High-Speed Quad SPST CMOS Analog Switch

DESCRIPTION
The DG201HS is an improved monolithic device containing four independent analog switches. It is designed to provide high speed, low error switching of analog signals. Combining low on-resistance (25 Ω) with high speed ($t_{ON}$: 38 ns), the DG201HS is ideally suited for high speed data acquisition requirements.

To achieve high voltage ratings and superior switching performance, the DG201HS is built on a proprietary high-voltage silicon-gate process. An epitaxial layer prevents latchup.

Each switch conducts equally well in both directions when on, and blocks input voltages to the supply values, when off.

FEATURES
- Fast Switching-$t_{ON}$: 38 ns
- Low On-Resistance: 25 Ω
- Low Leakage: 100 pA
- Low Charge Injection
- TTL/CMOS Logic Compatible
- Single Supply Compatibility
- High Current Rating: - 30 mA

BENEFITS
- Faster Throughput
- Higher Accuracy
- Reduced Pedestal Error
- Upgrades Existing Designs
- Simple Interfacing
- Replaces HI201HS, ADG201HS
- Space Savings (TSSOP)

APPLICATIONS
- Data Acquisition
- Hi-Rel Systems
- Sample-and-Hold Circuits
- Communication Systems
- Automatic Test Equipment
- Integrator Reset Circuits
- Choppers
- Gain Switching
- Avionics

FUNCTIONAL BLOCK DIAGRAM AND PIN CONFIGURATION

**TRUTH TABLE**

<table>
<thead>
<tr>
<th>Logic</th>
<th>Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>ON</td>
</tr>
<tr>
<td>1</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Logic "0" $\leq$ 0.8 V
Logic "1" $\geq$ 2.4 V

* Pb containing terminations are not RoHS compliant, exemptions may apply
**DG201HS**
Vishay Siliconix

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Temp Range</th>
<th>Package</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 40 to 85 °C</td>
<td>16-Pin Plastic DIP</td>
<td>DG201HSDJ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDJ-E3</td>
</tr>
<tr>
<td></td>
<td>16-Pin Narrow SOIC</td>
<td>DG201HSDY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDY-E3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDY-T1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDY-T1-E3</td>
</tr>
<tr>
<td></td>
<td>16-Pin TSSOP</td>
<td>DG201HSDQ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDQ-E3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDQ-T1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DG201HSDQ-T1-E3</td>
</tr>
</tbody>
</table>

### ABSOLUTE MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Limit</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>V+ to V-</td>
<td>44</td>
<td>V</td>
</tr>
<tr>
<td>GND to V-</td>
<td>25</td>
<td>V</td>
</tr>
<tr>
<td>Digital Inputs(a, V_S, V_D)</td>
<td>(V-) - 4 to (V+) + 4 or 30 mA, whichever occurs first</td>
<td></td>
</tr>
<tr>
<td>Continuous Current (Any Terminal)</td>
<td>30</td>
<td>mA</td>
</tr>
<tr>
<td>Current, S or D (Pulsed at 1 ms, 10 % duty cycle)</td>
<td>100</td>
<td>mA</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>(A Suffix) - 65 to 150</td>
<td>°C</td>
</tr>
<tr>
<td></td>
<td>(D Suffix) - 65 to 125</td>
<td></td>
</tr>
<tr>
<td>Power Dissipation (Package)(b)</td>
<td>16-Pin Plastic DIP(c)</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td>16-Pin CerDIP(d)</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>16-Pin Narrow Body SOIC and TSSOP(e)</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>LCC-20(d)</td>
<td>900</td>
</tr>
</tbody>
</table>

**Notes:**

- a. Signals on \(S_X, D_X, \text{or IN}_X\) exceeding \(V+\) or \(V-\) will be clamped by internal diodes. Limit forward diode current to maximum current ratings.
- b. All leads welded or soldered to PC board.
- c. Derate 6 mW/°C above 75 °C.
- d. Derate 12 mW/°C above 75 °C.
- e. Derate 7.6 mW/°C above 75 °C.

