



35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

DG417L/DG418L/DG419L

General Description

The DG417L/DG418L/DG419L precision, CMOS analog switches feature low on-resistance ($R_{ON} = 35\Omega$), guaranteed R_{ON} matching between switches (3Ω max), and guaranteed R_{ON} flatness over the signal range (4Ω max). These switches are +3V logic-compatible when powered from $\pm 15V$ or $\pm 12V$ supplies. The switches conduct equally well in either direction, and feature low charge injection and low power consumption. The DG417L/DG418L/DG419L also offer low off-leakage current over temperature (less than $5nA$ at $+85^\circ C$).

The DG417L/DG418L are single-pole/single-throw (SPST) switches. The DG417L is normally closed, and the DG418L is normally open. The DG419L is single-pole/double-throw (SPDT) with one normally closed switch and one normally open switch. Switching times are less than $175ns$ for t_{ON} and less than $185ns$ for t_{OFF} . These devices operate with a single $+9V$ to $+36V$ or bipolar $\pm 4.5V$ to $\pm 20V$ supplies.

The digital input has a $+0.8V$ logic-low threshold and a $+2.0V$ logic-high threshold, ensuring +3V TTL and CMOS-logic compatibility. The DG417L/DG418L/DG419L are available in a tiny 8-pin μMAX , 8-pin SO, or convenient 8-pin plastic DIP. All products are rated at the extended temperature range of $-40^\circ C$ to $+85^\circ C$.

Applications

- | | |
|------------------------------|--------------------------|
| Sample-and-Hold Circuits | Communications Systems |
| Test Equipment | Battery-Operated Systems |
| Modems | Fax Machines |
| Guidance and Control Systems | PBX, PABX |
| Audio Signal Routing | Military Radios |

Features

- ◆ +3V Logic-Compatible Digital Inputs
 $V_{IH} = 2.0V$
 $V_{IL} = 0.8V$
- ◆ Plug-In Upgrades for Industry-Standard
DG417/DG418/DG419 and
MAX317/MAX318/MAX319
- ◆ Power-Supply Sequencing-Free Operation
- ◆ Low On-Resistance (35Ω max)
- ◆ Guaranteed Matched On-Resistance Between Channels (3Ω max)
- ◆ Guaranteed On-Resistance Flatness (4Ω max)
- ◆ Single-Supply Operation $+9V$ to $+36V$
Dual-Supply Operation $\pm 4.5V$ to $\pm 20V$
- ◆ Guaranteed Off-Leakage Current Over Temperature ($<5nA$ at $+85^\circ C$)
- ◆ Rail-to-Rail Analog Signal Handling Capability
- ◆ Tiny 8-Pin μMAX Package

Ordering Information

| PART | TEMP. RANGE | PIN-PACKAGE |
|-----------|--------------------------------|---------------|
| DG417LEUA | $-40^\circ C$ to $+85^\circ C$ | 8 μMAX |
| DG417LDY | $-40^\circ C$ to $+85^\circ C$ | 8 SO |
| DG417LDJ | $-40^\circ C$ to $+85^\circ C$ | 8 Plastic DIP |

Ordering Information continued at end of data sheet.
Rail-to-Rail is a registered trademark of Nippon Motorola, Inc.

Pin Configurations/Functional Diagrams/Truth Tables

TOP VIEW

DIP/SO/ μMAX
DG417L

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

DIP/SO/ μMAX
DG418L

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

DIP/SO/ μMAX
DG419L

| LOGIC | NC | NO |
|-------|-----|-----|
| 0 | ON | OFF |
| 1 | OFF | ON |

N.C. = NO CONNECT
NC = NORMALLY CLOSED

SWITCHES SHOWN FOR LOGIC "0" INPUT



35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

ABSOLUTE MAXIMUM RATINGS

Voltage referenced to V-

| | |
|--|----------------------------|
| V+ | 44V |
| GND | 25V |
| IN | -0.3V to +44V |
| COM, NC, NO (Note 1) | (V- - 0.3V) to (V+ + 0.3V) |
| Continuous Current (any terminal) (Note 1) | ±30mA |
| Peak Current, COM, NO, NC (pulsed at 1ms, 10% duty cycle max) | ±100mA |

Continuous Power Dissipation (T_A = +70°C)

| | |
|---|-----------------|
| 8-Pin μMAX (derate 4.5mW/°C above +70°C) | 362mW |
| 8-Pin SO (derate 5.9mW/°C above +70°C) | 471mW |
| 8-Pin Plastic DIP (derate 9.1mW/°C above +70°C) | 727mW |
| Operating Temperature Range | -40°C to +85°C |
| Storage Temperature Range | -65°C to +150°C |
| Lead Temperature (soldering, 10s) | +300°C |

Note 1: Signals on COM, NO, or NC exceeding V+ or V- are clamped by internal diodes. Limit forward current to maximum current ratings.

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 ±15V Supplies

(V+ = +15V, V- = -15V, V_{IH} = 2.0V, V_{IL} = 0.8V, T_A = T_{MIN} to T_{MAX}, unless otherwise noted. Typical values are at T_A = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | T _A | MIN | TYP | MAX | UNITS | |
|---|---|---|--------------------------------------|--------------------------------------|-------|------|-------|----|
| ANALOG SWITCH | | | | | | | | |
| Analog Signal Range | V _{NO} , V _{NC} V _{COM} | | | V- | | V+ | V | |
| On-Resistance | R _{ON} | V+ = +13.5V, V- = -13.5V I _{COM} = 10mA V _{NO} or V _{NC} = ±10V | +25°C | | 17 | 35 | Ω | |
| | | | T _{MIN} to T _{MAX} | | | 45 | | |
| On-Resistance Matching Between Channels (DG419L only) | ΔR _{ON} | V+ = +15V, V- = -15V I _{COM} = 10mA V _{NO} or V _{NC} = ±10V | +25°C | | 0.1 | 3 | Ω | |
| | | | T _{MIN} to T _{MAX} | | | 4 | | |
| On-Resistance Flatness (Note 4) | R _{FLAT} (ON) | V+ = +15V, V- = -15V I _{COM} = 10mA V _{NO} or V _{NC} = -5V, 0, +5V | +25°C | | 0.5 | 4 | Ω | |
| | | | T _{MIN} to T _{MAX} | | | 6 | | |
| NC or NO Off-Leakage Current (Note 5) | I _{NC/NO(OFF)} | V+ = +16.5V, V- = -16.5V V _{COM} = ±15.5V V _(NC or NO) = ∓15.5V | +25°C | -0.25 | 0.01 | 0.25 | nA | |
| | | | T _{MIN} to T _{MAX} | | | 5 | | |
| COM Off-Leakage Current (Note 5) | I _{COM(OFF)} | V+ = +16.5V V- = -16.5V V _{COM} = ±15.5V V _(NC or NO) = ∓15.5V | DG417L DG418L | +25°C | -0.25 | 0.01 | 0.25 | nA |
| | | | | T _{MIN} to T _{MAX} | | | 5 | |
| COM On-Leakage Current (Note 5) | I _{COM(ON)} | V+ = +16.5V V- = -16.5V V _{COM} = ±15.5V V _(NC or NO) = ±15.5V | DG417L DG418L | +25°C | -0.4 | 0.01 | 0.4 | nA |
| | | | | T _{MIN} to T _{MAX} | | | 10 | |
| | | | DG419L | +25°C | -0.75 | | 0.75 | |
| | | | | T _{MIN} to T _{MAX} | | | 10 | |

