



**THE DATASHEET OF
DG444DY+T**





Improved, Quad, SPST Analog Switches

DG444/DG445

General Description

Maxim's redesigned DG444/DG445 analog switches now feature on-resistance matching (4Ω max) between switches and guaranteed on-resistance flatness over the signal range (9Ω max). These low on-resistance switches conduct equally well in either direction. They guarantee low charge injection (10pC max), low power consumption ($35\mu\text{W}$ max), and an electrostatic discharge (ESD) tolerance of 2000V (min) per Method 3015.7. The new design offers lower off-leakage current over temperature (less than 5nA at $+85^\circ\text{C}$).

The DG444/DG445 are quad, single-pole/single-throw (SPST) analog switches. The DG444 has four normally closed switches and the DG445 has four normally open switches. Switching times are less than 250ns for t_{ON} and less than 70ns for t_{OFF} . Operation is from a single $+10\text{V}$ to $+30\text{V}$ supply, or bipolar $\pm 4.5\text{V}$ to $\pm 20\text{V}$ supplies. Maxim's improved DG444/DG445 continue to be fabricated with a 44V silicon-gate process.

Applications

| | |
|------------------------------|--------------------------|
| Sample-and-Hold Circuits | Communication Systems |
| Test Equipment | Battery-Operated Systems |
| Heads-Up Displays | PBX, PABX |
| Guidance and Control Systems | Audio Signal Routing |
| Military Radios | Modems/Faxes |

New Features

- ◆ Plug-In Upgrades for Industry-Standard DG444/DG445
- ◆ Improved R_{ON} Match Between Channels (4Ω max)
- ◆ Guaranteed $R_{\text{FLAT(ON)}}$ Over Signal Range (9Ω max)
- ◆ Improved Charge Injection (10pC max)
- ◆ Improved Off-Leakage Current Over Temperature ($< 5\text{nA}$ at $+85^\circ\text{C}$)
- ◆ Withstand ESD (2000V min) per Method 3015.7

Existing Features

- ◆ Low $R_{\text{DS(ON)}}$ (85Ω max)
- ◆ Single-Supply Operation $+10\text{V}$ to $+30\text{V}$
Bipolar-Supply Operation $\pm 4.5\text{V}$ to $\pm 20\text{V}$
- ◆ Low Power Consumption ($35\mu\text{W}$ max)
- ◆ Rail-to-Rail Signal Handling
- ◆ TTL/CMOS-Logic Compatible

Ordering Information

| PART | TEMP RANGE | PIN-PACKAGE |
|----------|--|----------------|
| DG444CJ | 0°C to $+70^\circ\text{C}$ | 16 Plastic DIP |
| DG444CY | 0°C to $+70^\circ\text{C}$ | 16 Narrow SO |
| DG444C/D | 0°C to $+70^\circ\text{C}$ | Dice* |
| DG444DJ | -40°C to $+85^\circ\text{C}$ | 16 Plastic DIP |
| DG444DY | -40°C to $+85^\circ\text{C}$ | 16 Narrow SO |

Ordering Information continued at end of data sheet.
*Contact factory for dice specifications.

Pin Configurations/Functional Diagrams/Truth Tables

TOP VIEW

DIP/SO

| DG444 | |
|-------|--------|
| LOGIC | SWITCH |
| 0 | ON |
| 1 | OFF |

Thin QFN

SWITCHES SHOWN FOR LOGIC "0" INPUT

Pin Configurations continued at end of data sheet.

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ABSOLUTE MAXIMUM RATINGS

(Voltage Referenced to V-)

| | |
|---|--|
| V+ | 44V |
| GND | 25V |
| V _L | (GND - 0.3V) to (V+ + 0.3V) |
| Digital Inputs V _S , V _D (Note 1) | (V- - 2V) to (V+ + 2V) or 30mA (whichever occurs first) |
| Continuous Current (any terminal) | 30mA |
| Peak Current, S or D (pulsed at 1ms, 10% duty cycle max) .. | 100mA |

Continuous Power Dissipation (T_A = +70°C)

| | |
|---|-----------------|
| 6-Pin Narrow SO (derate 8.70mW/°C above +70°C) .. | 696mW |
| 16-Pin PDIP (derate 10.53mW/°C above +70°C) | 842mW |
| 16-Pin Thin QFN (derate 33.3mW/°C above +70°C) .. | 2667mW |
| Operating Temperature Ranges | |
| DG444C/DG445C | 0°C to +70°C |
| DG444D, E/DG445D, E | -40°C to +85°C |
| Storage Temperature Range | -65°C to +150°C |
| Lead Temperature (soldering, 10s) | +300°C |

Note 1: Signals on S, D, or IN exceeding V+ or V- are clamped by internal diodes. Limit forward 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—Dual Supplies

(V+ = 15V, V- = -15V, V_L = 5V, GND = 0, V_{INH} = 2.4V, V_{INL} = 0.8V, T_A = T_{MIN} to T_{MAX}, unless otherwise noted.)