### SCHEMATIC DIAGRAM (TYPICAL CHANNEL)

![Schematic Diagram](image-url)
### SPECIFICATIONS

#### Analog Switch

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions Unless Specified</th>
<th>Temp</th>
<th>A Suffix</th>
<th>D Suffix</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Signal Range(^a)</td>
<td>(V_{\text{ANALOG}})</td>
<td>(V_{\text{IN}} = 3 \text{ V}, 0.8 \text{ V}^1)</td>
<td>Full</td>
<td>V-</td>
<td>V+</td>
<td>V-</td>
<td>V+</td>
<td>V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain-Source On-Resistance</td>
<td>(I_{\text{DS(on)}})</td>
<td>(I_{S} = - 10 \text{ mA}, V_{D} = \pm 8.5 \text{ V})</td>
<td>Room</td>
<td>25</td>
<td>50</td>
<td>75</td>
<td>50</td>
<td>75</td>
<td>(\Omega)</td>
<td></td>
</tr>
<tr>
<td>(I_{\text{DS(on)}}) Match</td>
<td>(I_{\text{S(off)}})</td>
<td>(V_{+} = 16.5 \text{ V}, V_{-} = - 16.5 \text{ V})</td>
<td>Room</td>
<td>-1</td>
<td>60</td>
<td>1</td>
<td>-20</td>
<td>1</td>
<td>20</td>
<td>nA</td>
</tr>
<tr>
<td>Switch Off Leakage Current</td>
<td>(I_{\text{D(on)}})</td>
<td>(V_{+} = 16.5 \text{ V}, V_{-} = - 16.5 \text{ V})</td>
<td>Room</td>
<td>0.1</td>
<td>-1</td>
<td>60</td>
<td>1</td>
<td>-20</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Switch On Leakage Current</td>
<td>(I_{\text{DS(on)}})</td>
<td>(V_{+} = 13.5 \text{ V}, V_{-} = - 13.5 \text{ V})</td>
<td>Room</td>
<td>Full</td>
<td>50</td>
<td>75</td>
<td>50</td>
<td>75</td>
<td>(\Omega)</td>
<td></td>
</tr>
</tbody>
</table>

#### Digital Control

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions Unless Specified</th>
<th>Temp</th>
<th>A Suffix</th>
<th>D Suffix</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input, High Voltage</td>
<td>(V_{\text{INH}})</td>
<td>(V_{\text{INH}} = 2.4 \text{ V})</td>
<td>Full</td>
<td>2.4</td>
<td>2.4</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input, Low Voltage</td>
<td>(V_{\text{INL}})</td>
<td>(V_{\text{INL}} = 0.8 \text{ V})</td>
<td>Full</td>
<td>0.8</td>
<td>0.8</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Capacitance</td>
<td>(C_{\text{IN}})</td>
<td>(2.2 \text{ pF})</td>
<td>Full</td>
<td>5</td>
<td></td>
<td>pF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Current</td>
<td>(I_{\text{INH}}) or (I_{\text{INL}})</td>
<td>(V_{\text{IN under test}} = \pm 0.8 \text{ V}, 3 \text{ V})</td>
<td>Full</td>
<td>-1</td>
<td>1</td>
<td>-1</td>
<td>1</td>
<td>(\mu\text{A})</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Dynamic Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions Unless Specified</th>
<th>Temp</th>
<th>A Suffix</th>
<th>D Suffix</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn-On Time</td>
<td>(t_{\text{ON}})</td>
<td>(R_{L} = 1 \text{ k}\Omega, C_{L} = 35 \text{ pF})</td>
<td>Room</td>
<td>Full</td>
<td>48</td>
<td>60</td>
<td>75</td>
<td>75</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Turn-Off Time</td>
<td>(t_{\text{OFF1}})</td>
<td>(V_{S} = \pm 10 \text{ V}, V_{\text{VNH}} = 3 \text{ V})</td>
<td>Room</td>
<td>Full</td>
<td>50</td>
<td>70</td>
<td>70</td>
<td></td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(t_{\text{OFF2}})</td>
<td>See Figure 2</td>
<td>Room</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Output Setting Time to 0.1 %</td>
<td>(t_{s})</td>
<td>(C_{L} = 1 \text{ nF}, V_{S} = 0 \text{ V})</td>
<td>Room</td>
<td>-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pC</td>
<td></td>
</tr>
<tr>
<td>Charge Injection</td>
<td>(Q)</td>
<td>(V_{S} = 0 \text{ V}, V_{\text{gen}} = 0 \text{ V}, R_{\text{gen}} = 0 \text{ \Omega})</td>
<td>Room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off Isolation</td>
<td>(O_{\text{IRR}})</td>
<td>(R_{L} = 1 \text{ k}\Omega, C_{L} = 10 \text{ pF})</td>
<td>Room</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Crosstalk (Channel-to-Channel)</td>
<td>(X_{\text{TALK}})</td>
<td>Any Other Channel Switches (R_{L} = 1 \text{ k}\Omega, C_{L} = 10 \text{ pF})</td>
<td>Room</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Off Capacitance</td>
<td>(C_{\text{S(off)}})</td>
<td>(V_{S} = 0 \text{ V}, f = 1 \text{ MHz})</td>
<td>Room</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Drain Off Capacitance</td>
<td>(C_{\text{D(off)}})</td>
<td></td>
<td>Room</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Channel On Capacitance</td>
<td>(C_{\text{D(on)}})</td>
<td></td>
<td>Room</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Drain-to-Source Capacitance</td>
<td>(C_{\text{DS(off)}})</td>
<td></td>
<td>Room</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
</tbody>
</table>

