

SD210 / SD212 / SD214

FEATURES

- High Input to Output Isolation 120dB
- Low On Resistance 30 Ohm
- Low Feedthrough and Feedback Transients
- Low Capacitance:
 - Input (Gate) 2.4pF typ.
 - Output 1.3pF typ.
 - Feedback 0.3pF typ.
- No protection Diode from Gate to Substrate for Very High Impedance Applications
- Maximum Gate Voltage $\pm 40V$

APPLICATIONS

SD210:

- Analog Switch Driver

SD212 and SD214:

- Analog Switches
- High-Speed Digital Switches
- Multiplexers
- A to D Converters
- D to A Converters
- Choppers
- Sample & Hold

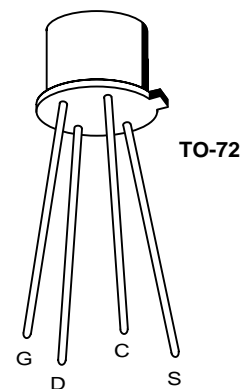
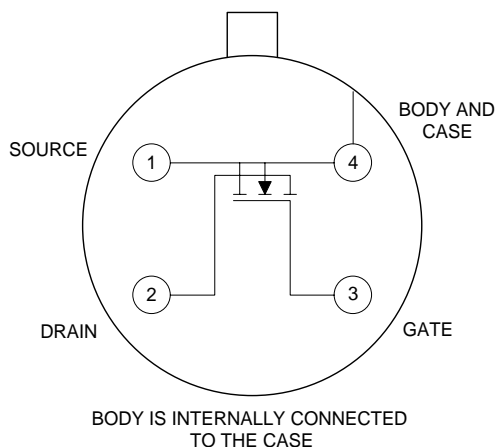
DESCRIPTION

The Calogic SD210 is a 30V analog switch driver without a built-in protection diode from gate to substrate for use with SD212 and SD214 DMOS analog switches.

ORDERING INFORMATION

Part	Package	Temperature Range
SD210E	Hermetic TO-72 Package	-55°C to +125°C
XSS210	Sorted Chips in Carriers	-55°C to +125°C
SD212DE	Hermetic TO-72 Package	-55°C to +125°C
XSD212	Sorted Chips in Carriers	-55°C to +125°C
SD214DE	Hermetic TO-72 Package	-55°C to +125°C
XSD214	Sorted Chips in Carriers	-55°C to +125°C

SCHEMATIC DIAGRAM (Top View)



CD1-2

ABSOLUTE MAXIMUM RATINGS

Drain Current 50mA
 Total Device Dissipation at 25°C Case Temperature . . . 1.2W
 Storage Temperature Range -65°C to +200°C
 Lead Temperature (1/16" from case for 10 sec.) 300°C
 Operating Temperature Range -55°C to +125°C

	PARAMETER	SD210	SD212	SD214	UNIT
V _{DS}	Drain-to-Source	+30	+10	+20	V _{dc}
V _{SD}	Source-to-Drain	+10	+10	+20	V _{dc}
V _{DB}	Drain-to-Body	+30	+15	+25	V _{dc}
V _{SB}	Source-to-Body	+15	+15	+25	V _{dc}
V _{GS}	Gate-to-Source	±40	±40	±40	V _{dc}
V _{GB}	Gate-to-Body	±40	±40	±40	V _{dc}
V _{GD}	Gate-to-Drain	±40	±40	±40	V _{dc}

DC CHARACTERISTICS (T_A = 25°C, unless otherwise specified)

SYMBOL	PARAMETER	SD210			SD212			SD214			UNITS	TEST CONDITIONS
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
BREAKDOWN VOLTAGE												
BV _{DS}	Drain-to-Source	30	35								V	V _{GS} = V _{BS} = 0V, I _D = 10μA
		10	25		10	25		20	25			V _{GS} = V _{BS} = -5V, I _S = 10nA
BV _{SD}	Source-to Drain	10			10			20				V _{GD} = V _{BD} = -5V, I _D = 10nA
BV _{DB}	Drain-to-Body	15			15			25				V _{GB} = 0V, source OPEN, I _D = 10nA
BV _{SB}	Source-to-Body	15			15			25				V _{GB} = 0V, drain OPEN, I _S = 10μA
LEAKAGE CURRENT												
I _{DS} (OFF)	Drain-to-Source		1	10		1	10				nA	V _{GS} = V _{BS} = -5V, V _{DS} = +10V
									1	10		V _{GS} = V _{BS} = -5V, V _{DS} = +20V
I _{SD} (OFF)	Source-to-Drain		1	10		1	10					V _{GS} = V _{BD} = -5V, V _{SD} = +10V
									1	10		V _{GS} = V _{BD} = -5V, V _{SD} = +20V
I _{GBS}	Gate			0.1			0.1			0.1		V _{DB} = V _{SB} = 0V, V _{GS} = ±40V
V _T	Threshold Voltage	0.5	1.0	2.0	0.1	1.0	2.0	0.1	1.0	2.0		V
r _{DS} (ON)	Drain-to-Source Resistance		50	70		50	70		50	70	Ω	I _D = 1.0mA, V _{SB} = 0, V _{GS} = +5V
			30	45		30	45		30	45		I _D = 1.0mA, V _{SB} = 0, V _{GS} = +10V
			23			23			23			I _D = 1.0mA, V _{SB} = 0, V _{GS} = +15V
			19			19			19			I _D = 1.0mA, V _{SB} = 0, V _{GS} = +20V
			17			17			17			I _D = 1.0mA, V _{SB} = 0, V _{GS} = +25V

AC ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	SD210			SD212			SD214			UNITS	TEST CONDITIONS
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX		
g _{fs}	Forward Transconductance	10	15		10	15		10	15		ms	V _{DS} = 10V, V _{SB} = 0V, I _D = 20mA, f = 1kHz
SMALL SIGNAL CAPACITANCES												
C _(GS+GD+GB)	Gate Node		2.4	3.5		2.4	3.5		2.4	3.5	pF	V _{DS} = 10V, f = 1MHz V _{GS} = V _{BS} = -15V
C _(GD+DB)	Drain Node		1.3	1.5		1.3	1.5		1.3	1.5		
C _(GS+SB)	Source Node		3.5	5.5		3.5	5.5		3.5	5.5		
C _{DG}	Reverse Transfer		0.3	0.5		0.3	0.5		0.3	0.5		

Information furnished by Calogic is believed to be accurate and reliable. However, no responsibility is assumed for its use: nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent rights of Calogic.

This datasheet has been download from:

www.datasheetcatalog.com

Datasheets for electronics components.