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

DG417L/DG418L/DG419L

ELECTRICAL CHARACTERISTICS—Dual ±15V Supplies (continued)

(V+ = +15V, V- = -15V, V_{IH} = 2.0V, V_{IL} = 0.8V, T_A = T_{MIN} to T_{MAX}, unless otherwise noted. Typical values are at T_A = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | T _A | MIN | TYP | MAX | UNITS |
|-------------------------------------|--|--|----------------|--------------------------------------|-------|-----|-------|
| DYNAMIC | | | | | | | |
| Turn-On Time | t _{ON} | V _{NO} or V _{NC} = ±10V R _L = 300Ω C _L = 35pF Figure 1 | DG417L | +25°C | 110 | 175 | ns |
| | | | DG418L | T _{MIN} to T _{MAX} | | 250 | |
| Turn-Off Time | t _{OFF} | V _{NO} or V _{NC} = ±10V R _L = 300Ω C _L = 35pF Figure 1 | DG417L | +25°C | 105 | 185 | ns |
| | | | DG418L | T _{MIN} to T _{MAX} | | 210 | |
| Transition Time | t _{TRANS} | V _{NO} = ±10V V _{NC} = ∓10V R _L = 300Ω C _L = 35pF Figure 2 | DG419L | +25°C | 105 | 185 | ns |
| | | | | T _{MIN} to T _{MAX} | | 250 | |
| Break-Before-Make Delay (Note 6) | t _D | V _{NO} or V _{NC} = +10V R _L = 300Ω C _L = 35pF Figure 3 | DG419L | +25°C | 5 | 25 | ns |
| | | | | T _{MIN} to T _{MAX} | | 1 | |
| Charge Injection | Q | V _{GEN} = 0, R _{GEN} = 0, C _L = 1nF, Figure 4 | | | 15 | | pC |
| Off-Isolation (Note 7) | V _{ISO} | f = 1MHz, R _L = 50Ω, C _L = 5pF, Figure 5 | | | -90 | | dB |
| Crosstalk (Note 8) | V _{CT} | f = 1MHz, R _L = 50Ω, C _L = 5pF, Figure 6 | DG419L | | | -86 | dB |
| Total Harmonic Distortion | THD | f = 20Hz to 20kHz, 5Vp-p R _L = 600Ω | | | 0.002 | | % |
| NO or NC Off-Capacitance | C _{NO(OFF)} C _{NC(OFF)} | f = 1MHz, Figure 7 | | | 8 | | pF |
| COM Off-Capacitance | C _{COM(OFF)} | f = 1MHz, Figure 7 | | | 8 | | pF |
| COM On-Capacitance | C _{COM(ON)} | f = 1MHz, Figure 8 | DG417L | | 30 | | pF |
| | | | DG418L | | | | |
| | | | DG419L | | 35 | | |

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

ELECTRICAL CHARACTERISTICS—Dual ±15V Supplies (continued)

(V+ = +15V, V- = -15V, V_{IH} = 2.0V, V_{IL} = 0.8V, T_A = T_{MIN} to T_{MAX}, unless otherwise noted. Typical values are at T_A = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | T _A | MIN | TYP | MAX | UNITS |
|---|------------------|--|--------------------------------------|------|-------|-----|-------|
| DIGITAL I/O | | | | | | | |
| Input Logic High Voltage | V _{IH} | | | 2.0 | | | V |
| Input Logic Low Voltage | V _{IL} | | | | | 0.8 | V |
| Logic Input Current (Input Voltage Low) | I _{INL} | V _{IN} = 0.8V | | | 0.001 | 1 | μA |
| Logic Input Current (Input Voltage High) | I _{INH} | V _{IN} = 2.0V | | | 0.001 | 1 | μA |
| POWER SUPPLY | | | | | | | |
| Power-Supply Range | V _S | Dual supplies | | ±4.5 | | ±20 | V |
| Positive Supply Current | I ₊ | V ₊ = +16.5V, V ₋ = -16.5V, V _{IN} = 5V | +25°C | | 26 | 75 | μA |
| | | | T _{MIN} to T _{MAX} | | | 125 | |
| Negative Supply Current | I ₋ | V ₊ = +16.5V, V ₋ = -16.5V, V _{IN} = 0, 5V, V ₊ | +25°C | | 0.01 | 1 | μA |
| | | | T _{MIN} to T _{MAX} | | | 10 | |
| Ground Current | I _{GND} | V ₊ = +16.5V, V ₋ = -16.5V, V _{IN} = 5V | +25°C | | 26 | 75 | μA |
| | | | T _{MIN} to T _{MAX} | | | 125 | |
| | | V ₊ = +16.5V, V ₋ = -16.5V, V _{IN} = 0 or V ₊ | +25°C | | 0.01 | 1 | |
| | | | T _{MIN} to T _{MAX} | | | 10 | |