#### Power Supplies

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions Unless Specified</th>
<th>Temp</th>
<th>A Suffix</th>
<th>D Suffix</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Supply Current</td>
<td>(I_{+})</td>
<td>(V_{+} = 15 \text{ V}, V_{-} = - 15 \text{ V})</td>
<td>Room</td>
<td>Full</td>
<td>4.5</td>
<td>10</td>
<td>10</td>
<td></td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>Negative Supply Current</td>
<td>(I_{-})</td>
<td>(V_{\text{IN}} = 0 \text{ or } 5 \text{ V})</td>
<td>Room</td>
<td>Full</td>
<td>3.5</td>
<td>-6</td>
<td>-6</td>
<td></td>
<td>mA</td>
<td></td>
</tr>
<tr>
<td>Power Consumption(^b)</td>
<td>(P_{C})</td>
<td></td>
<td>Full</td>
<td>240</td>
<td></td>
<td>240</td>
<td></td>
<td>mW</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

a. Refer to PROCESS OPTION FLOWCHART.
b. Room = 25 °C. Full = as determined by the operating temperature suffix.
c. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
d. The algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this data sheet.
e. Guaranteed by design, not subject to production test.
f. \(V_{\text{IN}}\) = input voltage to perform proper function.
### SPECIFICATIONS® FOR SINGLE SUPPLY