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP (Note 2) | MAX | UNITS | | |
|---|--|---|---|-----------------|-------|-------|-------|----|
| SWITCH | | | | | | | | |
| Analog Signal Range | V _{ANALOG} | (Note 3) | -15 | | +15 | V | | |
| Drain-Source On-Resistance | R _{DSON} | V+ = 13.5V, V- = -13.5V, V _D = ±8.5V, I _S = -10mA | T _A = +25°C | | 50 | 85 | Ω | |
| | | | T _A = T _{MIN} to T _{MAX} | | | 100 | | |
| On-Resistance Match Between Channels (Note 4) | ΔR _{DSON} | V _D = ±10V, I _S = -10mA | T _A = +25°C | | | 4 | Ω | |
| | | | T _A = T _{MIN} to T _{MAX} | | | 5 | | |
| On-Resistance Flatness (Note 4) | R _{FLAT(ON)} | V _D = ±5V, I _S = -10mA | T _A = +25°C | | | 9 | Ω | |
| | | | T _A = T _{MIN} to T _{MAX} | | | 15 | | |
| Source Leakage Current (Note 5) | I _{S(OFF)} | V+ = 16.5V, V- = -16.5V, V _D = ±15.5V, V _S = ∓15.5V | T _A = +25°C | | -0.50 | +0.01 | +0.50 | nA |
| | | | T _A = T _{MIN} to T _{MAX} | | -5 | | +5 | |
| Drain Off-Leakage Current (Note 5) | I _{D(OFF)} | V+ = 16.5V, V- = -16.5V, V _D = ±15.5V, V _S = ∓15.5V | T _A = +25°C | | -0.50 | +0.01 | +0.50 | nA |
| | | | T _A = T _{MIN} to T _{MAX} | | -5 | | +5 | |
| Drain On-Leakage Current (Note 5) | I _{D(ON)} or I _{S(ON)} | V+ = 16.5V, V- = -16.5V, V _D = ±15.5V, V _S = ±15.5V | T _A = +25°C | | -0.50 | +0.08 | +0.50 | nA |
| | | | T _A = T _{MIN} to T _{MAX} | | -10 | | +10 | |
| INPUT | | | | | | | | |
| Input Current with Input Voltage High | I _{INH} | V _{IN} = 2.4V, all others = 0.8V | -0.5 | -0.00001 | +0.5 | μA | | |
| Input Current with Input Voltage Low | I _{INL} | V _{IN} = 0.8V, all others = 2.4V | -0.5 | -0.00001 | +0.5 | μA | | |

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DG444/DG445

ELECTRICAL CHARACTERISTICS—Dual Supplies (continued)

(V+ = 15V, V- = -15V, VL = 5V, GND = 0, VINH = 2.4V, VINL = 0.8V, TA = TMIN to TMAX, unless otherwise noted.)

| PARAMETER | SYMBOL | CONDITIONS | | MIN | TYP (Note 2) | MAX | UNITS |
|--|---------|---|-------------------|------|-----------------|-------|-------|
| SWITCH | | | | | | | |
| Power-Supply Range | V+, V- | | | ±4.5 | | ±20.0 | V |
| Positive Supply Current | I+ | All channels on or off, V+ = 16.5V, V- = -16.5V, VIN = 0V or 5V | TA = +25°C | -1 | -0.001 | +1 | µA |
| | | | TA = TMIN to TMAX | -5 | | +5 | |
| Negative Supply Current | I- | All channels on or off, V+ = 16.5V, V- = -16.5V, VIN = 0V or 5V | TA = +25°C | -1 | -0.0001 | +1 | µA |
| | | | TA = TMIN to TMAX | -5 | | +5 | |
| Logic Supply Current | IL | All channels on or off, V+ = 16.5V, V- = -16.5V, VIN = 0V or 5V | TA = +25°C | -1 | -0.001 | +1 | µA |
| | | | TA = TMIN to TMAX | -5 | | +5 | |
| Ground Current | IGND | All channels on or off, V+ = 16.5V, V- = -16.5V, VIN = 0V or 5V | TA = +25°C | -1 | -0.0001 | +1 | µA |
| | | | TA = TMIN to TMAX | -5 | | +5 | |
| INPUT | | | | | | | |
| Turn-On Time | tON | VS = ±10V, Figure 2 | TA = +25°C | | 150 | 250 | ns |
| Turn-Off Time | tOFF | DG444, VS = ±10V, Figure 2 | TA = +25°C | | 90 | 120 | ns |
| | | DG445, VS = ±10V, Figure 2 | TA = +25°C | | 110 | 170 | ns |
| Charge Injection (Note 3) | Q | CL = 1nF, VGEN = 0, RGEN = 0Ω, Figure 3 | TA = +25°C | | 5 | 10 | pC |
| Off-Isolation Rejection Ratio (Note 6) | OIRR | RL = 50Ω, CL = 5pF, f = 1MHz, Figure 4 | TA = +25°C | | 60 | | dB |
| Crosstalk (Note 7) | | RL = 50Ω, CL = 5pF, f = 1MHz, Figure 5 | TA = +25°C | | 100 | | dB |
| Source Off-Capacitance | CS(OFF) | f = 1MHz, Figure 6 | TA = +25°C | | 4 | | pF |
| Drain Off-Capacitance | CD(OFF) | f = 1MHz, Figure 6 | TA = +25°C | | 4 | | pF |
| Source On-Capacitance | CS(ON) | f = 1MHz, Figure 7 | TA = +25°C | | 16 | | pF |
| Drain On-Capacitance | CD(ON) | f = 1MHz, Figure 7 | TA = +25°C | | 16 | | pF |

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ELECTRICAL CHARACTERISTICS—Single Supply

($V_+ = 12V$, $V_- = 0$, $V_L = 5V$, $GND = 0$, $V_{INH} = 2.4V$, $V_{INL} = 0.8V$, $T_A = T_{MIN}$ to T_{MAX} , unless otherwise noted.)

