

查询/SD1202/供应商  
**TOPAZ**  
 SEMICONDUCTOR

T-29-25

**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

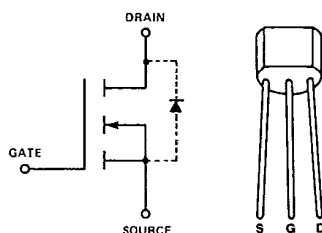
## ABSOLUTE MAXIMUM RATINGS (T = +25°C unless otherwise noted.)

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 (1/8" from mounting  
 surface for 30 Sec) ..... +260 °C

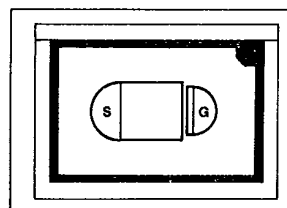
Note 1: Not applicable to chips. Final value depends upon  
 mounting substrate.

## SCHEMATIC DIAGRAM



## PACKAGE DIMENSIONS (TO-92) TO-226AA (See Package 5)

## CHIP CONFIGURATION



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

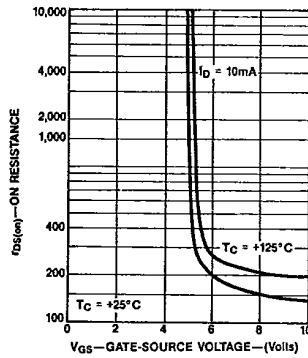
**ELECTRICAL CHARACTERISTICS** ( $T_C = +25^\circ\text{C}$  unless otherwise noted)

#	CHARACTERISTIC		SD1202			UNITS	TEST CONDITIONS	
			MIN	TYP	MAX			
1	STATIC	B <sub>V</sub> DSS Drain Source Breakdown Voltage	200	260		V	I <sub>D</sub> = 1.0μA, V <sub>GS</sub> = 0	
2		I <sub>GSS</sub> F Gate Forward Leakage Current		.02	10	nA	V <sub>GS</sub> = 100V	V <sub>DS</sub> = 0
3		I <sub>GSS</sub> R Gate Reverse Leakage Current		-.02	-10		V <sub>GS</sub> = -100V	
4		I <sub>D</sub> SS Drain-Source OFF Leakage Current		0.5	3.0		V <sub>DS</sub> = 180V V <sub>GS</sub> = 0	
5					300			T <sub>C</sub> = +125°C
6		V <sub>GS</sub> (th) 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</sub> (on) Drain-Source ON Current	40	55		mA	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 10V	
8		r <sub>DS</sub> (on) 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	DYNAMIC	g <sub>f</sub> s Common-Source Forward Transconductance	10	13		mS	V <sub>DS</sub> = 25V, I <sub>D</sub> = 20mA f = 1KHz (Note 1)	
11		C <sub>i</sub> ss Common-Source Input Capacitance		5.0	10	pF	V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0 f = 1MHz	
12		C <sub>r</sub> ss Common-Source Reverse Transfer Capacitance		0.8	1.0			
13		C <sub>o</sub> ss Common-Source Output Capacitance		1.0	2.0			

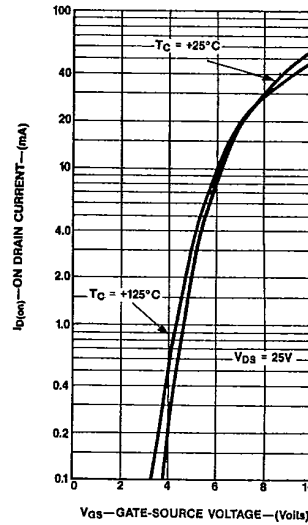
Note 1: Pulse Test 80 $\mu\text{Sec}$ , 1% Duty Cycle

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

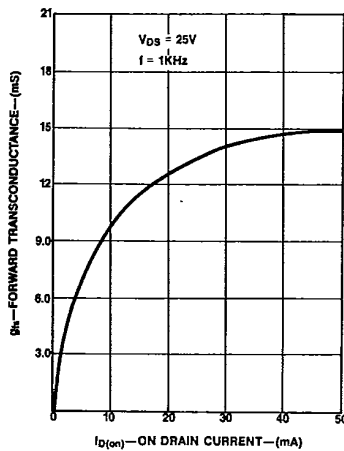
**ON RESISTANCE**  
—VS—  
**GATE-SOURCE VOLTAGE**



**ON DRAIN CURRENT**  
—VS—  
**GATE-SOURCE VOLTAGE**



**FORWARD TRANSCONDUCTANCE**  
—VS—  
**ON DRAIN CURRENT**



**CAPACITANCES**  
—VS—  
**DRAIN-SOURCE VOLTAGE**