ELECTRICAL CHARACTERISTICS—Single +12V Supply

(V₊ = +12V, V₋ = 0, V_{IH} = 2.0V, V_{IL} = 0.8V, T_A = T_{MIN} to T_{MAX}, unless otherwise noted. Typical values are at T_A = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | T _A | MIN | TYP | MAX | UNITS |
|---|---|---|--------------------------------------|----------------|------|----------------|-------|
| ANALOG SWITCH | | | | | | | |
| Analog Signal Range | V _{NO} , V _{NC} V _{COM} | | | V ₋ | | V ₊ | V |
| On-Resistance | R _{ON} | V ₊ = +10.8V, I _{COM} = 10mA, V _{NO} or V _{NC} = +3.8V | +25°C | | 31 | 100 | Ω |
| | | | T _{MIN} to T _{MAX} | | | 125 | |
| On-Resistance Matching Between Channels (DG419L Only) | ΔR _{ON} | V ₊ = +10.8V, I _{COM} = 10mA, V _{NO} or V _{NC} = +3.8V | +25°C | | 0.05 | 4 | Ω |
| | | | T _{MIN} to T _{MAX} | | | 6 | |
| On-Resistance Flatness (Note 4) | R _{FLAT} (ON) | V ₊ = +12V, I _{COM} = 10mA V _{NO} or V _{NC} = 2V, 6V, 10V | +25°C | | 4 | 9 | Ω |
| | | | T _{MIN} to T _{MAX} | | | 13 | |

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

DG417L/DG418L/DG419L

ELECTRICAL CHARACTERISTICS—Single +12V Supply (continued)

(V+ = +12V, V- = 0, VIH = 2.0V, VIL = 0.8V, TA = TMIN to TMAX, unless otherwise noted. Typical values are at TA = +25°C.) (Notes 2, 3)

| PARAMETER | SYMBOL | CONDITIONS | TA | MIN | TYP | MAX | UNITS |
|-------------------------------------|--------|--|------------------|--------------|------|-----|-------|
| DYNAMIC | | | | | | | |
| Turn-On Time | tON | VNO or VNC = +10V RL = 300Ω CL = 35pF Figure 1 | DG417L DG418L | +25°C | 150 | 300 | ns |
| | | | | TMIN to TMAX | | 400 | |
| Turn-Off Time | tOFF | VNO or VNC = +10V RL = 300Ω CL = 35pF Figure 1 | DG417L DG418L | +25°C | 110 | 210 | ns |
| | | | | TMIN to TMAX | | 310 | |
| Transition Time | tTRANS | VNO = 0, 10V VNC = 10V, 0 RL = 300Ω CL = 35pF Figure 2 | DG419L | +25°C | 150 | 300 | ns |
| | | | | TMIN to TMAX | | 400 | |
| Break-Before-Make Delay (Note 6) | tD | VNO, VNC = +10V RL = 300Ω CL = 35pF Figure 3 | DG419L | +25°C | 5 | 30 | ns |
| | | | | TMIN to TMAX | 1 | | |
| Charge Injection | Q | VGEN = 0, RGEN = 0, CL = 1nF, Figure 4 | | | 2.5 | | pC |
| POWER SUPPLY | | | | | | | |
| Power-Supply Range | Vs | Single supply | | 9 | | 36 | V |
| Positive Supply Current | I+ | V+ = +13.2V VIN = 0 or V+ | | +25°C | 0.01 | 1 | μA |
| | | | | TMIN to TMAX | | 10 | |
| | | V+ = +13.2V VIN = 5V | | +25°C | 15 | 60 | |
| | | | | TMIN to TMAX | | 110 | |

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

Note 3: -40°C specifications are guaranteed by design.

Note 4: 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 range.

Note 5: Leakage parameters are 100% tested at maximum rated hot temperature and guaranteed by correlation at TA = +25°C.

Note 6: Guaranteed by design.