| PARAMETER | SYMBOL | CONDITIONS | MIN | TYP (Note 2) | MAX | UNITS | |
|----------------------------|--------------|---|------------------------------|-----------------|---------|----------|---------|
| SWITCH | | | | | | | |
| Analog Signal Range | V_{ANALOG} | (Note 3) | 0 | | 12 | V | |
| Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_+ = 10.8V$; $V_L = 5.25V$; $V_D = 3V, 8V$; $I_S = -10mA$ | $T_A = +25^\circ C$ | 100 | 160 | Ω | |
| | | | $T_A = T_{MIN}$ to T_{MAX} | | 200 | | |
| SUPPLY | | | | | | | |
| Power-Supply Range | V_+, V_- | | 10.8 | | 24.0 | V | |
| Power-Supply Current | I_+ | All channels on or off, $V_{IN} = 0V$ or $5V$ | $T_A = +25^\circ C$ | -1 | +0.001 | +1 | μA |
| | | | $T_A = T_{MIN}$ to T_{MAX} | -5 | | +5 | |
| Negative Supply Current | I_- | All channels on or off, $V_{IN} = 0V$ or $5V$ | $T_A = +25^\circ C$ | -1 | -0.0001 | +1 | μA |
| | | | $T_A = T_{MIN}$ to T_{MAX} | -5 | | +5 | |
| Logic Supply Current | I_L | All channels on or off, $V_{IN} = 0V$ or $5V$ | $T_A = +25^\circ C$ | -1 | +0.001 | +1 | μA |
| | | | $T_A = T_{MIN}$ to T_{MAX} | -5 | | +5 | |
| Ground Current | I_{GND} | All channels on or off, $V_{IN} = 0V$ or $5V$ | $T_A = +25^\circ C$ | -1 | -0.0001 | +1 | μA |
| | | | $T_A = T_{MIN}$ to T_{MAX} | -5 | | +5 | |
| DYNAMIC | | | | | | | |
| Turn-On Time | t_{ON} | $V_S = 8V$, Figure 2 | | 300 | 400 | ns | |
| Turn-Off Time | t_{OFF} | $V_S = 8V$, Figure 2 | | 60 | 200 | ns | |
| Charge Injection (Note 3) | Q | $C_L = 1nF$, $V_{GEN} = 0$, $R_{GEN} = 0\Omega$, Figure 3 | | 5 | 10 | pC | |

Note 2: Typical values are for **design aid only**, are not guaranteed, and are not subject to production testing. The algebraic convention, where the most negative value is a minimum and the most positive value a maximum, is used in this data sheet.

Note 3: Guaranteed by design.

Note 4: On-resistance match between channels and flatness are guaranteed only with bipolar-supply operation. Flatness is defined as the difference between the maximum and the minimum value of on-resistance as measured at the extremes of the specified analog signal range.

Note 5: Leakage parameters $I_{S(OFF)}$, $I_{D(OFF)}$, $I_{D(ON)}$, and $I_{S(ON)}$ are 100% tested at the maximum rated hot temperature and guaranteed at $+25^\circ C$.

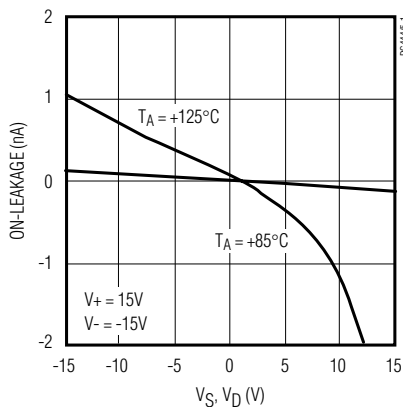
Note 6: Off-Isolation Rejection Ratio = $20\log(V_D/V_S)$, V_D = output, V_S = input to off switch.

Note 7: Between any two switches.

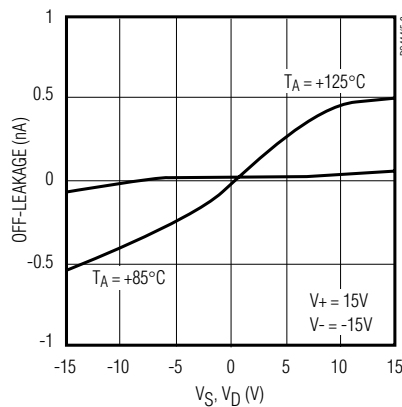
Typical Operating Characteristics

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

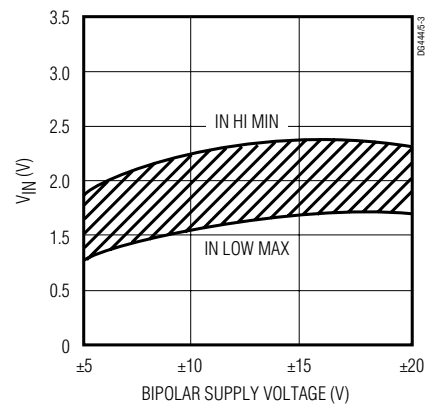
ON-LEAKAGE CURRENTS



OFF-LEAKAGE CURRENTS



SWITCHING THRESHOLD vs. BIPOLAR SUPPLY VOLTAGE



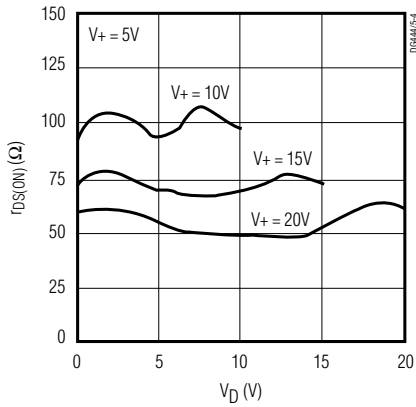
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Typical Operating Characteristics

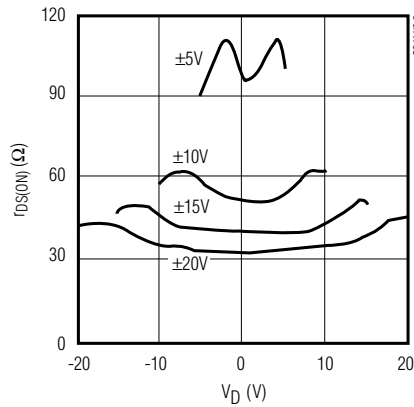
($T_A = +25^\circ\text{C}$, unless otherwise noted.)

