



**SD1202**

## N-CHANNEL ENHANCEMENT-MODE HIGH-VOLTAGE D-MOS FETs

### ORDERING INFORMATION

Sorted Chips in Waffle Pack	SD1202CHP
TO-226AA (TO-92) Package	SD1202BD
Description	200V, 250 ohm

### FEATURES

- Low Capacitance ( $C_{oss}$  1.0 pF typ.)
- Low Leakage ( $I_{DSS}$  0.5nA typ. @ 180V)
- High Gate Standoff Voltage ( $\pm 100V$  min.)

### APPLICATIONS

- Display Drivers
- AC-DC Relays
- Reed Relays
- Low-Power, High-Voltage Drivers

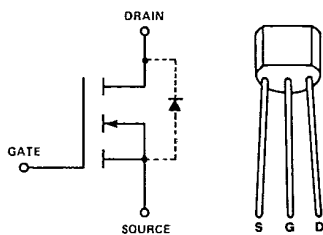
### ABSOLUTE MAXIMUM RATINGS (T = +25°C unless otherwise noted.)

Drain-Source Voltage ..... 200V  
 Drain-Gate Voltage ( $V_{GS} = 0$ ) ..... 200V  
 Gate-Source Voltage .....  $\pm 100V$   
 Continuous Drain Current (Note 1) ..... 20mA  
 Peak Drain Current (Note 1) ..... 40mA  
 Continuous Device Dissipation (Note 1) ..... 300mW  
 Linear Derating Factor (Note 1) ..... 2.4mW/°C

Operating Junction and Storage  
 Temperature Range ..... -55 to +150°C  
 Storage Temperature Range ..... -55 to +150°C  
 Lead Temperature (1/16" from mounting  
 surface for 30 Sec) ..... +260°C

Note 1: Not applicable to chips. Final value depends upon mounting substrate.

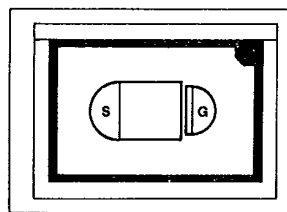
### SCHEMATIC DIAGRAM



### PACKAGE DIMENSIONS (TO-92) TO-226AA

(See Package 5)

### CHIP CONFIGURATION



Drain is backside contact.  
 Dimensions: .025 x .035 x .020 inches

**ELECTRICAL CHARACTERISTICS** (T<sub>C</sub> = +25°C unless otherwise noted)

#	CHARACTERISTIC	SD1202			UNITS	TEST CONDITIONS
		MIN	TYP	MAX		
1	BV <sub>DSS</sub> Drain Source Breakdown Voltage	200	260		V	I <sub>D</sub> = 1.0μA, V <sub>GS</sub> = 0
2	I <sub>GSSF</sub> Gate Forward Leakage Current		.02	10	nA	V <sub>GS</sub> = 100V V <sub>DS</sub> = 0
3	I <sub>GSSR</sub> Gate Reverse Leakage Current		-.02	-10		V <sub>GS</sub> = -100V
4	I <sub>DSS</sub> Drain-Source OFF Leakage Current		0.5	3.0		V <sub>DS</sub> = 180V V <sub>GS</sub> = 0
5	I <sub>DSS</sub> Drain-Source OFF Leakage Current			300		T <sub>C</sub> = +125°C
6	V <sub>GS(th)</sub> Gate Source Threshold Voltage	1.0	4.0	5.0	V	I <sub>D</sub> = 10μA, V <sub>DS</sub> = V <sub>GS</sub>
7	I <sub>D(on)</sub> Drain-Source ON Current	40	55		mA	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 10V
8	r <sub>DS(on)</sub> Drain-Source ON Resistance		150	250	ohms	V <sub>GS</sub> = 10V I <sub>D</sub> = 10mA
9				425		T <sub>C</sub> = +125°C
10	g <sub>fs</sub> Common-Source Forward Transconductance	10	13		mS	V <sub>DS</sub> = 25V, I <sub>D</sub> = 20mA f = 1KHz (Note 1)
11	C <sub>iss</sub> Common-Source Input Capacitance		5.0	10	pF	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0 f = 1MHz
12	C <sub>rss</sub> Common-Source Reverse Transfer Capacitance		0.8	1.0		
13	C <sub>oss</sub> Common-Source Output Capacitance		1.0	2.0		

Note 1: Pulse Test 80μSec, 1% Duty Cycle

**TYPICAL PERFORMANCE CHARACTERISTICS** ( $T_C = +25^\circ\text{C}$  unless otherwise specified)

