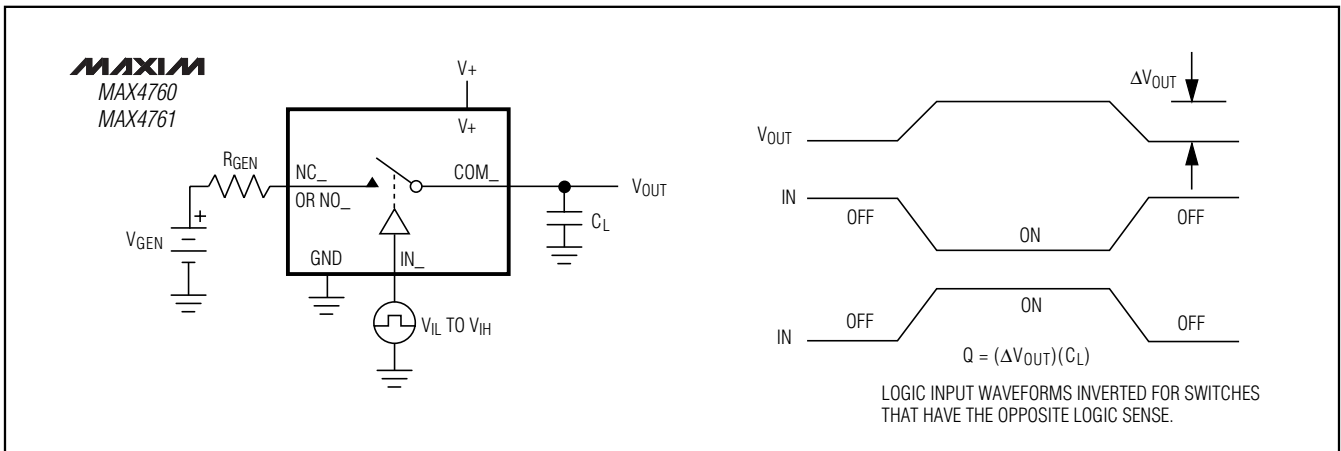


Figure 5. Charge Injection

High-Bandwidth, Quad DPDT Switches

Timing Circuits/Timing Diagrams (continued)