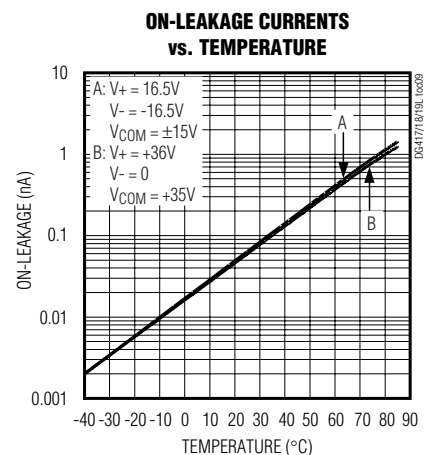
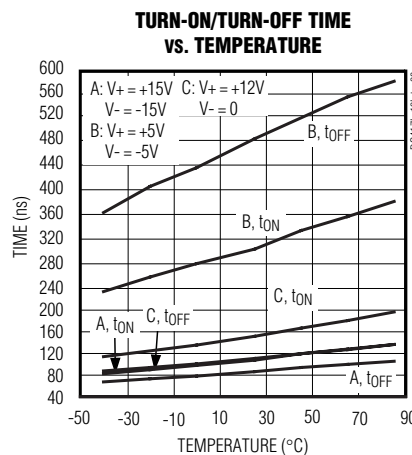
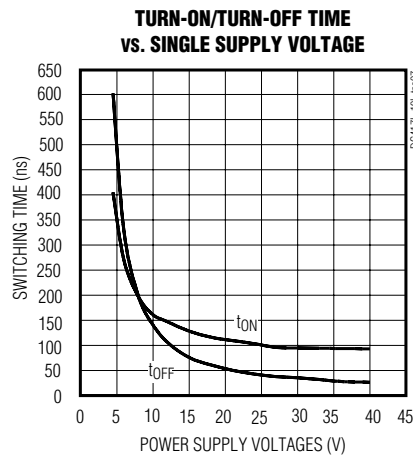
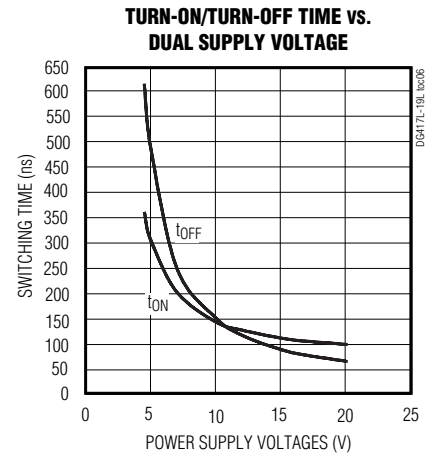
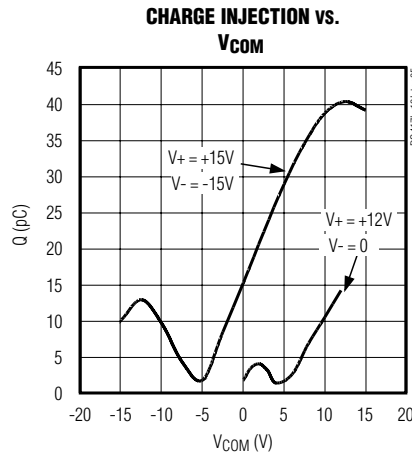
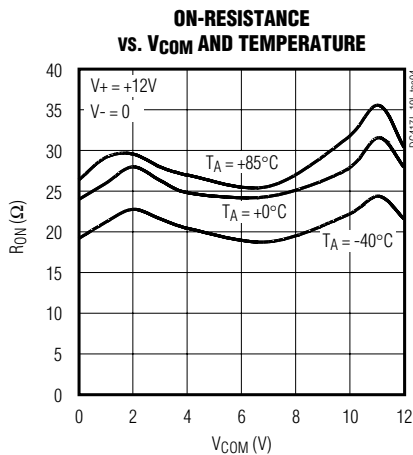
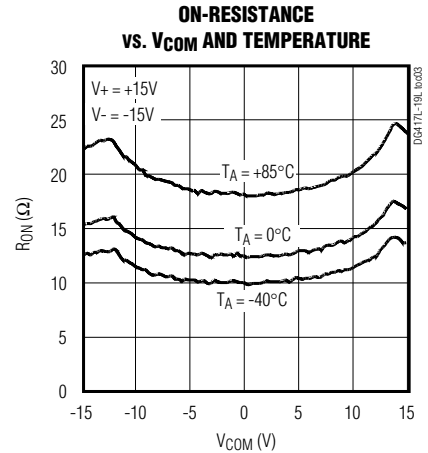
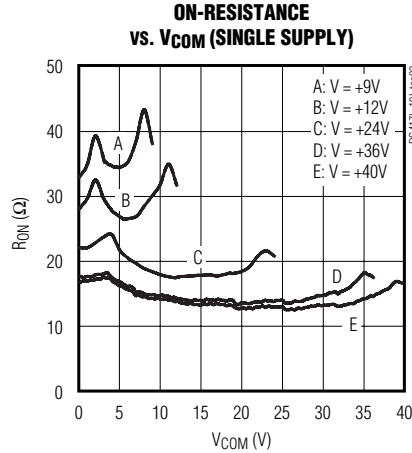
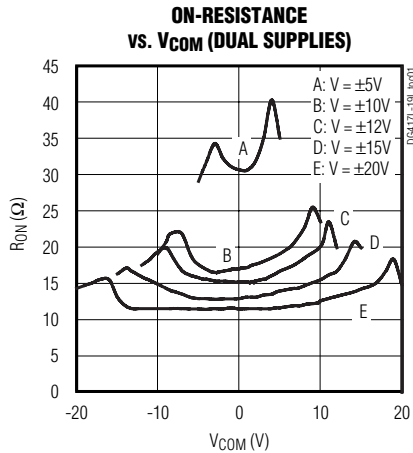
Note 7: Off-isolation = 20log10 [VCOM / (VNC or VNO)], VCOM = output, VNC or VNO = input to off switch.

Note 8: Between Switches

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

Typical Operating Characteristics

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

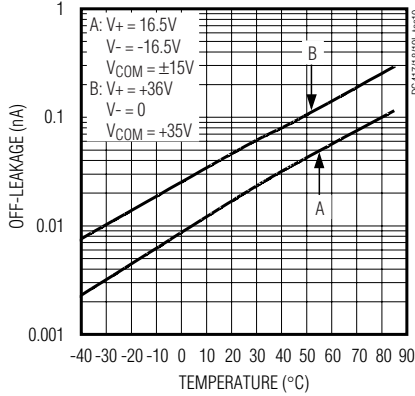


35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

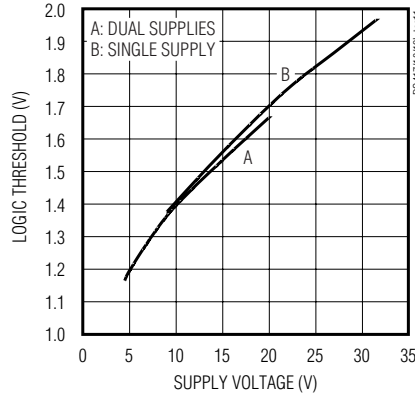
Typical Operating Characteristics (continued)

(T_A = +25°C, unless otherwise noted.)

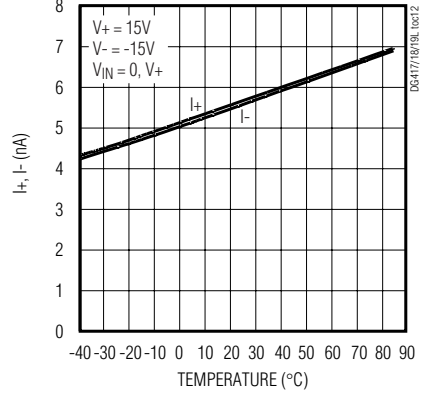
**OFF-LEAKAGE CURRENTS
vs. TEMPERATURE**