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions Unless Specified</th>
<th>Temp&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Typ&lt;sup&gt;c&lt;/sup&gt;</th>
<th>A Suffix - 55 to 125 °C</th>
<th>D Suffix - 40 to 85 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Switch</td>
<td>V&lt;sub&gt;ANALOG&lt;/sub&gt;</td>
<td>V&lt;sup﹢&lt;/sup&gt; = 10.8 V to 16.5 V, V&lt;sub&gt;-&lt;/sub&gt; = GND = 0 V, V&lt;sub&gt;I&lt;/sub&gt; = 3 V, 0.8 V&lt;sup&gt;﹢&lt;/sup&gt;</td>
<td>Full</td>
<td>0</td>
<td>V+</td>
<td>0</td>
</tr>
<tr>
<td>Drain-Source On-Resistance</td>
<td>r&lt;sub&gt;DS(on)&lt;/sub&gt;</td>
<td>I&lt;sub&gt;S&lt;/sub&gt; = -10 mA, V&lt;sub&gt;D&lt;/sub&gt; = 8.5 V V&lt;sup﹢&lt;/sup&gt; = 10.8 V</td>
<td>Room</td>
<td>Full</td>
<td>65</td>
<td>90</td>
</tr>
<tr>
<td>Switch Off Leakage Current</td>
<td>I&lt;sub&gt;S(off)&lt;/sub&gt;</td>
<td>V&lt;sup﹢&lt;/sup&gt; = 16.5 V V&lt;sub&gt;S&lt;/sub&gt; = 0.5 V, 10 V</td>
<td>Room</td>
<td>Full</td>
<td>0.1</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>I&lt;sub&gt;D(off)&lt;/sub&gt;</td>
<td>V&lt;sup﹢&lt;/sup&gt; = 16.5 V V&lt;sub&gt;D&lt;/sub&gt; = 0.5 V, 10 V</td>
<td>Room</td>
<td>Full</td>
<td>0.1</td>
<td>-1</td>
</tr>
<tr>
<td>Channel On Leakage Current</td>
<td>I&lt;sub&gt;D(on) + I&lt;sub&gt;S(on)&lt;/sub&gt;&lt;/i&gt;</td>
<td>V&lt;sup﹢&lt;/sup&gt; = 16.5 V</td>
<td>Room</td>
<td>Full</td>
<td>0.1</td>
<td>-1</td>
</tr>
<tr>
<td>Digital Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input, High Voltage</td>
<td>V&lt;sub&gt;IN(H)&lt;/sub&gt;</td>
<td></td>
<td>Full</td>
<td>2.4</td>
<td>2.4</td>
<td>V</td>
</tr>
<tr>
<td>Input, Low Voltage</td>
<td>V&lt;sub&gt;IN(L)&lt;/sub&gt;</td>
<td></td>
<td>Full</td>
<td>0.8</td>
<td>0.8</td>
<td>pF</td>
</tr>
<tr>
<td>Input Capacitance</td>
<td>C&lt;sub&gt;IN&lt;/sub&gt;</td>
<td></td>
<td>Full</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Current</td>
<td>I&lt;sub&gt;IN(H) or I&lt;sub&gt;IN(L)&lt;/sub&gt;&lt;/i&gt;</td>
<td>V&lt;sup﹢&lt;/sup&gt; = 16.5 V V&lt;sub&gt;IN&lt;/sub&gt; under test = 0.8 V, 3 V</td>
<td>Full</td>
<td>-1</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Dynamic Characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn-On Time</td>
<td>t&lt;sub&gt;ON&lt;/sub&gt;</td>
<td>R&lt;sub&gt;L&lt;/sub&gt; = 1 kΩ, C&lt;sub&gt;L&lt;/sub&gt; = 35 pF V&lt;sub&gt;S&lt;/sub&gt; = 2 V, V = 10.8 V</td>
<td>Room</td>
<td>Full</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>Turn-Off Time</td>
<td>t&lt;sub&gt;OFF1&lt;/sub&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>t&lt;sub&gt;OFF2&lt;/sub&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Settling Time to 0.1 %</td>
<td>t&lt;sub&gt;s&lt;/sub&gt;</td>
<td></td>
<td>Room</td>
<td>180</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge Injection</td>
<td>Q</td>
<td>C&lt;sub&gt;L&lt;/sub&gt; = 1 nF, V&lt;sub&gt;IN&lt;/sub&gt; = 0 V V&lt;sub&gt;gen&lt;/sub&gt; = 0 V, R&lt;sub&gt;gen&lt;/sub&gt; = 0 Ω</td>
<td>Room</td>
<td>10</td>
<td></td>
<td>pC</td>
</tr>
<tr>
<td>Off Isolation</td>
<td>OIRR</td>
<td>R&lt;sub&gt;L&lt;/sub&gt; = 1 kΩ, C&lt;sub&gt;L&lt;/sub&gt; = 10 pF f = 100 kHz</td>
<td>Room</td>
<td>85</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Crosstalk (Channel-to-Channel)</td>
<td>XTALK</td>
<td>Any Other Channel Switches R&lt;sub&gt;L&lt;/sub&gt; = 1 kΩ, C&lt;sub&gt;L&lt;/sub&gt; = 10 pF f = 100 kHz</td>
<td>Room</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Off Capacitance</td>
<td>C&lt;sub&gt;S(off)&lt;/sub&gt;</td>
<td></td>
<td>Room</td>
<td>10</td>
<td></td>
<td>pF</td>
</tr>
<tr>
<td>Drain Off Capacitance</td>
<td>C&lt;sub&gt;D(off)&lt;/sub&gt;</td>
<td>f = 1 MHz</td>
<td>Room</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel On Capacitance</td>
<td>C&lt;sub&gt;D(on)&lt;/sub&gt;</td>
<td>V&lt;sub&gt;ANALOG&lt;/sub&gt; = 0 V</td>
<td>Room</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Supply Current</td>
<td>I&lt;sub&gt;+&lt;/sub&gt;</td>
<td>V&lt;sup﹢&lt;/sup&gt; = 15 V, V&lt;sub&gt;IN&lt;/sub&gt; = 0 or 5 V</td>
<td>Full</td>
<td>10</td>
<td>10</td>
<td>mA</td>
</tr>
<tr>
<td>Power Consumption&lt;sup&gt;f&lt;/sup&gt;</td>
<td>P&lt;sub&gt;C&lt;/sub&gt;</td>
<td></td>
<td>Full</td>
<td>150</td>
<td>150</td>
<td>mW</td>
</tr>
</tbody>
</table>