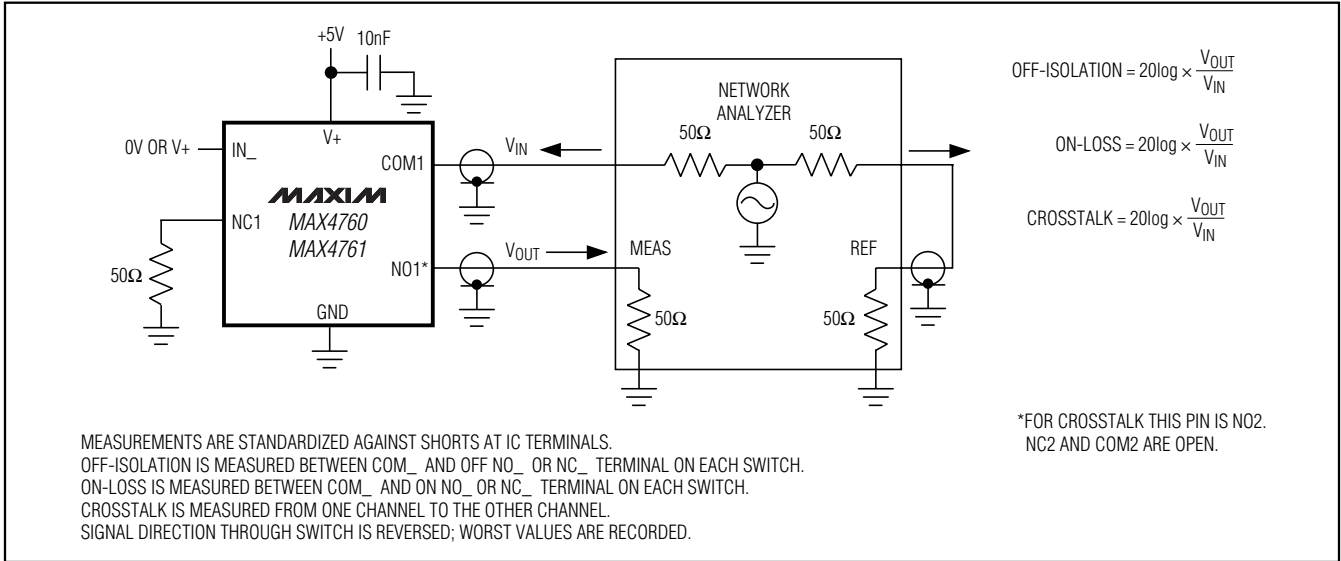


Figure 6. On-Loss, Off-Isolation, and Crosstalk

Typical Operating Circuit

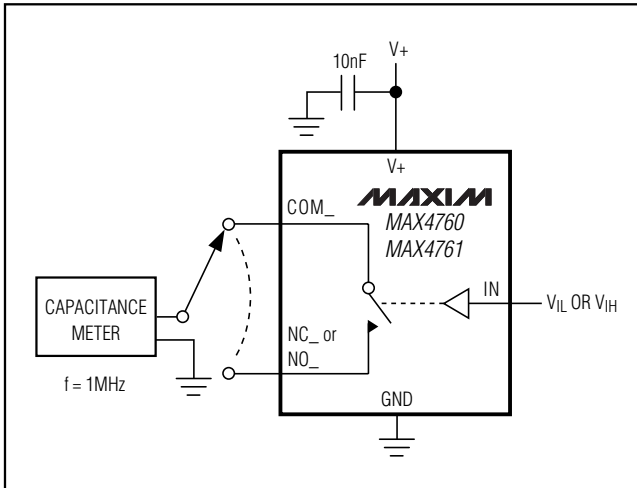
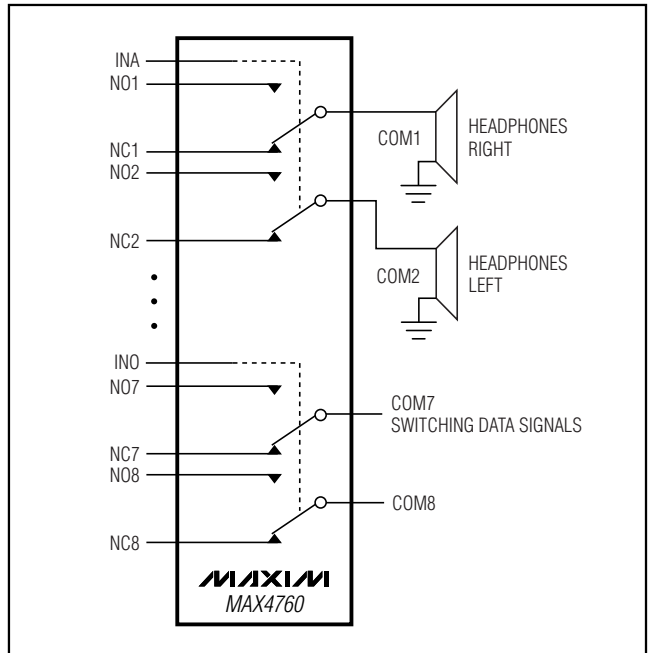