DG4444/DG4445

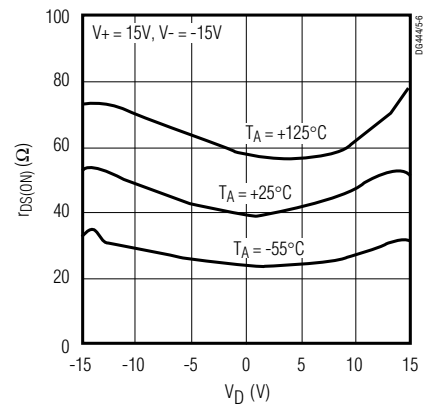
ON-RESISTANCE vs. V_D AND UNIPOLAR-SUPPLY VOLTAGE



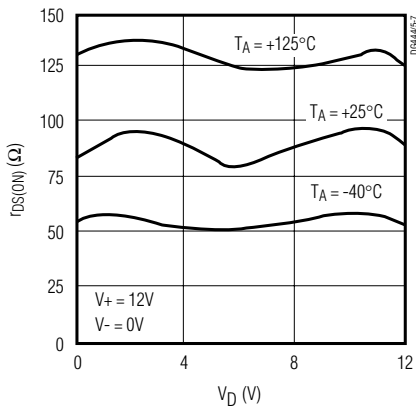
ON-RESISTANCE vs. V_D AND BIPOLAR-SUPPLY VOLTAGE



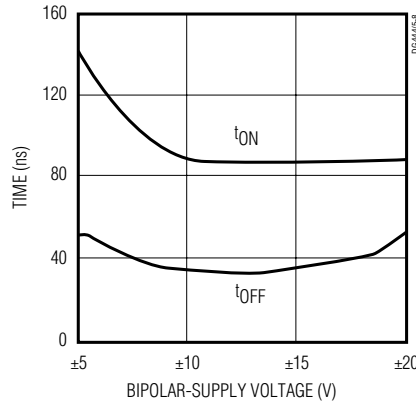
ON-RESISTANCE vs. V_D , BIPOLAR-SUPPLY VOLTAGE AND TEMPERATURE



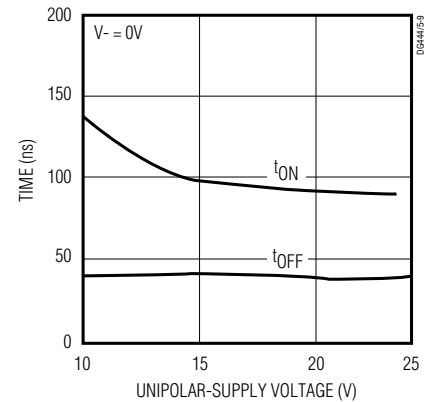
ON-RESISTANCE vs. V_D , UNIPOLAR-SUPPLY VOLTAGE AND TEMPERATURE



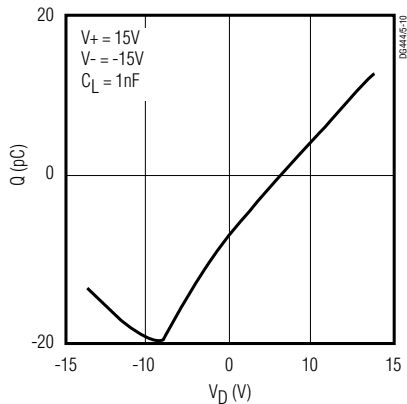
SWITCHING TIME vs. BIPOLAR-SUPPLY VOLTAGE



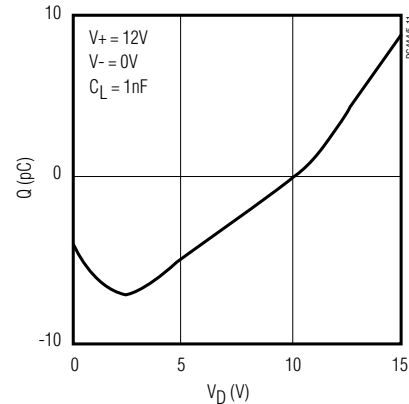
SWITCHING TIME vs. UNIPOLAR-SUPPLY VOLTAGE



CHARGE INJECTION vs. V_D VOLTAGE



CHARGE INJECTION vs. V_D VOLTAGE



Improved, Quad, SPST Analog Switches

Pin Description

| PIN | | NAME | FUNCTION |
|--------------|--------------|---------|--|
| DIP/SO | THIN QFN | | |
| 1, 16, 9, 8 | 15, 14, 7, 6 | IN1–IN4 | Logic Control Inputs |
| 2, 15, 10, 7 | 16, 13, 8, 5 | D1–D4 | Drain Outputs |
| 3, 14, 11, 6 | 1, 12, 9, 4 | S1–S4 | Source Outputs |
| 4 | 2 | V- | Negative-Supply Voltage Input |
| 5 | 3 | GND | Ground |
| 12 | 10 | VL | Logic-Supply Voltage Input |
| 13 | 11 | V+ | Positive-Supply-Voltage Input—Connected to Substrate |
| — | EP | PAD | Exposed Pad Connect Pad to V+ |

Applications Information

General Operation

- Switches are open when power is off.
- IN, D, and S should not exceed V+ or V-, even with the power off.
- Switch leakage is from each analog switch terminal to V+ or V-, not to other switch terminals.

