T-29-25

TOPAZ SEMICONDUCTOR

VN10LM, VN2222LM

N-CHANNEL ENHANCEMENT-MODE D-MOS POWER FETs

ORDERING INFORMATION

TO-237 Plastic Package	VN10LM	VN2222LM
Description	60V, 5 ohm	60V, 7.5 ohm

FEATURES

- High Gate Oxide Breakdown, ±40V min.
- Low Output and Transfer Capacitances
- Extended Safe Operating Area

APPLICATIONS

- High-Speed Pulse Amplifiers
- Logic Buffers
- Line Drivers
- Solid-State Relays
- Motor Controls
- Power Supplies

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

Drain-Source Voltage ..... +60V

Drain-Gate Voltage (V_{GS}= 0) ..... +60V

Gate-Source Voltage ..... ±40

Continuous Drain Current

	T_A = 25°C	T_C = 25°C
VN10LM	.19A	.44A
VN2222LM	.16A	.36A

Peak Pulsed Drain Current 1.0A

Continuous Device Dissipation

T_A = +25°C	T_C = +25°C	
0.36	1.8	W

Linear Derating Factor

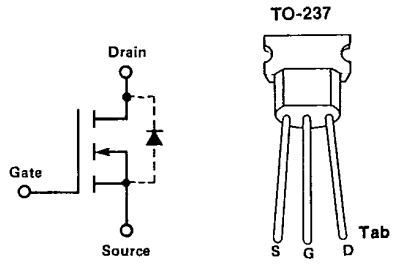
T_A = +25°C	T_C = +25°C	
2.9	14.4	mW/°C

Operating Junction 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

SCHEMATIC DIAGRAM/PACKAGE



PACKAGE DIMENSIONS

TO-237

(See Package 7)

TOPAZ SEMICONDUCTOR

VN10LM, VN2222LM

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

#		CHARACTERISTIC		VN10LM			VN2222LM			UNIT	TEST CONDITIONS
				MIN	TYP	MAX	MIN	TYP	MAX		
1	STATIC	BV_{DSS}	Drain-Source Breakdown Voltage	60	100		60	100		V	I_D=100μA, V_{GS} = 0
2		$V_{GS(th)}$	Gate-Source	0.8	1.9	2.5	0.6	1.9	2.5	V	I_D = 1.0mA, V_{DS} = V_{GS}
3		I_{GBS}	Gate-Body Leakage Current		±1.0	±100		±1.0	±100	nA	V_{GS} = ±30V, V_{DS} = 0
4		I_{DSS}	Drain-Source OFF Leakage Current		0.1	10		0.1	10	μA	V_{DS} = 48V, V_{GS} = 0
5					5.0	500		5.0	500		T_A = 125°C
6		$I_{D(on)}$	ON Drain Current	1.0	2.2		1.0	2.2		A	V_{DS} = 10V, V_{GS} = 10V (Note 1)
7		$V_{DS(on)}$	Drain-Source ON Voltage		0.9	1.5		0.9	1.5	V	V_{GS} = 5V, I_D = 0.2A (Note 1)
8					1.5	2.5		1.5	3.75		V_{GS} = 10V, I_D = 0.5A (Note 1)
9		$r_{DS(on)}$	Drain-Source ON Resistance		4.5	7.5		4.5	7.5	ohms	V_{GS} = 5V, I_D = 0.2A (Note 1)
10					3.0	5.0		3.0	7.5		V_{GS} = 10V, I_D = 0.5A (Note 1)
11					4.7	9.0		4.7	13.5		T_A = +125°C
12	DYNAMIC	g_{fs}	Common-Source Forward Transcond.	100	400		100	400		mmhos	V_{DS} = 10V, I_D = 0.5A f = 1KHz (Note 1)
13		C_{iss}	Common-Source Input Capacitance		80	100		80	100	pF	V_{DS} = 15V, V_{GS} = 0 f = 1MHz
14		C_{rss}	Common-Source Reverse Transfer Capacitance		1.3	5.0		1.3	5.0		
15		C_{OSS}	Common-Source Output Capacitance		10.5	25		10.5	25		
16		t_{on}	Turn-On Time		5.0	10		5.0	10	nSec	V_{DD} = 15V, $V_{G(on)}$ = 10V
17		t_{off}	Turn-Off Time		6.0	10		6.0	10		R_G = 25Ω, R_L = 25Ω

Note 1: Pulse Test 80μ Sec, 1% Duty Cycle