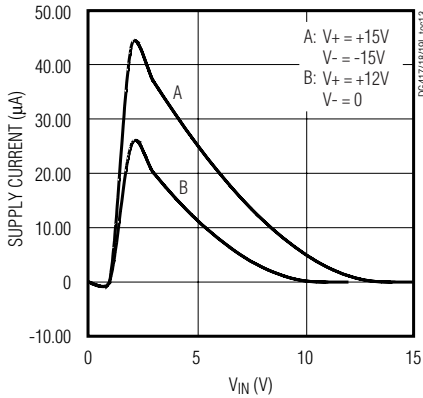
**LOGIC THRESHOLD
vs. SUPPLY VOLTAGE**



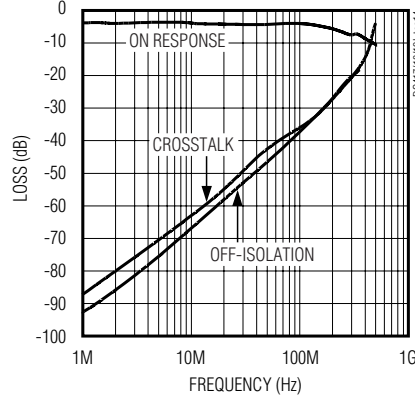
**SUPPLY CURRENT
vs. TEMPERATURE**



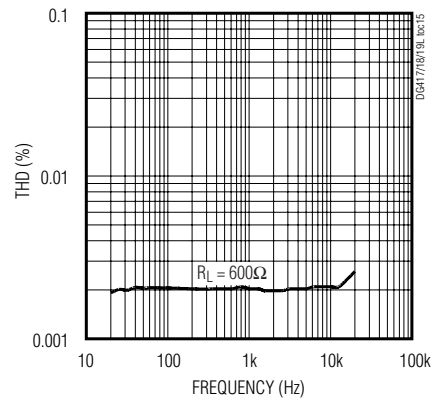
SUPPLY CURRENT vs. V_{IN}



FREQUENCY REPOSE



**TOTAL HARMONIC DISTORTION
vs. FREQUENCY**



DG417L/DG418L/DG419L

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

Pin Description

| PIN | | | NAME | FUNCTION |
|--------|--------|--------|------|--|
| DG417L | DG418L | DG419L | | |
| 1 | 1 | 1 | COM | Analog Switch Common Terminal |
| 2, 5 | 2, 5 | 5 | N.C. | No Connection. Not internally connected. |
| 3 | 3 | 3 | GND | Logic Ground |
| 4 | 4 | 4 | V+ | Analog Signal Positive Supply Input |
| 6 | 6 | 6 | IN | Logic-Level Input |
| 7 | 7 | 7 | V- | Analog Signal Negative Supply Input |
| 8 | — | 2 | NC | Analog Switch Normally Closed Terminal |
| — | 8 | 8 | NO | Analog Switch Normally Open Terminal |

Test Circuits/Timing Diagrams

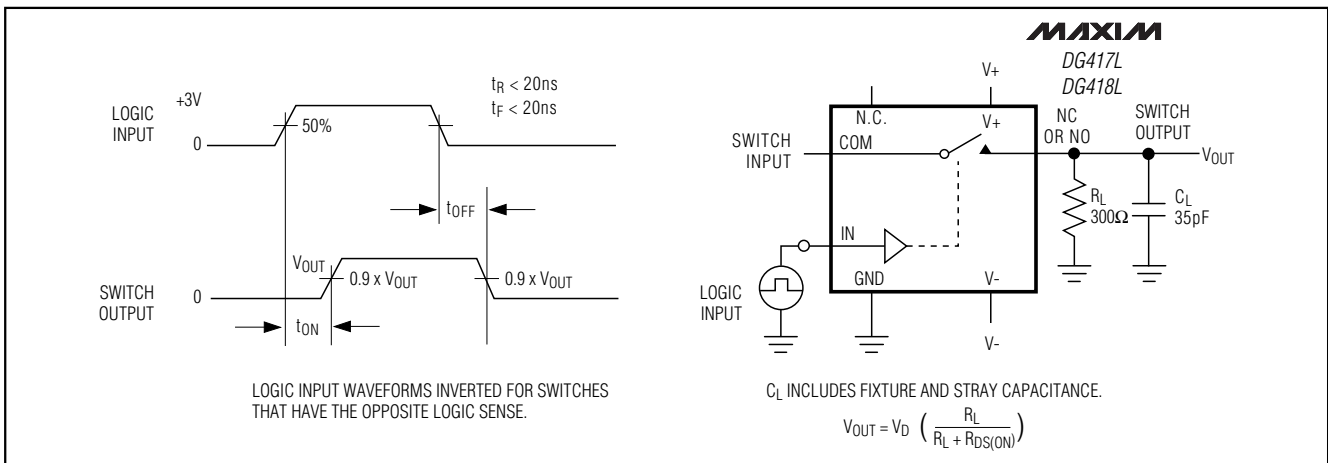


Figure 1. DG417L/DG418L Switching Time

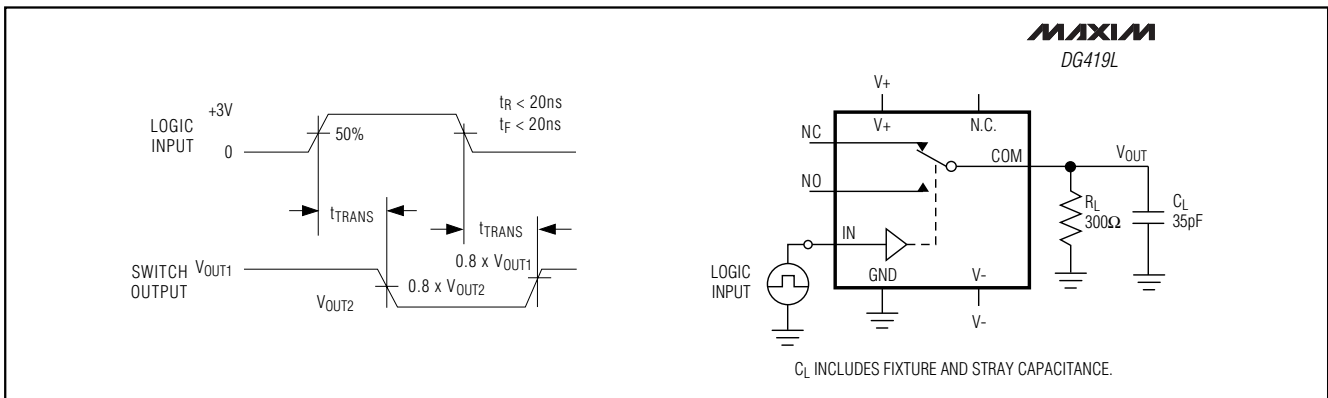


Figure 2. DG419L Transition Time

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

DG417L/DG418L/DG419L

Applications Information

Power-Supply Sequencing-Free Operation

Most CMOS switches require specific power-supply sequencing in order to prevent device latchup. The older DG417/DG418/DG419 devices require a proper power-supply sequence of V+, V_L, then V-. Otherwise,

it is necessary to add signal diodes to the circuit in order to prevent potential latchups. The new DG417L/DG418L/DG419L devices eliminate the need for a V_L input and allow any power-up sequence. Do not exceed the absolute maximum ratings because stresses beyond the listed ratings may cause permanent damage to the devices.

