LINEAR SYSTEMS

Improved Standard Products®

SD-SST211/213/215

N-Channel Lateral DMOS Switch, Zener Protected

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)
SD211DE	30	1.5	45 @ V_{GS}=10V	0.5	2
SD213DE	10	1.5	45 @ V_{GS}=10V	0.5	2
SD215DE	20	1.5	45 @ V_{GS}=10V	0.5	2
SST211	30	1.5	50 @ V_{GS}=10V	0.5	2
SST213	10	1.5	50 @ V_{GS}=10V	0.5	2
SST215	20	1.5	50 @ V_{GS}=10V	0.5	2

Features

- Ultra-High Speed Switching—I_{ON}: 1ns
- Ultra-Low Reverse Capacitance: 0.2pF
- Low Guaranteed r_{DS} @5V
- Low Turn-On Threshold Voltage
- N-Channel Enhancement Mode

Benefits

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

Applications

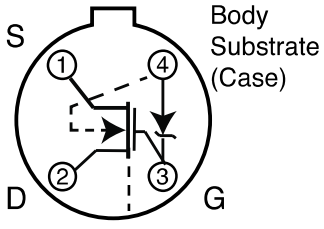
- Fast Analog Switch
- Fast Sample-and-Holds
- Pixel-Rate Switching
- DAC Deglitchers
- High-Speed Driver

Description

The SD211DE/SST211 series consists of enhancement-mode MOSFETs designed for high-speed low-glitch switching in audio, video and high-frequency applications. The SD211 may be used for a ±5-V analog switching or as a high-speed driver of the SD214. The SD214 is normally used for ±10-V analog switching. These MOSFETs utilize lateral construction to achieve low capacitance and ultra-fast switching speeds. An integrated ZENER diode provides ESD protection. These devices feature a poly-silicon gate for manufacturing reliability.

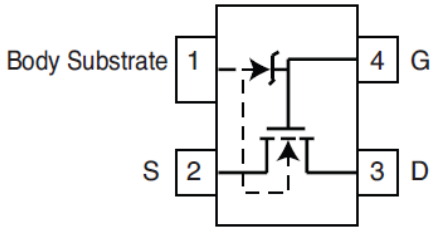
For similar products see: quad array—SD5000/5400 series, non-Zener protection—SD210DE/214DE.

TO-206AF
(TO-72 4L)



Top View
SD211DE, SD213DE, SD215DE

TO-253
(SOT-143 4L)



Top View
SST211, SST213, SST215

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Gate Drain, Gate Source Voltage (SD211DE/SST211).....-30/25V
(SD213DE/SST213).....-15/25V
(SD215DE/SST215).....-25/30V
Gate-Substrate Voltage[a] (SD211DE/SST211).....-0.3/25V
(SD213DE/SST213).....-0.3/25V
(SD215DE/SST215).....-0.3/30V
Drain-Source Voltage (SD211DE/SST211).....30V
(SD213DE/SST213).....10V
(SD215DE/SST215).....20V
Voltage (SD211DE/SST211).....10V
(SD213DE/SST213).....10V
(SD215DE/SST215).....20V

Drain-Substrate Voltage (SD211DE/SST211).....30V
(SD213DE/SST213).....15V
(SD215DE/SST215).....25V
Source-Substrate Voltage (SD211DE/SST211).....15V
(SD213DE/SST213).....15V
(SD215DE/SST215).....25V
Drain Current 50mA
Lead Temperature (1/16" from ease for 10 seconds) .....300°C
Storage Temperature .....-65 to 150°C
Operating Junction Temperature .....-55 to 125°C
Power Dissipation 300mW

Notes:
a. Derate 3mW/°C above 25°C

Specifications[a]

PARAMETER	SYMBOL[b]	TEST CONDITIONS[b]		TYP[b]	LIMITS 211 Series Min	211 Series Max	213 Series Min	213 Series Max	215 Series Min	215 Series Max	UNIT
Static											
Drain - Source Breakdown Voltage	$V_{(BR)DS}$	V_{GS} = V_{BS} = 0V, I_D = 10 µA		35	30						V
		V_{GS} = V_{BS} = -5V, I_D = 10 nA		30	10		10		20		
Source - Drain Breakdown Voltage	$V_{(BR)SD}$	V_{GS} = V_{BD} = -5V, I_S = 10 nA		22	10		10		20		
Drain - Substrate Breakdown Voltage	$V_{(BR)DBO}$	V_{GB} = 0V, I_D= 10 nA Source Open		35	15		15		25		
Source - Substrate Breakdown Voltage	$V_{(BR)SBO}$	V_{GB} = 0V, I_s = 10 µA Drain Open		35	15		15		25		
Drain – Source Leakage	$I_{DS(off)}$	V_{GS} = V_{BS} = -5V	V_{DS} = 10V	0.4		10		10			nA
			V_{DS} = 20V	0.9						10	
Source - Drain Leakage	$I_{SD(off)}$	V_{GD} = V_{BD} = -5V	V_{SD} = 10V	0.5		10		10			
			V_{SD} = 20V							10	
Gate Leakage	I_{GBS}	V_{DB} = V_{SB} = 0V, V_{GB} = 30V		0.01		100		100		100	
Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 1 µA , V_{SB} = 0V		0.8	0.5	1.5	0.1	1.5	0.1	1.5	V
Drain – Source On-Resistance	$r_{DS(on)}$	V_{SB} = 0V I_D = 1mA	V_{GS} = 5V (SD Series)	58		70		70		70	Ω
			V_{GS} = 5V (SST Series)	60		75		75		75	
			V_{GS} = 10V (SD Series)	38		45		45		45	
			V_{GS} = 10V (SST Series)	40		50		50		50	
			V_{GS} = 15V	30							
			V_{GS} = 20V	26							
			V_{GS} = 25V	24							