Figure 7. Channel On-/Off-Capacitance



High-Bandwidth, Quad DPDT Switches

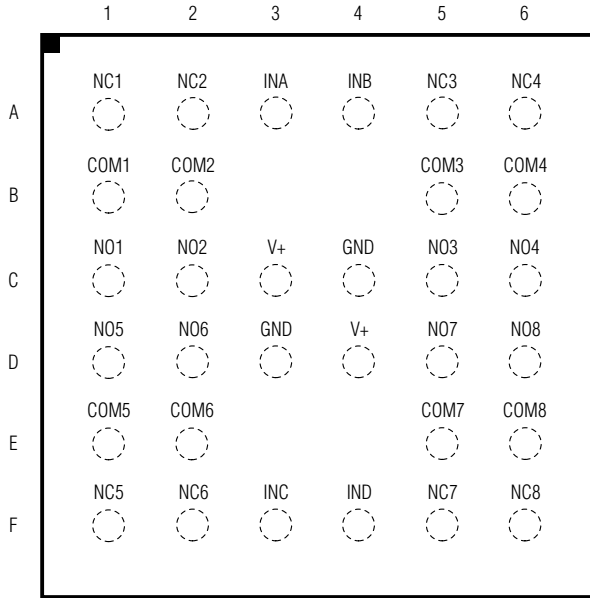
Pin Configurations/Truth Tables

MAX4760/MAX4761

TOP VIEW

MAXIM
MAX4760

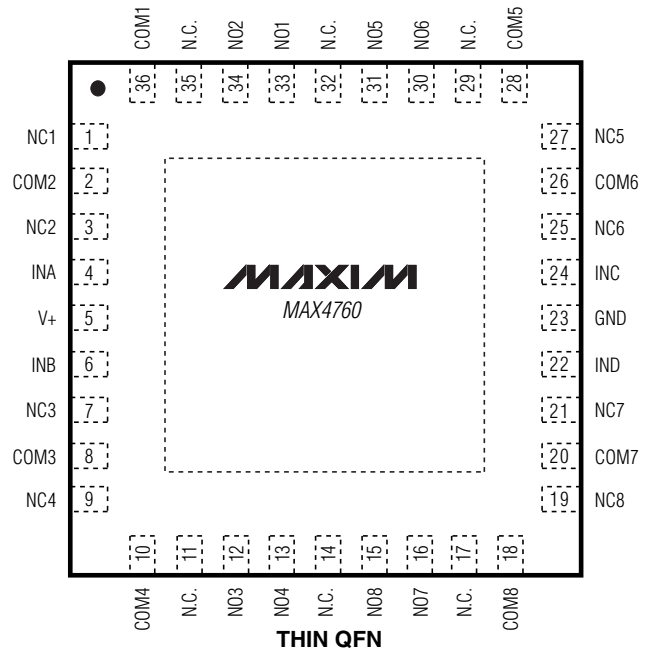
(BUMP SIDE DOWN)



UCSP

MAX4760

| INA | NO1/NO2 | NC1/NC2 |
|------|---------|---------|
| LOW | OFF | ON |
| HIGH | ON | OFF |
| INB | NO3/NO4 | NC3/NC4 |
| LOW | OFF | ON |
| HIGH | ON | OFF |
| INC | NO5/NO6 | NC5/NC6 |
| LOW | OFF | ON |
| HIGH | ON | OFF |
| IND | NO7/NO8 | NC7/NC8 |
| LOW | OFF | ON |
| HIGH | ON | OFF |