Test Circuits/Timing Diagrams (continued)

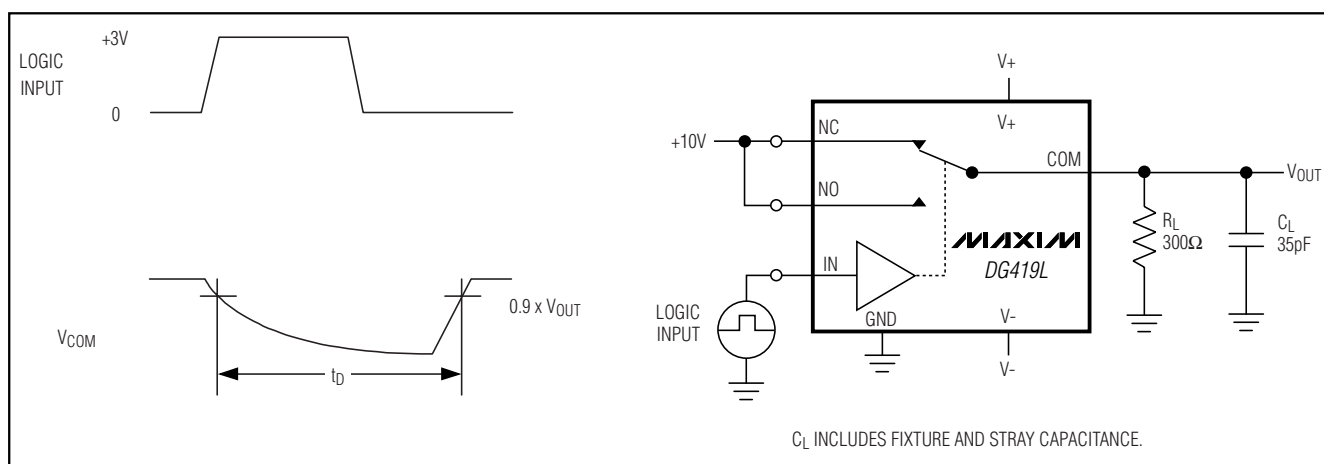


Figure 3. DG419L Break-Before-Make Interval

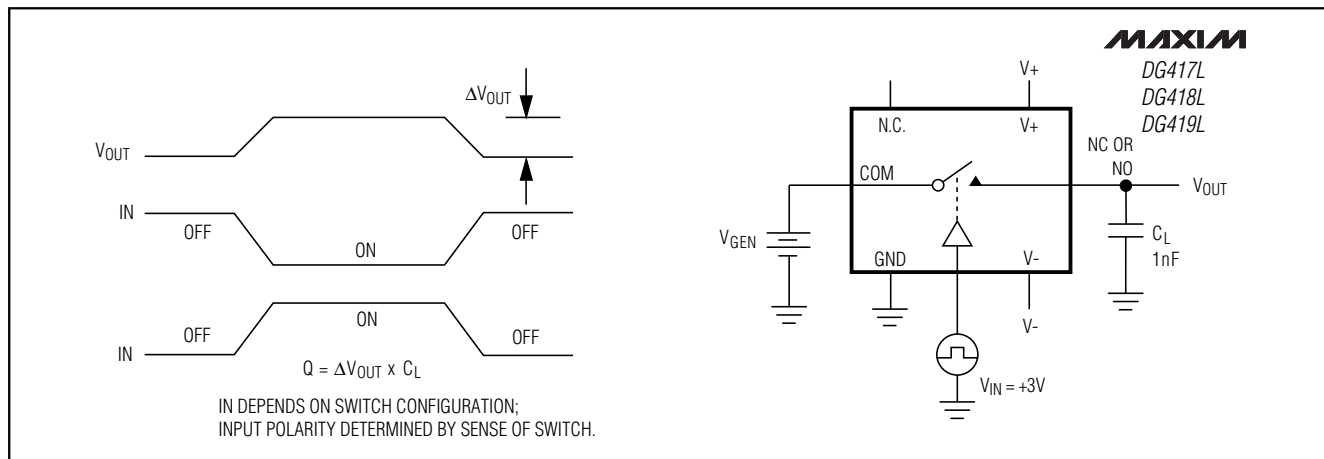


Figure 4. Charge Injection

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

Test Circuits/Timing Diagrams (continued)