Specifications[a]

PARAMETER	SYMBOL[b]	TEST CONDITIONS[b]		TYP[c]	LIMITS						UNIT
					211 Series		213 Series		215 Series		
					Min	Max	Min	Max			
Dynamic											
Forward Transconductance	g_{fs}	V_{DS} = 10V, V_{SB} = 0V, , I_D = 20mA, f = 1kHz	SD Series	11	10		10		10		mS
	g_{os}		SST Series	10.5	9		9		9		
			All	0.9							
Gate Node Capacitance	$C_{(GS+GD+GB)}$	V_{DS} = 10V, f = 1MHz V_{GS} = V_{BS} = -15V	SD Series	2.5		3.5		3.5		3.5	pF
Drain Node Capacitance	$C_{(GD+DB)}$			1.1		1.5		1.5		1.5	
Source Node Capacitance	$C_{(GS+SB)}$			3.7		5.5		5.5		5.5	
Reverse Transfer Capacitance	C_{rss}		SST Series	4.2							
			SD Series	0.2		0.5		0.5		0.5	
Switching											
Turn-On Time	$t_{D(on)}$	SD Series Only V_{SB} = 0V, V_{IN} 0 to 5V, R_G = 25Ω V_{DD} = 5V, R_L = 680Ω		0.5		1		1		1	ns
	t_r			0.6		1		1		1	
Turn-Off Time	$t_{D(off)}$			2							
	t_f			6							

Notes:

a. T_A = 25°C unless otherwise notes.

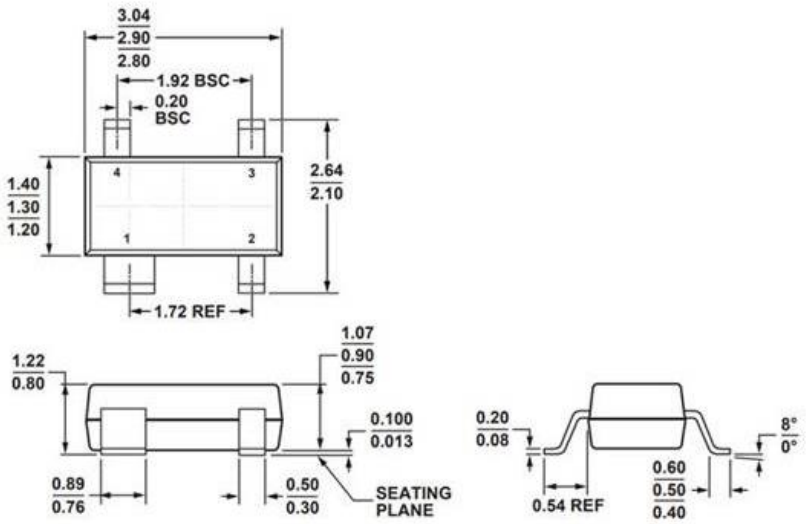
b. B is the body (substrate) and $V_{(BR)}$ is breakdown voltage.

c. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.

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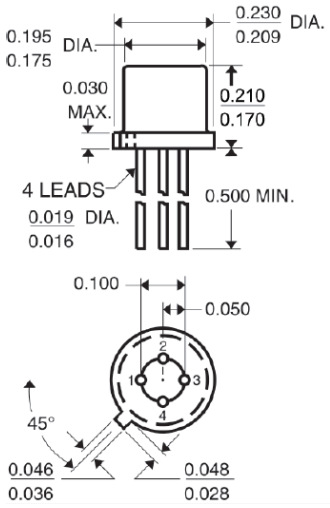
Package Dimensions:

TO-253
(SOT-143 4L)



Dimensions Shown in Millimeters

TO-206AF
(TO-72 4L)



Dimensions Shown in Inches

Ordering Information:

Standard Part Call-Out	Custom Part Call-Out (Custom Parts Include SEL + 4 Digit Numeric Code)
SD211DE TO-72 4L RoHS	SD211DE TO-72 4L RoHS SELXXX
SD213DE TO-72 4L RoHS	SD213DE TO-72 4L RoHS SELXXX
SD215DE TO-72 4L RoHS	SD215DE TO-72 4L RoHS SELXXX
SST211 SOT-143 4L RoHS	SST211 SOT-143 4L RoHS SELXXX
SST213 SOT-143 4L RoHS	SST213 SOT-143 4L RoHS SELXXX
SST215 SOT-143 4L RoHS	SST215 SOT-143 4L RoHS SELXXX

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Üretici parça numarasını yazın; stok ve fiyatı hemen görün.

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Entegreden kapasitöre tüm elektronik komponent kategorileri.

Kategorilere göz atın

Üreticiler

Aradığınız üreticinin ürünlerini tek sayfada inceleyin.

Üreticileri görün

Toplu alım ve teklif

Listede olmayan ya da yüksek adetli parçalar için teklif isteyin.

Teklif isteyin

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