Operation with Supply Voltages Other than ±15V

Using supply voltages other than ±15V will reduce the analog signal range. The DG444/DG445 switches oper-

ate with ±4.5V to ±20V bipolar supplies or with a +10V to +30V single supply; connect V- to 0V when operating with a single supply. Also, all device types can operate with unbalanced supplies such as +24V and -5V. VL must be connected to +5V to be TTL compatible, or to V+ for CMOS-logic level inputs. The *Typical Operating Characteristics* graphs show typical on-resistance with ±20V, ±15V, ±10V, and ±5V supplies. (Switching times increase by a factor of two or more for operation at ±5V.)

Overvoltage Protection

Proper power-supply sequencing is recommended for all CMOS devices. Do not exceed the absolute maximum ratings because stresses beyond the listed ratings may cause permanent damage to the devices. Always sequence V+ on first, followed by VL, V-, and logic inputs. If power-supply sequencing is not possible, add two small, external signal diodes in series with supply pins for overvoltage protection (Figure 1). Adding diodes reduces the analog signal range to 1V below V+ and 1V above V-, but low switch resistance and low leakage characteristics are unaffected. Device operation is unchanged, and the difference between V+ and V- should not exceed +44V.

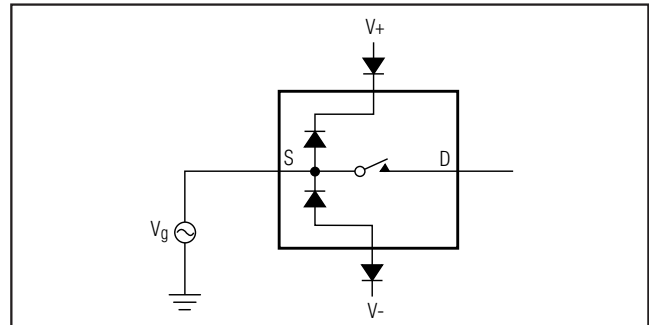


Figure 1. Overvoltage Protection Using External Blocking Diodes

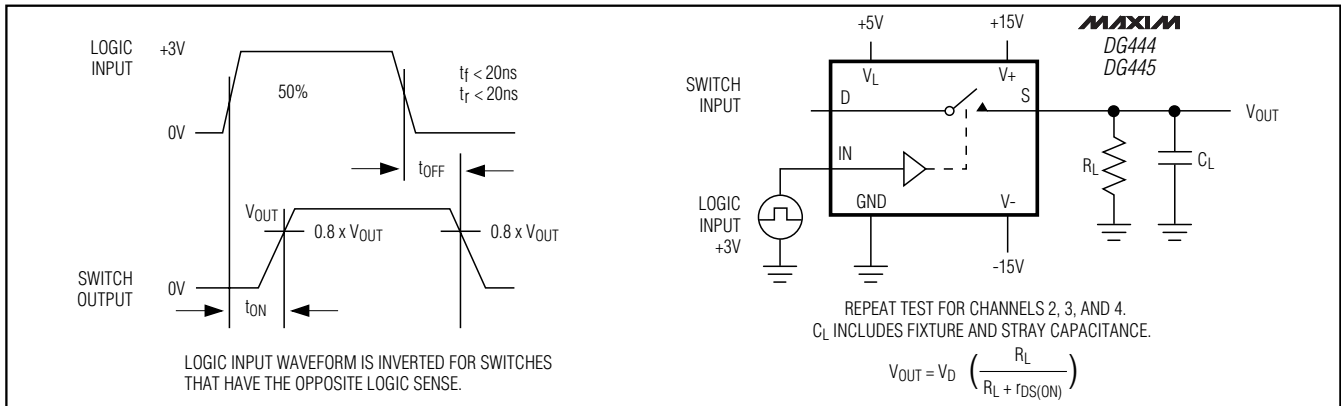


Figure 2. Switching Time

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DG444/DG445

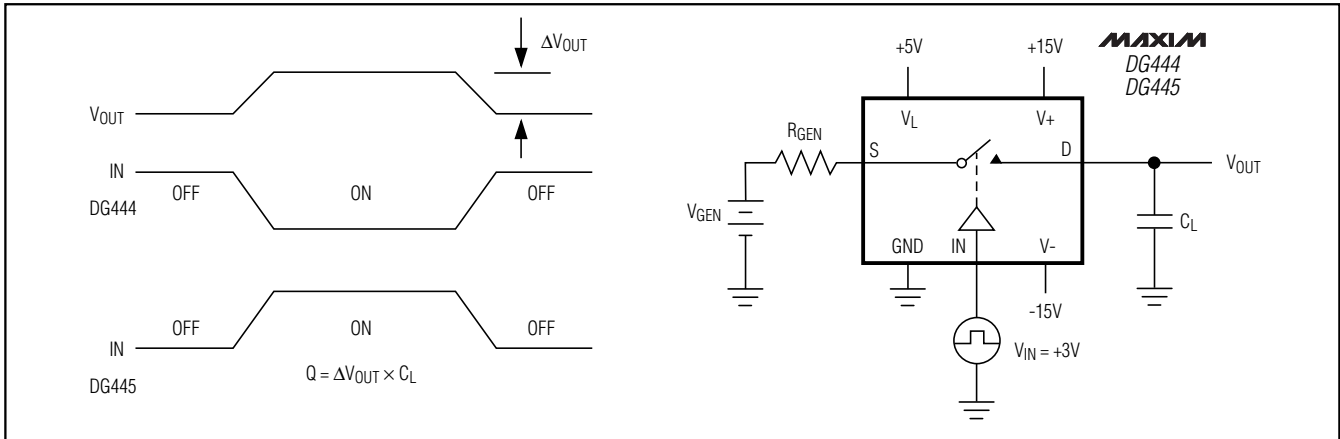


Figure 3. Charge Injection

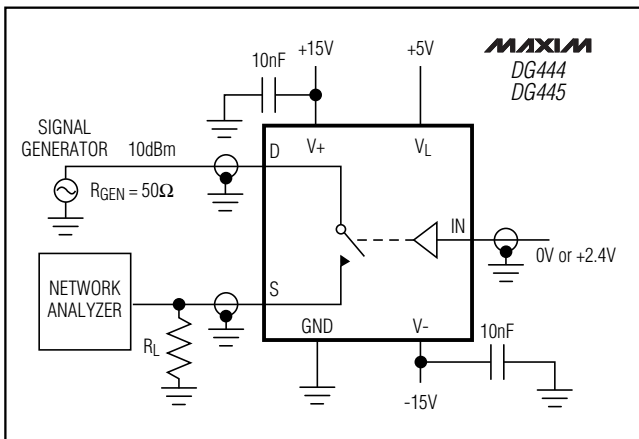


Figure 4. Off-Isolation Rejection Ratio

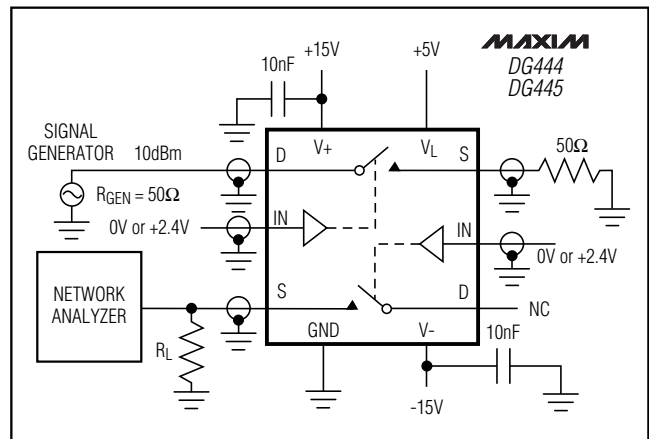


Figure 5. Crosstalk

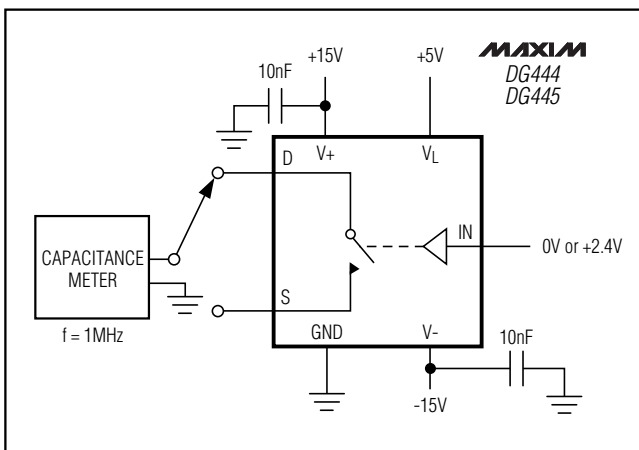


Figure 6. Source/Drain Off-Capacitance

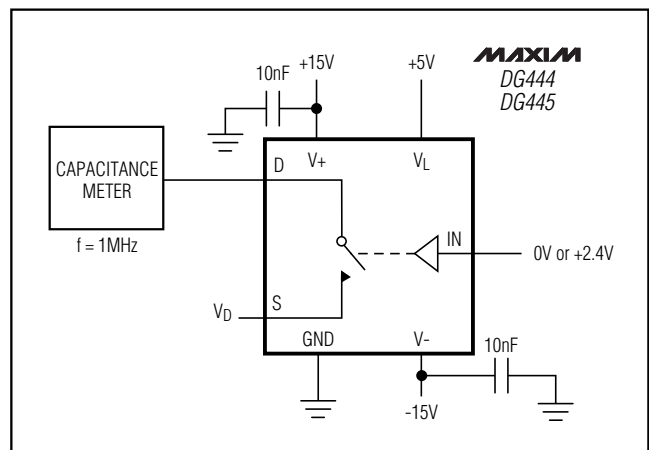
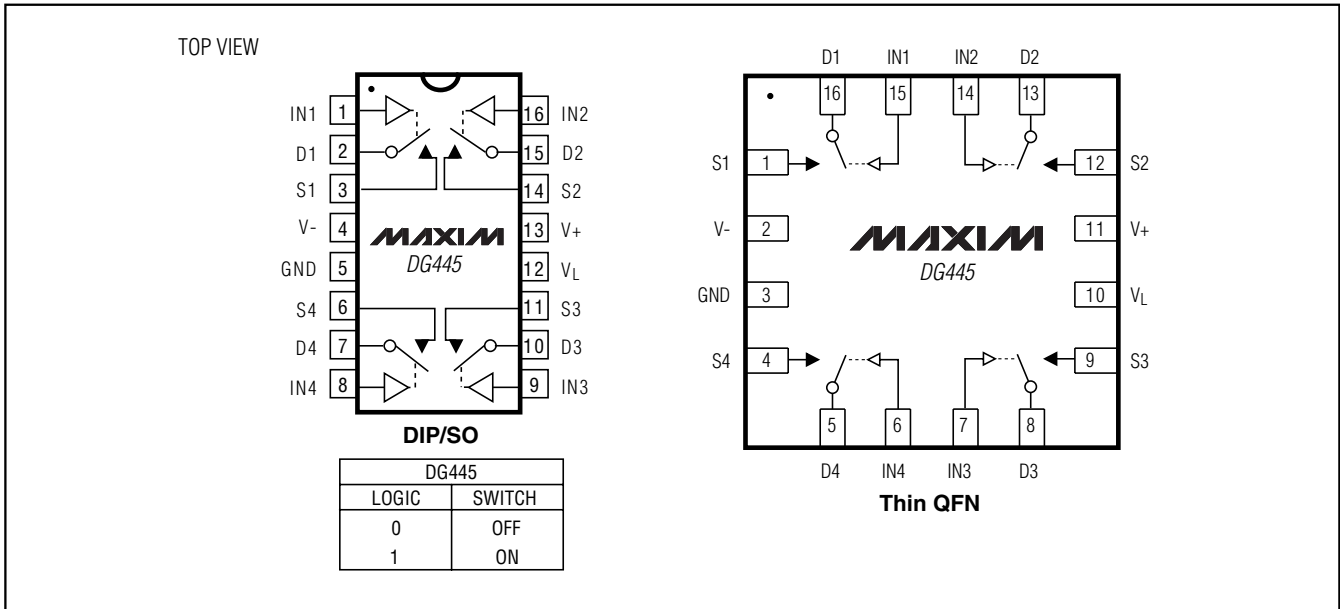