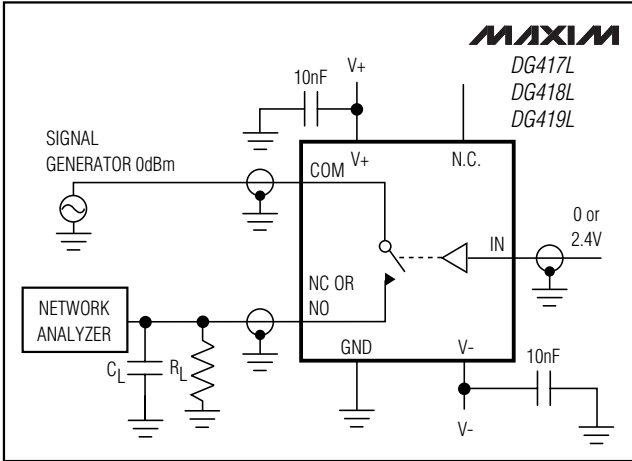


Figure 5. Off-Isolation

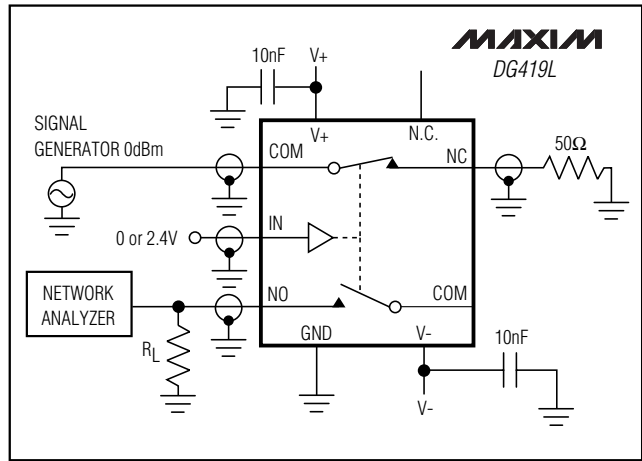


Figure 6. DG419L Crosstalk

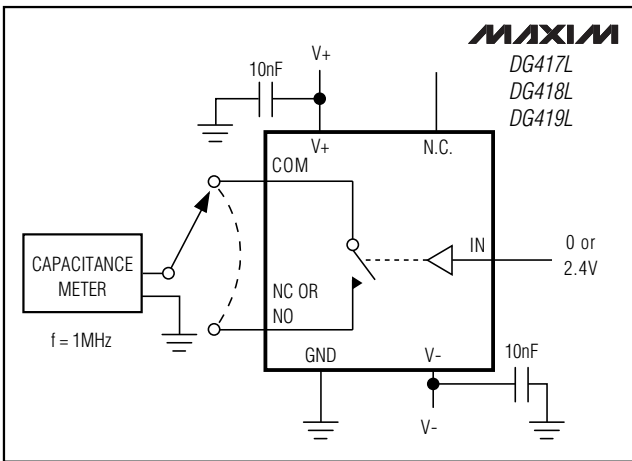


Figure 7. Channel Off-Capacitance

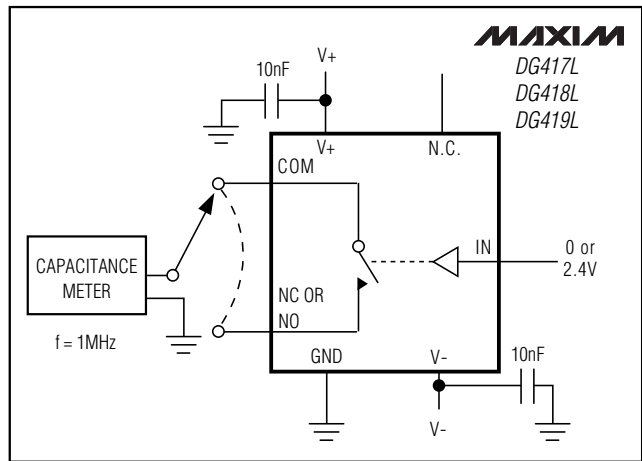


Figure 8. Channel On-Capacitance

Ordering Information (continued)

| PART | TEMP. RANGE | PIN-PACKAGE |
|-----------|----------------|---------------|
| DG418LEUA | -40°C to +85°C | 8 μMAX |
| DG418LDY | -40°C to +85°C | 8 SO |
| DG418LDJ | -40°C to +85°C | 8 Plastic DIP |
| DG419LEUA | -40°C to +85°C | 8 μMAX |
| DG419LDY | -40°C to +85°C | 8 SO |
| DG419LDJ | -40°C to +85°C | 8 Plastic DIP |

Chip Information

TRANSISTOR COUNT: 40
PROCESS: CMOS

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

Package Information

DG417L/DG418L/DG419L

| | INCHES | | MILLIMETERS | | JEDEC | | | |
|-------|--------|-------|-------------|------|--------|-------|------|------|
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| A | 0.037 | 0.043 | 0.94 | 1.10 | --- | 0.043 | --- | 1.10 |
| A1 | 0.002 | 0.006 | 0.05 | 0.15 | 0.002 | 0.006 | 0.05 | 0.15 |
| B | 0.010 | 0.014 | 0.25 | 0.36 | 0.010 | 0.016 | 0.25 | 0.40 |
| C | 0.005 | 0.007 | 0.13 | 0.18 | 0.005 | 0.009 | 0.13 | 0.23 |
| D | 0.116 | 0.120 | 2.95 | 3.05 | 0.114 | 0.122 | 2.9 | 3.1 |
| e | 0.0256 | BSC | 0.65 | BSC | 0.0256 | BSC | 0.64 | BSC |
| E | 0.116 | 0.120 | 2.95 | 3.05 | 0.114 | 0.122 | 2.9 | 3.1 |
| H | 0.188 | 0.198 | 4.78 | 5.03 | 0.193 | BSC | 4.9 | BSC |
| L | 0.016 | 0.026 | 0.41 | 0.66 | 0.016 | 0.027 | 0.40 | 0.70 |
| alpha | 0° | 6° | 0° | 6° | 0° | 6° | 0° | 6° |
| S | 0.0207 | BSC | 0.5250 | BSC | | | | |

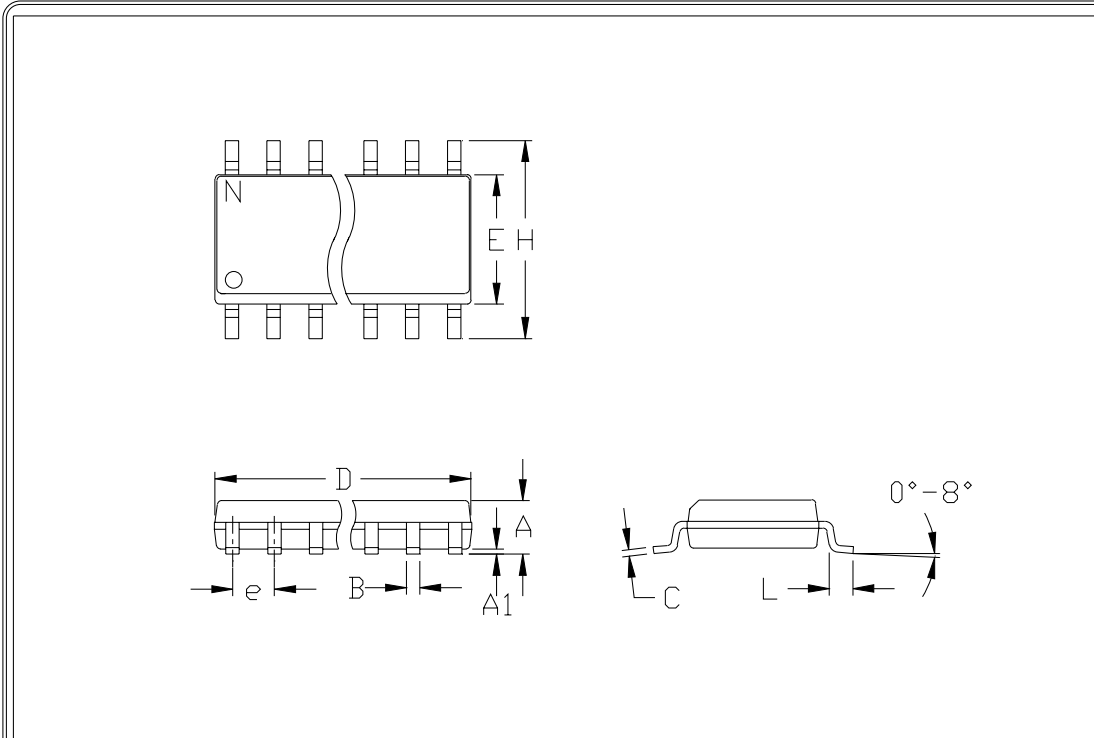
NOTES:
 1. D&E DO NOT INCLUDE MOLD FLASH.
 2. MOLD FLASH OR PROTRUSIONS NOT TO EXCEED 0.15MM (.006").
 3. CONTROLLING DIMENSION: MILLIMETERS.
 4. MEETS JEDEC MO-187.