THIN QFN

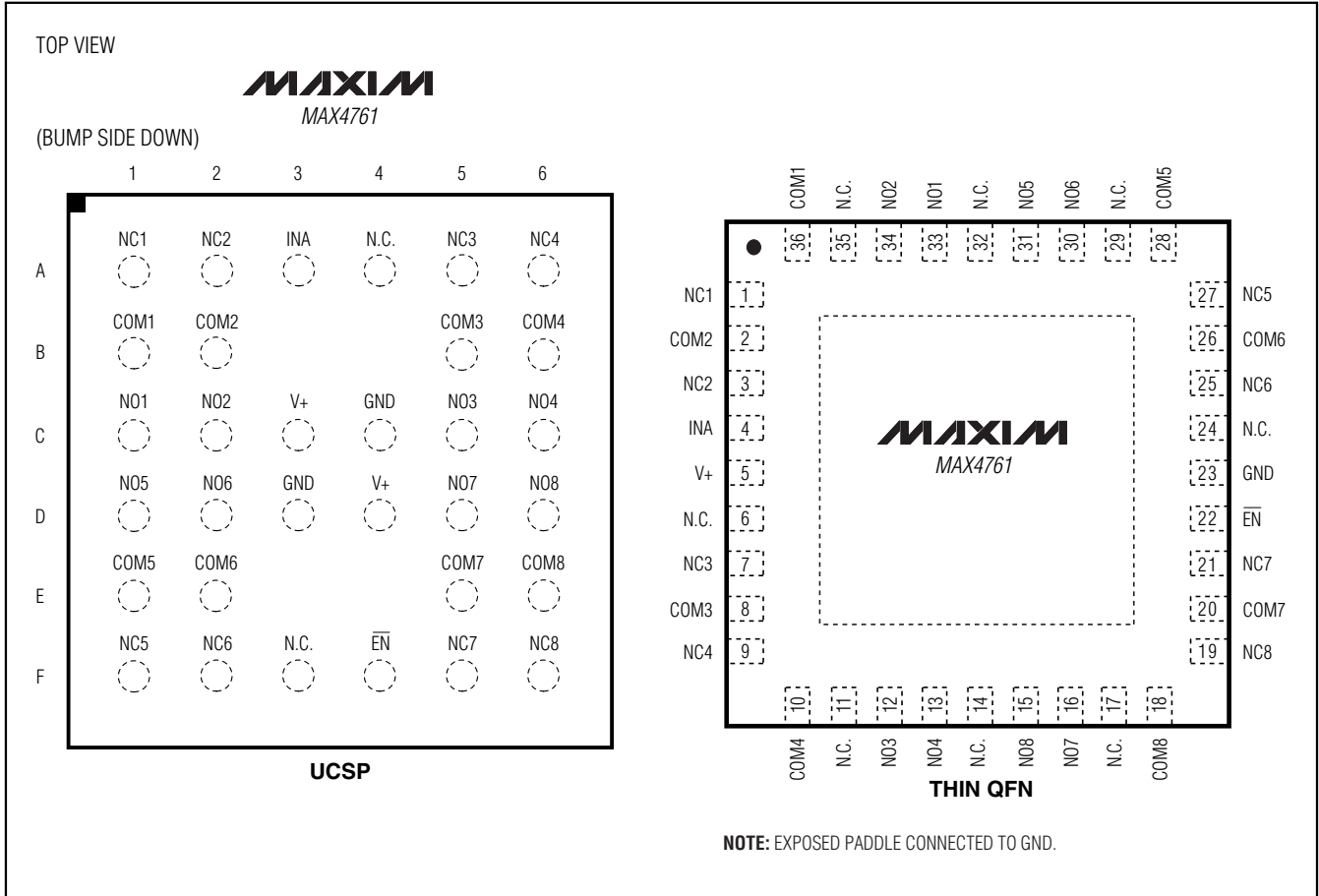
NOTE: EXPOSED PADDLE CONNECTED TO GND OR FLOATING.

MAX4761

| EN | INA | NO_ | NC_ |
|------|------|-----|-----|
| LOW | LOW | OFF | ON |
| LOW | HIGH | ON | OFF |
| HIGH | X | OFF | OFF |
| HIGH | X | OFF | OFF |

High-Bandwidth, Quad DPDT Switches

Pin Configurations/Truth Tables (continued)



Chip Information

TRANSISTOR COUNT: 1432

PROCESS: CMOS

Ordering Information (continued)

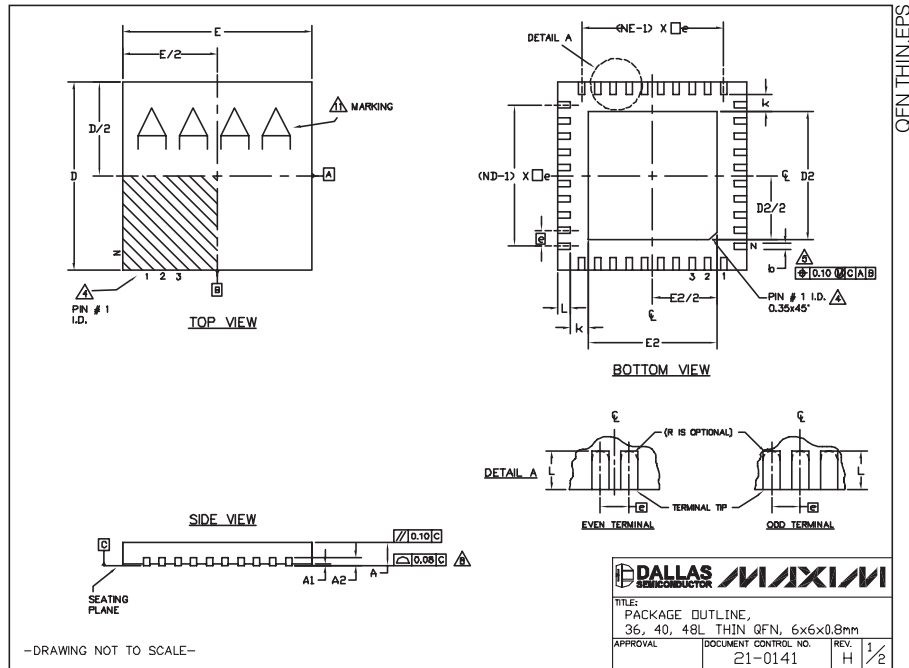
| PART | TEMP RANGE | PIN-PACKAGE | PKG CODE |
|--------------|----------------|----------------------------|----------|
| MAX4761EWX+T | -40°C to +85°C | 36 UCSP | AS27Y-2Z |
| MAX4761ETX | -40°C to +85°C | 36 Thin QFN (6mm x 6mm) | AS27Y-2Z |

