

SD211 / SD213 / SD215

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.
- Built-in Protection Diode from Gate to Substrate

APPLICATIONS

SD211:

- Analog Switch Driver

SD213 and SD215:

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

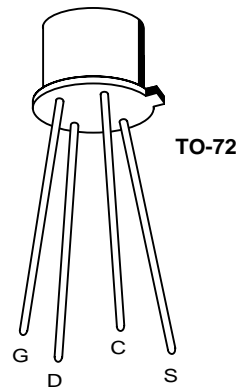
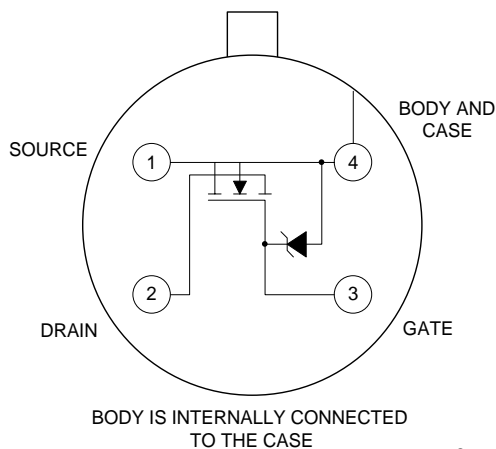
DESCRIPTION

The Calogic SD211 is a 30V analog switch driver with built-in protection diode from gate to substrate. The SD211 is used with SD213 and SD215 DMOS analog switches.

ORDERING INFORMATION

Part	Package	Temperature Range
SD211E	Hermetic TO-72 Package	-55°C to +125°C
XSS211	Sorted Chips in Carriers	-55°C to +125°C
SD213DE	Hermetic TO-72 Package	-55°C to +125°C
XSD213	Sorted Chips in Carriers	-55°C to +125°C
SD215DE	Hermetic TO-72 Package	-55°C to +125°C
XSD215	Sorted Chips in Carriers	-55°C to +125°C

SCHEMATIC DIAGRAM (Top View)



CD1-1

SD211 / SD213 / SD215



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	SD211	SD212	SD215	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	-15 +25	-15 +25	-25 +30	V _{dc}
V _{GB}	Gate-to-Body	-0.3 +25	-0.3 +25	-0.3 +30	V _{dc}
V _{GD}	Gate-to-Drain	-30 +25	-15 +25	-25 +30	V _{dc}

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

SYMBOL	PARAMETER	SD211			SD213			SD215			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	
I _{SD} (OFF)	Source-to-Drain		1	10		1	10			1		10	V _{GS} = V _{BS} = -5V, V _{DS} = +20V
I _{GBS}	Gate			10			10					10	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	V _{DS} = V _{GS} = V _T , I _S = 1μA, V _{SB} = 0V
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				I _D = 1.0mA, V _{SB} = 0, V _{GS} = +25V

AC ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	SD211			SD213			SD215			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 _{iss}	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 _{oss}	Drain Node		1.3	1.5		1.3	1.5		1.3	1.5		
C _{rss}	Source Node		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.