MAXIM
 PROPRIETARY INFORMATION
 TITLE:
 PACKAGE OUTLINE, 8L uMAX
 APPROVAL: _____ DOCUMENT CONTROL NO. 21-0036 REV I 1/1

8LUMAXD.EPS

35Ω, SPST/SPDT, +3V Logic-Compatible Analog Switches

Package Information (continued)



| | INCHES | | MILLIMETERS | |
|----|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.053 | 0.069 | 1.35 | 1.75 |
| A1 | 0.004 | 0.010 | 0.10 | 0.25 |
| B | 0.014 | 0.019 | 0.35 | 0.49 |
| C | 0.007 | 0.010 | 0.19 | 0.25 |
| e | 0.050 | | 1.27 | |
| E | 0.150 | 0.157 | 3.80 | 4.00 |
| H | 0.228 | 0.244 | 5.80 | 6.20 |
| h | 0.010 | 0.020 | 0.25 | 0.50 |
| L | 0.016 | 0.050 | 0.40 | 1.27 |

| | INCHES | | MILLIMETERS | | N | MS012 |
|---|--------|-------|-------------|-------|----|-------|
| | MIN | MAX | MIN | MAX | | |
| D | 0.189 | 0.197 | 4.80 | 5.00 | 8 | A |
| D | 0.337 | 0.344 | 8.55 | 8.75 | 14 | B |
| D | 0.386 | 0.394 | 9.80 | 10.00 | 16 | C |

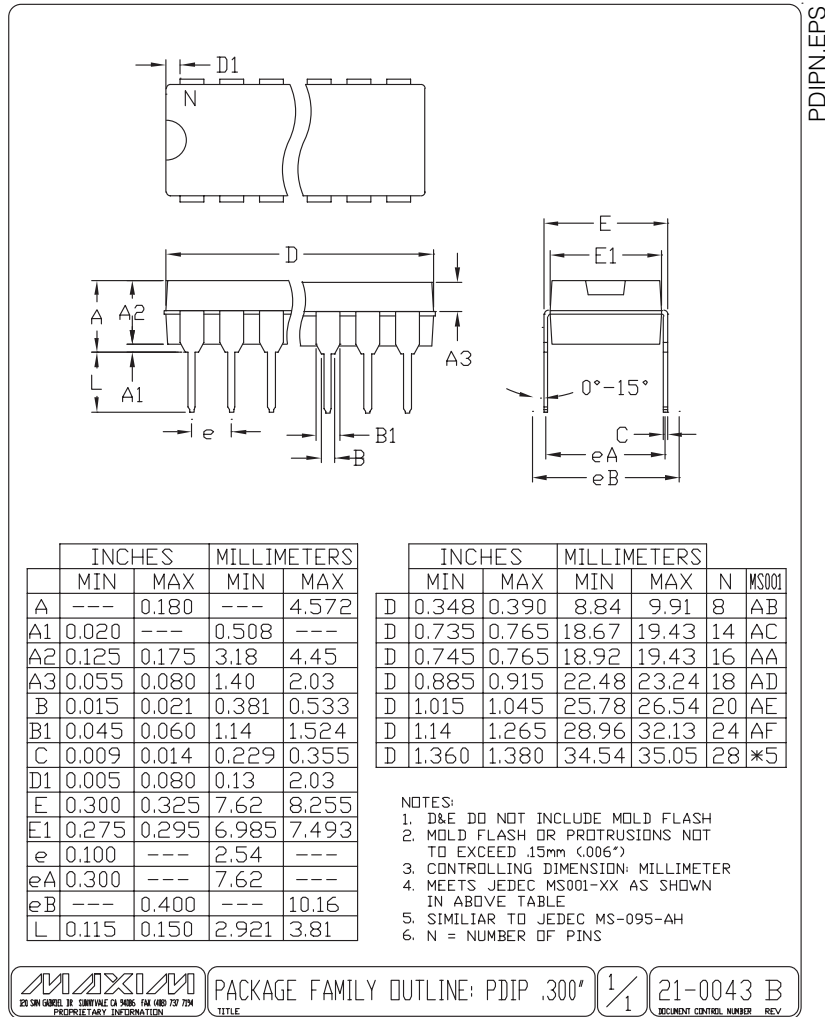
NOTES:

1. D&E DO NOT INCLUDE MOLD FLASH
2. MOLD FLASH OR PROTRUSIONS NOT TO EXCEED .15mm (.006")
3. LEADS TO BE COPLANAR WITHIN .102mm (.004")
4. CONTROLLING DIMENSION: MILLIMETER
5. MEETS JEDEC MS012-XX AS SHOWN IN ABOVE TABLE
6. N = NUMBER OF PINS

35Ω, SPST/SPDT, +3V Logic Compatible Analog Switches

Package Information (continued)

DG417L/DG418L/DG419L



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.

13 _____ **Maxim Integrated Products, 120 San Gabriel Drive, Sunnyvale, CA 94086 408-737-7600**