High-Bandwidth, Quad DPDT Switches

Package Information

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information, go to www.maxim-ic.com/packages.)

MAX4760/MAX4761



| COMMON DIMENSIONS | | | | | | | | | |
|-------------------|-----------|------|------|-----------|------|------|-----------|------|------|
| PKG. SYMBOL | 36L 0x6 | | | 40L 0x6 | | | 48L 0x6 | | |
| | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. |
| A | 0.70 | 0.75 | 0.80 | 0.70 | 0.75 | 0.80 | 0.70 | 0.75 | 0.80 |
| A1 | 0 | 0.02 | 0.05 | 0 | 0.02 | 0.05 | 0 | - | 0.05 |
| A2 | 0.20 REF. | | | 0.20 REF. | | | 0.20 REF. | | |
| b | 0.20 | 0.25 | 0.30 | 0.20 | 0.25 | 0.30 | 0.15 | 0.20 | 0.25 |
| D | 5.90 | 6.00 | 6.10 | 5.90 | 6.00 | 6.10 | 5.90 | 6.00 | 6.10 |
| E | 5.90 | 6.00 | 6.10 | 5.90 | 6.00 | 6.10 | 5.90 | 6.00 | 6.10 |
| e | 0.60 BSC. | | | 0.60 BSC. | | | 0.40 BSC. | | |
| k | 0.25 | - | - | 0.25 | - | - | 0.25 | - | - |
| L | 0.45 | 0.55 | 0.65 | 0.30 | 0.40 | 0.50 | 0.30 | 0.40 | 0.50 |
| N | 36 | | | 40 | | | 48 | | |
| ND | 9 | | | 10 | | | 12 | | |
| NE | 9 | | | 10 | | | 12 | | |
| JEDEC | WJ4D-1 | | | WJ4D-2 | | | - | | |

| PKG. CODES | D2 | | | E2 | | |
|------------|------|------|------|------|------|------|
| | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. |
| T3666-2 | 3.60 | 3.70 | 3.80 | 3.60 | 3.70 | 3.80 |
| T3666-3 | 3.60 | 3.70 | 3.80 | 3.60 | 3.70 | 3.80 |
| T3666N-1 | 3.60 | 3.70 | 3.80 | 3.60 | 3.70 | 3.80 |
| T3666M-1 | 3.60 | 3.70 | 3.80 | 3.60 | 3.70 | 3.80 |
| T4066-2 | 4.00 | 4.10 | 4.20 | 4.00 | 4.10 | 4.20 |
| T4066-3 | 4.00 | 4.10 | 4.20 | 4.00 | 4.10 | 4.20 |
| T4066-4 | 4.00 | 4.10 | 4.20 | 4.00 | 4.10 | 4.20 |
| T4066-5 | 4.00 | 4.10 | 4.20 | 4.00 | 4.10 | 4.20 |
| T4866-1 | 4.40 | 4.50 | 4.60 | 4.40 | 4.50 | 4.60 |
| T4866-2 | 4.40 | 4.50 | 4.60 | 4.40 | 4.50 | 4.60 |

NOTES:

