TOPAZ
SEMICONDUCTOR

VN0610LL, VN2222LL

T-29-25

N-CHANNEL ENHANCEMENT-MODE
D-MOS POWER FETs

ORDERING INFORMATION

TO-92 Plastic Package	VN0610LL	VN2222LL
Description	60V, 5 ohm	60V, 7.5 ohm

FEATURES

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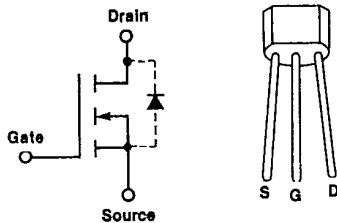■ Extended Safe Operating Area

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 .... ±40V

Continuous Drain Current

	T_A = 25°C	T_C = 25°C
VN0610LL	.18A	.32A
VN2222LL	.15A	.26A

Peak Pulsed Drain Current 1.0A

Continuous Device Dissipation

	T_A = +25°C	T_C = +25°C	
	0.30	1.0	W

Linear Derating Factor

	T_A = +25°C	T_C = +25°C	
	2.4	8.0	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-92) TO-226AA
(See Package 5)

0-88-6

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

#		CHARACTERISTICS	VN0610LL			VN2222LL			UNIT	TEST CONDITIONS
			MIN	TYP	MAX	MIN	TYP	MAX		
1		BV_{DSS} Drain-Source Breakdown Voltage	60	100		60	100		V	I_D = 100μA, V_{GS} = 0
2		$V_{GS(th)}$ Gate-Source Threshold Voltage	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	STATIC	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				4.5	7.5		4.5	7.5		V_{GS} = 5V, I_D = 0.2A (Note 1)
10		$r_{DS(on)}$ Drain-Source ON Resistance		3.0	5.0		3.0	7.5	ohms	V_{GS} = 10V, I_D = 0.5A (Note 1)
11				4.7	9.0		4.7	13.5		T_A=+125°C
12		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		
14	DYNAMIC	C_{rss} Common-Source Reverse Transfer Capacitance		1.3	5.0		1.3	5.0	pF	V_{DS} = 15V, V_{GS} = 0 f = 1MHz
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