T-29-25

TOPAZ SEMICONDUCTOR

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 (±100V min.)

APPLICATIONS

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

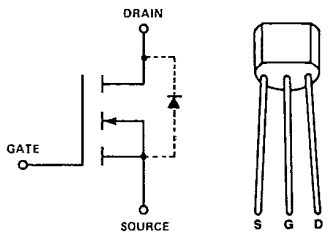
ABSOLUTE MAXIMUM RATINGS (T = +25°C unless otherwise noted.)

Drain-Source Voltage 200V
Drain-Gate Voltage (V_{GS} = 0) 200V
Gate-Source Voltage ..... ±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 (1/6" from mounting surface for 30 Sec) ..... +260°C

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

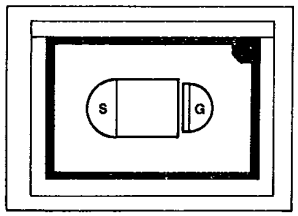
SCHEMATIC DIAGRAM



PACKAGE DIMENSIONS (TO-92) TO-226AA

(See Package 5)

CHIP CONFIGURATION



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

TOPAZ SEMICONDUCTOR

SD1202

ELECTRICAL CHARACTERISTICS (T_C = +25°C unless otherwise noted)

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

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

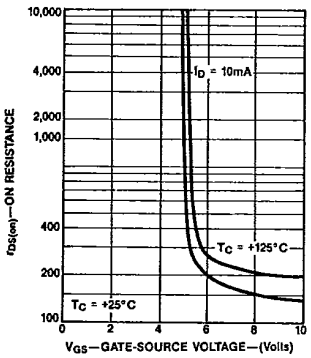
TOPAZ SEMICONDUCTOR

SD1202

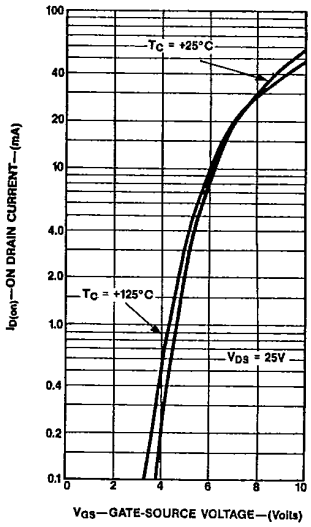
T-29-25

TYPICAL PERFORMANCE CHARACTERISTICS (T_C = +25°C unless otherwise specified)

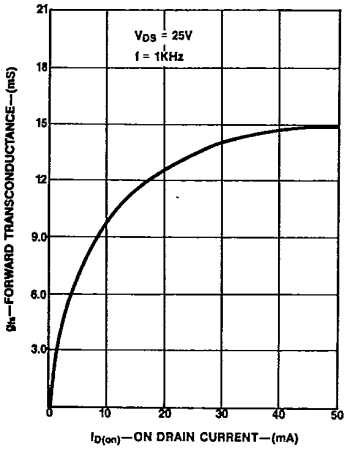
ON RESISTANCE —vs— GATE-SOURCE VOLTAGE



ON DRAIN CURRENT —vs— GATE-SOURCE VOLTAGE



FORWARD TRANSCONDUCTANCE —vs— ON DRAIN CURRENT



CAPACITANCES —vs— DRAIN-SOURCE VOLTAGE