- DIMENSIONING & TOLERANCING CONFORM TO ASME Y14.5M-1994.
- ALL DIMENSIONS ARE IN MILLIMETERS. ANGLES ARE IN DEGREES.
- N IS THE TOTAL NUMBER OF TERMINALS.
- THE TERMINAL #1 IDENTIFIER AND TERMINAL NUMBERING CONVENTION SHALL CONFORM TO JEDEC 95-1 SPP-012. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL, BUT MUST BE LOCATED WITHIN THE ZONE INDICATED. THE TERMINAL #1 IDENTIFIER MAY BE EITHER A MOLD OR MARKED FEATURE.
- DIMENSION b APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN 0.25 mm AND 0.30 mm FROM TERMINAL TIP.
- ND AND NE REFER TO THE NUMBER OF TERMINALS ON EACH D AND E SIDE RESPECTIVELY.
- DEPOPULATION IS POSSIBLE IN A SYMMETRICAL FASHION.
- COPLANARITY APPLIES TO THE EXPOSED HEAT SINK SLUG AS WELL AS THE TERMINALS.
- DRAWING CONFORMS TO JEDEC MO220, EXCEPT FOR 0.4mm LEAD PITCH PACKAGE T4866-1.
- WARPAGE SHALL NOT EXCEED 0.10 mm.
- MARKING IS FOR PACKAGE ORIENTATION REFERENCE ONLY.
- NUMBER OF LEADS SHOWN FOR REFERENCE ONLY.