Notes:
- a. Refer to PROCESS OPTION FLOWCHART.
- b. Room = 25 °C, Full = as determined by the operating temperature suffix.
- c. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- d. The algebraic convention whereby the most negative value is a minimum and the most positive a maximum, is used in this data sheet.
- e. Guaranteed by design, not subject to production test.
- f. V<sub>IN</sub> = input voltage to perform proper function.

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.
**TYPICAL CHARACTERISTICS**  25 °C, unless otherwise noted

- **r\(_{DS(on)}\) vs. V\(_D\) and Power Supply Voltages**
- **Leakage Currents vs. Temperature**
- **Switching Time vs. Power Supply Voltage**

---

**Input Switching Threshold vs. Supply Voltage**

- **Switching Time vs. Power Supply Voltage**
DG201HS
Vishay Siliconix

TYPICAL CHARACTERISTICS 25 °C, unless otherwise noted

Switching Times vs. Temperature

Switching Times vs. Power Supply Voltage

Switching Times vs. Temperature

Charge Injection vs. Source Voltage

Off Isolation vs. Frequency
TEST CIRCUITS

Figure 2. Switching Time

\[ V_O = V_S - \frac{R_L}{R_L + r_{DS(on)}} \]

\[ C_L \text{ (includes fixture and stray capacitance)} \]

Figure 3. Charge Injection

\[ Q = \Delta V_O \times C_L \]

Figure 4. Off Isolation

\[ \text{Off Isolation} = 20 \log \left| \frac{V_S}{V_O} \right| \]

Figure 5. Crosstalk

\[ X_{\text{BILK}} \text{ Isolation} = 20 \log \left| \frac{V_S}{V_O} \right| \]

\[ C = \text{RF bypass} \]
DG201HS
Vishay Siliconix

APPLICATIONS
A high-speed, low-glitch analog switch such as Vishay Siliconix’s DG201HS improves the accuracy and shortens the acquisition and settling times of a sample-and-hold circuit.

Vishay Siliconix maintains worldwide manufacturing capability. Products may be manufactured at one of several qualified locations. Reliability data for Silicon Technology and Package Reliability represent a composite of all qualified locations. For related documents such as package/tape drawings, part marking, and reliability data, see http://www.vishay.com/ppg?70038.
Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.