Figure 7. Source/Drain On-Capacitance

Improved, Quad, SPST Analog Switches

Pin Configurations/Functional Diagrams (continued)



Ordering Information (continued)

| PART | TEMP RANGE | PIN-PACKAGE |
|----------------|----------------|-------------------------|
| DG444ETE | -40°C to +85°C | 16 Thin QFN (5mm x 5mm) |
| DG445CJ | 0°C to +70°C | 16 Plastic DIP |
| DG445CY | 0°C to +70°C | 16 Narrow SO |
| DG445C/D | 0°C to +70°C | Dice* |
| DG445DJ | -40°C to +85°C | 16 Plastic DIP |
| DG445DY | -40°C to +85°C | 16 Narrow SO |
| DG445ETE | -40°C to +85°C | 16 Thin QFN (5mm x 5mm) |

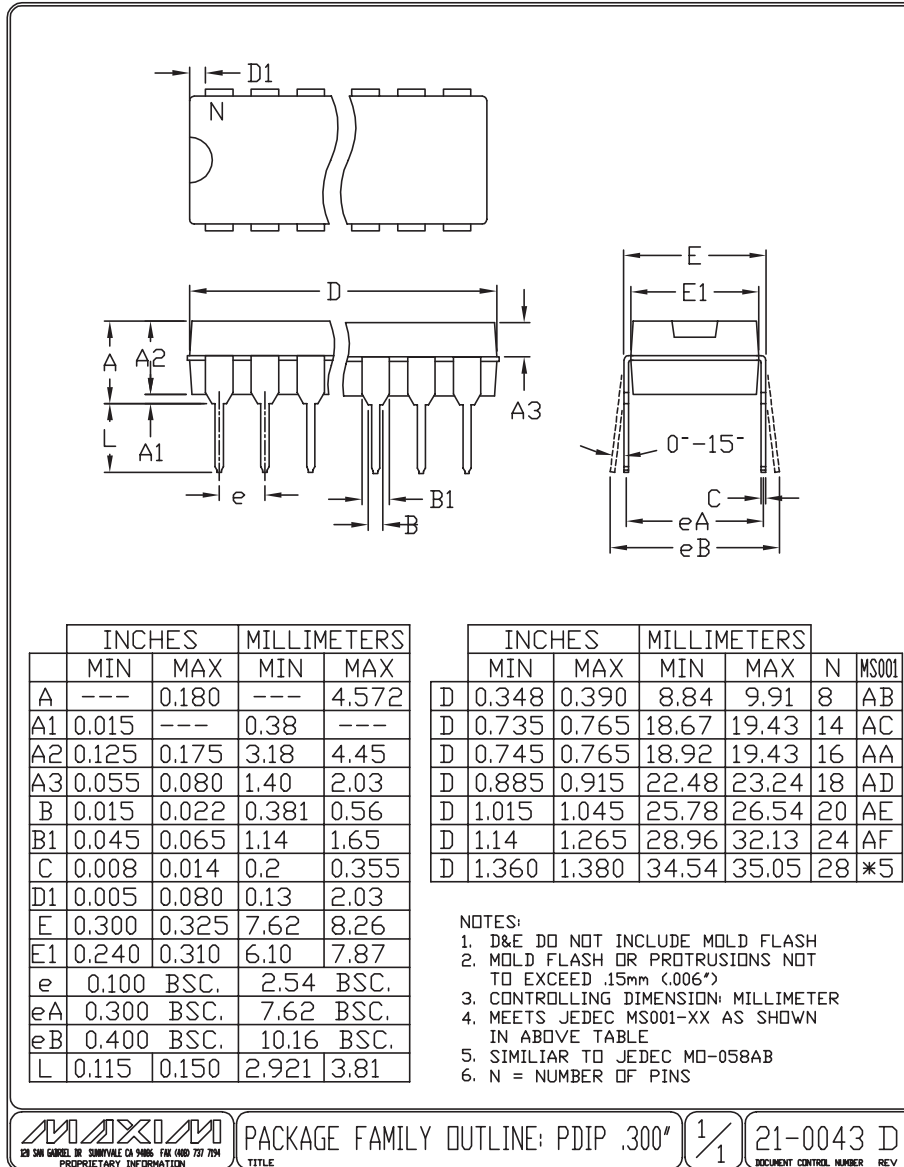
*Contact factory for dice specifications.

Improved, Quad, SPST Analog 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.)