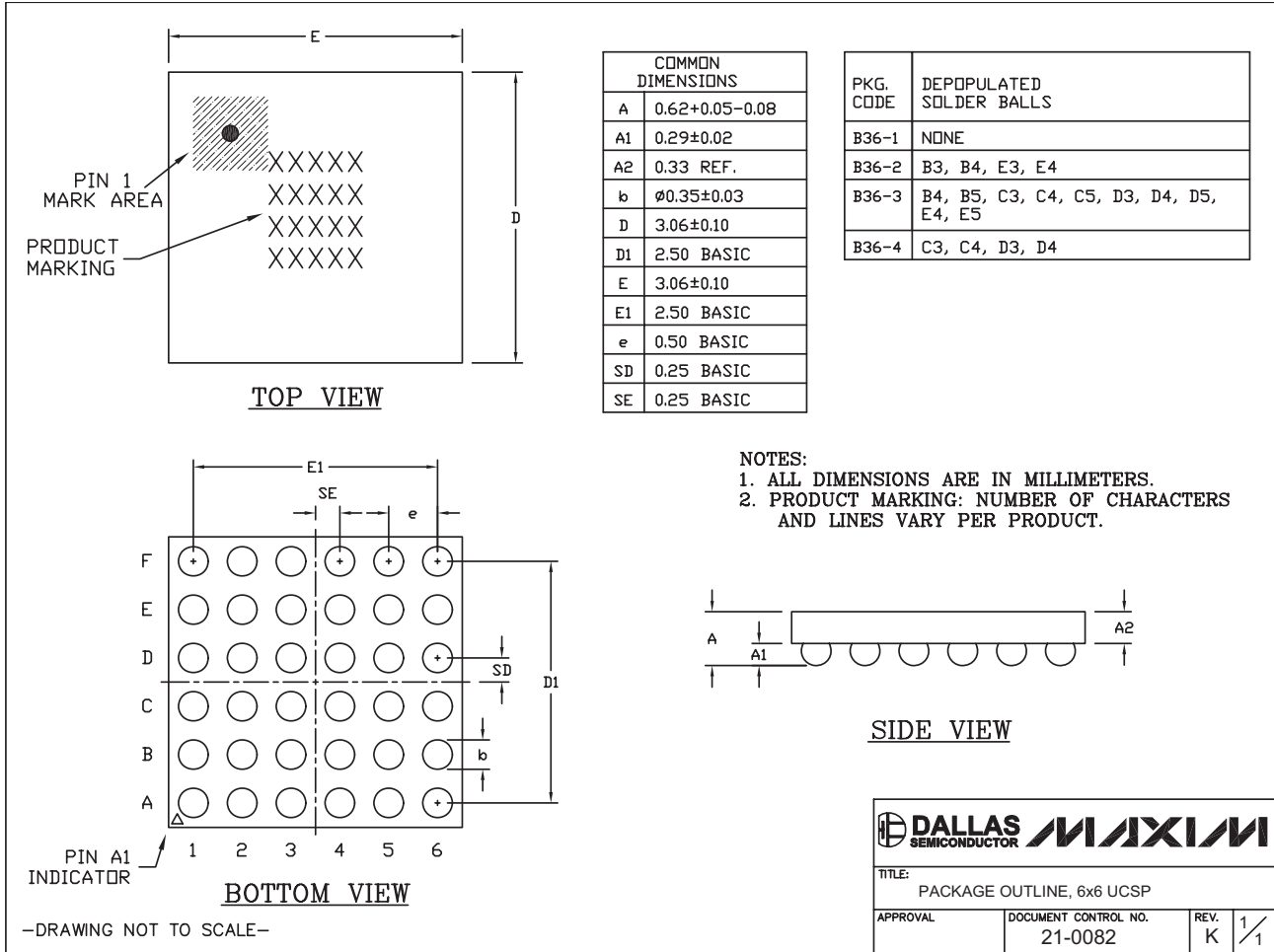
-DRAWING NOT TO SCALE-

TITLE: PACKAGE OUTLINE, 36, 40, 48L THIN QFN, 6x6x0.8mm
 APPROVAL: DOCUMENT CONTROL NO. 21-0141 REV. H 2/2

High-Bandwidth, Quad DPDT Switches

Package Information (continued)

(The package drawing(s) in this data sheet may not reflect the most current specifications. For the latest package outline information, go to www.maxim-ic.com/packages.)



36L UCSP.EPS

Revision History

Pages changed at Rev 3: 1, 12, 14

Maxim cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Maxim product. No circuit patent licenses are implied. Maxim reserves the right to change the circuitry and specifications without notice at any time.

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MAX4761

Part Number Table

Notes:

1. See the [MAX4761 QuickView Data Sheet](#) for further information on this product family or download the [MAX4761 full data sheet](#) (PDF, 336kB).
2. Other options and links for purchasing parts are listed at: <http://www.maxim-ic.com/sales>.
3. [Didn't Find What You Need?](#) Ask our applications engineers. Expert assistance in finding parts, usually within one business day.
4. Part number suffixes: T or T&R = tape and reel; + = RoHS/lead-free; # = RoHS/lead-exempt. More: See [full data sheet](#) or [Part Naming Conventions](#).
5. * Some packages have variations, listed on the drawing. "PkgCode/Variation" tells which variation the product uses.

| Part Number | Free Sample | Buy Direct | Package: TYPE PINS SIZE DRAWING CODE/VAR * | Temp | RoHS/Lead-Free? Materials Analysis |
|--------------|-------------|------------|---|--------------|---|
| MAX4761ETX+T | | | THIN QFN;36 pin;6x6x0.8mm Dwg: 21-0141H (PDF) Use pkgcode/variation: T3666+3* | -40C to +85C | RoHS/Lead-Free: Yes Materials Analysis |
| MAX4761ETX+ | | | THIN QFN;36 pin;6x6x0.8mm Dwg: 21-0141H (PDF) Use pkgcode/variation: T3666+3* | -40C to +85C | RoHS/Lead-Free: Yes Materials Analysis |
| MAX4761ETX | | | THIN QFN;36 pin;6x6x0.8mm Dwg: 21-0141H (PDF) Use pkgcode/variation: T3666-3* | -40C to +85C | RoHS/Lead-Free: No Materials Analysis |
| MAX4761ETX-T | | | THIN QFN;36 pin;6x6x0.8mm Dwg: 21-0141H (PDF) Use pkgcode/variation: T3666-3* | -40C to +85C | RoHS/Lead-Free: No Materials Analysis |
| MAX4761EBX | | | UCSP;32 pin; Dwg: 21-0082K (PDF) Use pkgcode/variation: B36-2* | -40C to +85C | RoHS/Lead-Free: No Materials Analysis |
| MAX4761EBX-T | | | UCSP;32 pin; Dwg: 21-0082K (PDF) Use pkgcode/variation: B36-2* | -40C to +85C | RoHS/Lead-Free: No Materials Analysis |

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