LINEAR SYSTEMS

SD5000 / SD5400

micross

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

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

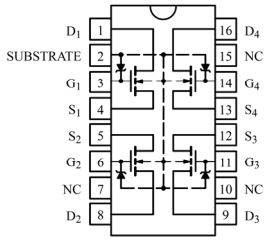
Drain Current . . . . . .50 mA
Lead Temperature (1/16" from case for 10 seconds) . 300˚C
Storage Temperature . . . . . – 65 to 150˚C
Operating Junction Temperature . . . . . – 55 to 150˚C

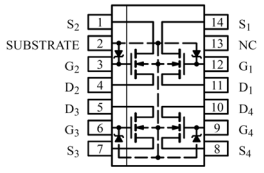
For full datasheet and also mechanical die details
Please contact Micross Components,

chipcomponents@micross.com

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

Packages – Top View





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