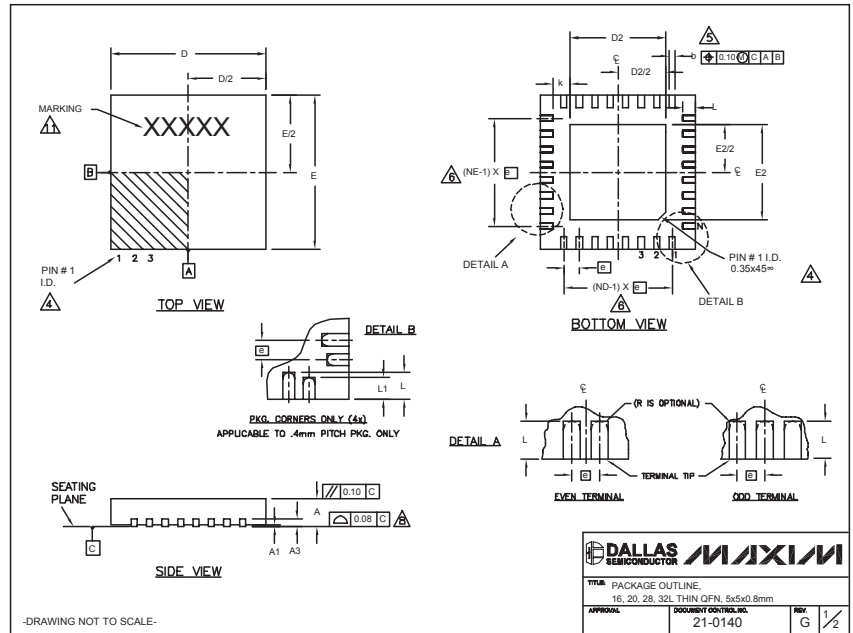
DG444/DG445



Improved, Quad, SPST Analog 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.)



| COMMON DIMENSIONS | | | | | | | | | | | | |
|-------------------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|
| PKG. SYMBOL | 16L 5x5 | | | 20L 5x5 | | | 28L 5x5 | | | 32L 5x5 | | |
| | MIN. | NOM. | MAX. | 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 | 0.70 | 0.75 | 0.80 |
| A1 | 0 | 0.02 | 0.05 | 0 | 0.02 | 0.05 | 0 | 0.02 | 0.05 | 0 | 0.02 | 0.05 |
| A3 | 0.20 REF. | | | 0.20 REF. | | | 0.20 REF. | | | 0.20 REF. | | |
| b | 0.25 | 0.30 | 0.35 | 0.25 | 0.30 | 0.35 | 0.20 | 0.25 | 0.30 | 0.20 | 0.25 | 0.30 |
| D | 4.90 | 5.00 | 5.10 | 4.90 | 5.00 | 5.10 | 4.90 | 5.00 | 5.10 | 4.90 | 5.00 | 5.10 |
| E | 4.90 | 5.00 | 5.10 | 4.90 | 5.00 | 5.10 | 4.90 | 5.00 | 5.10 | 4.90 | 5.00 | 5.10 |
| e | 0.80 BSC. | | | 0.65 BSC. | | | 0.50 BSC. | | | 0.50 BSC. | | |
| k | 0.25 | - | - | 0.25 | - | - | 0.25 | - | - | 0.25 | - | - |
| L | 0.30 | 0.40 | 0.50 | 0.45 | 0.55 | 0.65 | 0.45 | 0.55 | 0.65 | 0.30 | 0.40 | 0.50 |
| L1 | - | - | - | - | - | - | - | - | - | - | - | - |
| N | 16 | | | 20 | | | 28 | | | 32 | | |
| ND | 4 | | | 5 | | | 7 | | | 8 | | |
| NE | 4 | | | 5 | | | 7 | | | 8 | | |
| JEDEC | WHHB | | | WHHC | | | WHHD-1 | | | WHHD-2 | | |

| EXPOSED PAD VARIATIONS | | | | | | | | | | | |
|------------------------|------|------|------|------|------|------|-------|--------------------|--|--|--|
| PKG. CODES | D2 | | | E2 | | | L | DOWN BONDS ALLOWED | | | |
| | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. | ±0.15 | | | | |
| T1655-1 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |
| T1655-2 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | YES | | | |
| T1655N-1 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |
| T2055-2 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |
| T2055-3 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | YES | | | |
| T2055-4 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |
| T2055-5 | 3.15 | 3.25 | 3.35 | 3.15 | 3.25 | 3.35 | 0.40 | Y | | | |
| T2855-1 | 3.15 | 3.25 | 3.35 | 3.15 | 3.25 | 3.35 | ** | NO | | | |
| T2855-2 | 2.60 | 2.70 | 2.80 | 2.60 | 2.70 | 2.80 | ** | NO | | | |
| T2855-3 | 3.15 | 3.25 | 3.35 | 3.15 | 3.25 | 3.35 | ** | YES | | | |
| T2855-4 | 2.60 | 2.70 | 2.80 | 2.60 | 2.70 | 2.80 | ** | YES | | | |
| T2855-5 | 2.60 | 2.70 | 2.80 | 2.60 | 2.70 | 2.80 | ** | NO | | | |
| T2855-6 | 3.15 | 3.25 | 3.35 | 3.15 | 3.25 | 3.35 | ** | NO | | | |
| T2855-7 | 2.60 | 2.70 | 2.80 | 2.60 | 2.70 | 2.80 | ** | YES | | | |
| T2855-8 | 3.15 | 3.25 | 3.35 | 3.15 | 3.25 | 3.35 | 0.40 | Y | | | |
| T2855N-1 | 3.15 | 3.25 | 3.35 | 3.15 | 3.25 | 3.35 | ** | N | | | |
| T3255-2 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |
| T3255-3 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | YES | | | |
| T3255-4 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |
| T3255N-1 | 3.00 | 3.10 | 3.20 | 3.00 | 3.10 | 3.20 | ** | NO | | | |

**SEE COMMON DIMENSIONS TABLE

DALLAS SEMICONDUCTOR MAXIM

TITLE PACKAGE OUTLINE
16, 20, 28, 32L THIN OFN, 5x5x0.8mm

APPROVAL DOCUMENT CONTROL NO. 21-0140 REV. G 2/2

-DRAWING NOT TO SCALE-

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