

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

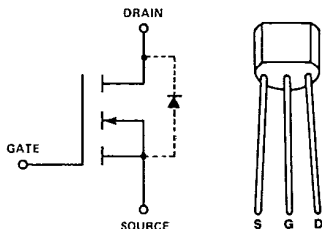
ABSOLUTE MAXIMUM RATINGS (T = +25 °C unless otherwise noted.)

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.

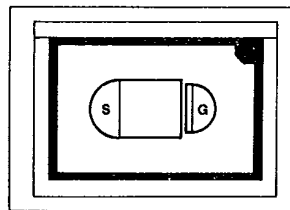
SCHEMATIC DIAGRAM



PACKAGE DIMENSIONS (TO-92) TO-226AA

(See Package 5)

CHIP CONFIGURATION



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

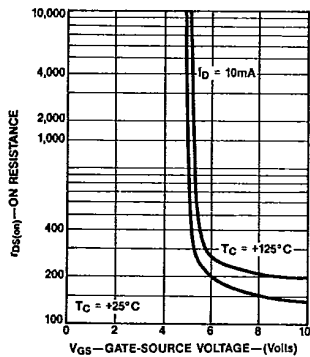
ELECTRICAL CHARACTERISTICS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

#	CHARACTERISTIC		SD1202			UNITS	TEST CONDITIONS	
			MIN	TYP	MAX			
1	STATIC	BV_{DSS} Drain Source Breakdown Voltage	200	260		V	$I_D = 1.0\mu\text{A}, V_{GS} = 0$	
2		I_{GSSF} Gate Forward Leakage Current		.02	10	nA	$V_{GS} = 100\text{V}$	$V_{DS} = 0$
3		I_{GSSR} Gate Reverse Leakage Current		-.02	-10		$V_{GS} = -100\text{V}$	
4		I_{DSS} Drain-Source OFF Leakage Current		0.5	3.0		$V_{DS} = 180\text{V}$ $V_{GS} = 0$	$T_C = +125^\circ\text{C}$
5					300			
6		$V_{GS(th)}$ Gate Source Threshold Voltage	1.0	4.0	5.0	V	$I_D = 10\mu\text{A}, V_{DS} = V_{GS}$	
7		$I_{D(on)}$ Drain-Source ON Current	40	55		mA	$V_{DS} = 25\text{V}, V_{GS} = 10\text{V}$	
8		$r_{DS(on)}$ Drain-Source ON Resistance		150	250	ohms	$V_{GS} = 10\text{V}$ $I_D = 10\text{mA}$	$T_C = +125^\circ\text{C}$
9					425			
10	DYNAMIC	g_{fs} Common-Source Forward Transconductance	10	13		mS	$V_{DS} = 25\text{V}, I_D = 20\text{mA}$ $f = 1\text{KHz}$ (Note 1)	
11		C_{iss} Common-Source Input Capacitance		5.0	10	pF	$V_{DS} = 25\text{V}, V_{GS} = 0$ $f = 1\text{MHz}$	
12		C_{rss} Common-Source Reverse Transfer Capacitance		0.8	1.0			
13		C_{oss} Common-Source Output Capacitance		1.0	2.0			

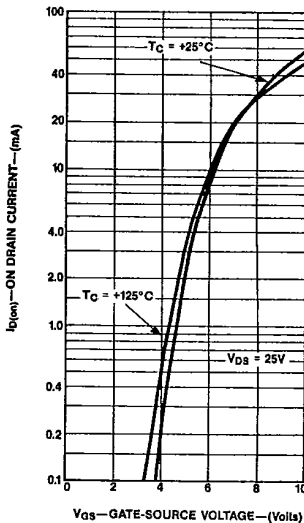
Note 1: Pulse Test 80 μSec , 1% Duty Cycle

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

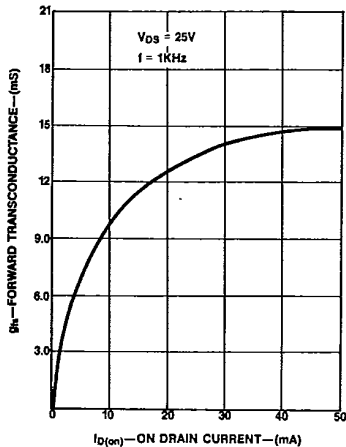
ON RESISTANCE
—VS—
GATE-SOURCE VOLTAGE



ON DRAIN CURRENT
—VS—
GATE-SOURCE VOLTAGE



FORWARD TRANSCONDUCTANCE
—VS—
ON DRAIN CURRENT



CAPACITANCES
—VS—
DRAIN-SOURCE VOLTAGE

