

Linear Systems replaces discontinued Siliconix SD* product line

SD5000 / SD5400 series Quad N-Channel Enhancement Mode DMOS Lateral Switches

SD5000 / SD5400 ultra-fast switches offer improved accuracy, speed and throughput, with less glitching or distortion than JFETs or multiplexers. Designed for high frequency RF operation, SD5000 / SD5400 provide switching speeds of 1ns with the unique combination of 70ohms "ON" resistance, and a reverse transfer capacitance of .5 pf. A maximum threshold of 1.5 volts permits simple TTL and CMOS driving for small signal applications.

SD5400 / SD5000 can switch analog signals up to +/- 10 volts, while the SD5401 / SD5001 can switch signals up to +/- 5 volts. All versions have gate ESD protection zener diodes.

SD5000 / SD5400 Applications:

- ATE (Automatic Test Equipment)
- Analog Switch, A/D & D/A Converters
- Laser Drivers
- Medical Imaging
- Multiplexer, Sample & Hold, Switch Driver & Vision Systems

Availability:

SD5400 / SD5401 - 14 Pin narrow body SOIC
 SD5400 / SD5401 - 16 Pin narrow body SOIC
 SD5400 / SD5401 - Bare die and wafer form
 SD5000N / SD5001N - 16 Pin DIP
 SD5000N / SD5001N - Bare die and wafer form

Features:

- Quad SPST Switch with Zener Input Protection Switch
- Low Interelectrode Capacitance and Leakage
- Ultra-High Speed Switching—tON: 1 ns
- Ultra-Low Reverse Capacitance: 0.2 pF
- Low Turn-On Threshold Voltage

Benefits:

- High-Speed System Performance
- Low Insertion Loss at High Frequencies
- Low Transfer Signal Loss
- Simple Driver Requirement
- Single Supply Operation

Description:

The SD5000 / SD5400 series of monolithic switches features four individual double-diffused enhancement-mode MOSFETs built on a common substrate. These bidirectional devices provide low on-resistance and low interelectrode capacitances to minimize insertion loss and crosstalk.

Built on Siliconix' proprietary DMOS process, the SD5000 / SD5400 series utilizes lateral construction to achieve low capacitance and ultra-fast switching speeds. For manufacturing reliability, these devices feature poly-silicon gates protected by Zener diodes

Product Summary:

| Part Number | V _{(BR)DS} Min (V) | V _{GS(th)} Max (V) | r _{DS(on)} Max (Ω) | C _{rss} Max (pF) | t _{ON} Max (ns) |
|-------------|-----------------------------|-----------------------------|-----------------------------|---------------------------|--------------------------|
| SD5000I | 20 | 1.5 | 70 @ V _{GS} = 5 V | 0.5 | 2 |
| SD5000N | 20 | 1.5 | 70 @ V _{GS} = 5 V | 0.5 | 2 |
| SD5001N | 10 | 1.5 | 70 @ V _{GS} = 5 V | 0.5 | 2 |
| SD5400CY | 20 | 1.5 | 75 @ V _{GS} = 5 V | 0.5 | 2 |
| SD5401CY | 10 | 1.5 | 75 @ V _{GS} = 5 V | 0.5 | 2 |

Absolute Max Ratings

Gate-Drain, Gate-Source Voltage

(SD5000, SD5400) +30 V / -25 V
 (SD5001, SD5401) +25 V / -15 V

Gate-Substrate Voltage

(SD5000, SD5400) +30 V / -0.3 V
 (SD5001, SD5401) +25 V / -0.3 V

Drain-Source Voltage

(SD5000, SD5400) 20 V
 (SD5001, SD5401) 10 V

Drain-Source-Substrate Voltage

(SD5000, SD5400) 25 V
 (SD5001, SD5401) 15 V

Drain Current50 mA
 Lead Temperature (1/16" from case for 10 seconds) . 300°C
 Storage Temperature - 65 to 150°C
 Operating Junction Temperature - 55 to 150°C

For full datasheet and also mechanical die details please contact your stocking distributor **Micross Components Ltd**,

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Note all package types are available with special electrical selection, including bare die form.

Packages – Top View

