

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.)

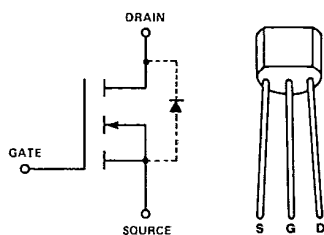
Drain-Source Voltage 200V
 Drain-Gate Voltage ($V_{GS} = 0$) 200V
 Gate-Source Voltage $\pm 100V$
 Continuous Drain Current (Note 1) 20mA
 Peak Drain Current (Note 1) 40mA
 Continuous Device Dissipation (Note 1) 300mW
 Linear Derating Factor (Note 1) 2.4mW/°C

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

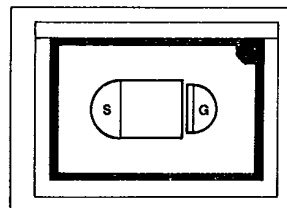
Note 1: Not applicable to chips. Final value depends upon mounting substrate.

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	BV _{DSS} Drain Source Breakdown Voltage	200	260		V	I _D = 1.0μA, V _{GS} = 0	
2		I _{GSSF} Gate Forward Leakage Current		.02	10	nA	V _{GS} = 100V	V _{DS} = 0
3		I _{GSSR} Gate Reverse Leakage Current		-.02	-10		V _{GS} = -100V	
4		I _{DSS} Drain-Source OFF Leakage Current		0.5	3.0		V _{DS} = 180V V _{GS} = 0	
5					300			T _C = +125°C
6		V _{GS(th)} Gate Source Threshold Voltage	1.0	4.0	5.0	V	I _D = 10μA, V _{DS} = V _{GS}	
7		I _{D(on)} Drain-Source ON Current	40	55		mA	V _{DS} = 25V, V _{GS} = 10V	
8		r _{DS(on)} Drain-Source ON Resistance		150	250	ohms	V _{GS} = 10V I _D = 10mA	
9					425			T _C = +125°C
10	DYNAMIC	g _{fs} Common-Source Forward Transconductance	10	13		mS	V _{DS} = 25V, I _D = 20mA f = 1KHz (Note 1)	
11		C _{iSS} Common-Source Input Capacitance		5.0	10	pF	V _{DS} = 25V, V _{GS} = 0 f = 1MHz	
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 80μSec, 1% Duty Cycle

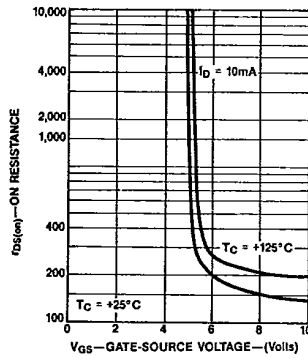
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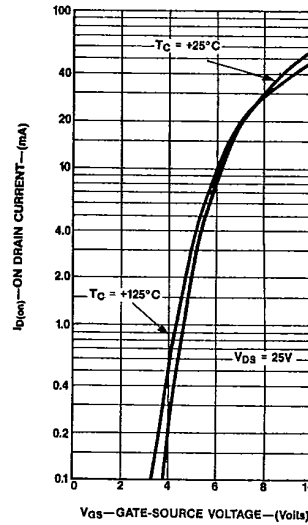
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TYPICAL PERFORMANCE CHARACTERISTICS ($T_C = +25^\circ\text{C}$ unless otherwise specified)

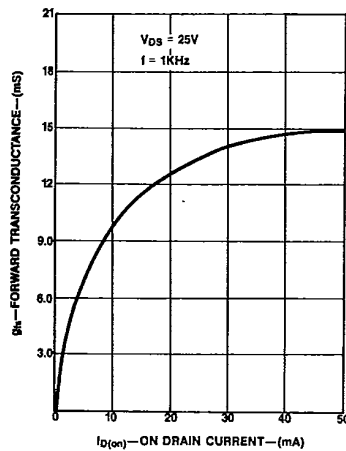
ON RESISTANCE
—VS—
GATE-SOURCE VOLTAGE



ON DRAIN CURRENT
—VS—
GATE-SOURCE VOLTAGE



FORWARD TRANSCONDUCTANCE
—VS—
ON DRAIN CURRENT



CAPACITANCES
—VS—
DRAIN-SOURCE VOLTAGE

