



VN10KN

N-CHANNEL ENHANCEMENT-MODE D-MOS POWER FETs

ORDERING INFORMATION

TO-92 Plastic Package	VN10KN3
Description	60V, 5 ohm

FEATURES

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

APPLICATIONS

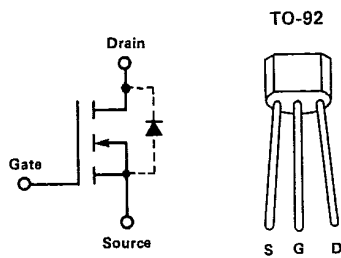
- High-Speed Pulse Amplifiers
- Logic Buffers
- Line Drivers
- Solid-State Relays
- Motor Controls
- Power Supplies

ABSOLUTE MAXIMUM RATINGS ($T_A = +25^\circ C$ unless otherwise noted)

Drain-Source Voltage	+60V	
Drain-Gate Voltage ($V_{GS} = 0$)	+60V	
Gate-Source Voltage	$\pm 30V$	
Continuous Drain Current	$T_A = 25^\circ C$.24A	$T_C = 25^\circ C$.32A
Peak Pulsed Drain Current	1.0A	

Continuous Device Dissipation	$T_A = +25^\circ C$ 0.30	$T_C = +25^\circ C$ 1.0	W
Linear Derating Factor	$T_A = +25^\circ C$ 2.4	$T_C = +25^\circ C$ 8.0	mW/ $^\circ C$
Operating Junction Temperature Range	-55 to +150 $^\circ C$		
Storage Temperature Range	-55 to +150 $^\circ C$		
Lead Temperature (1/16" from mounting surface for 30 Sec)	+260 $^\circ C$		

SCHEMATIC DIAGRAM/PACKAGE



PACKAGE DIMENSIONS (TO-92) TO-226AA (See Package 5)



VN10KN

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

#	CHARACTERISTIC	VN10KN			UNIT	TEST CONDITIONS
		MIN	TYP	MAX		
1	BV _{DSS} Drain-Source Breakdown Voltage	60	100		V	I _D = 100μA, V _{GS} = 0
2	V _{GS(th)} Gate-Source Threshold Voltage	0.8	1.9	2.5	V	I _D = 1.0mA, V _{DS} = V _{GS}
3	I _{GSS} Gate-Body Leakage Current		±1.0	±100	nA	V _{GS} = ±15V, V _{DS} = 0
4	I _{DSS} Drain-Source OFF Leakage Current		0.1	10	μA	V _{DS} = 40V, V _{GS} = 0
5			5.0	500		T _A = 125°C
6	I _{D(on)} ON Drain Current	0.25			A	V _{GS} = 5V, V _{DS} = 10V
7		0.75				V _{GS} = 10V (Note 1)
8	V _{DS(on)} Drain-Source ON Voltage		1.5	2.5	V	V _{GS} = 10V, I _D = 0.5A (Note 1)
9			3.0	5.0	ohms	V _{GS} = 10V, I _D = 0.5A (Note 1)
10	r _{DS(on)} Drain-Source ON Resistance		4.7	9.0		T _A = +125°C
11	g _{fs} Common-Source Forward Transcond.	100	400		mmhos	V _{DS} = 10V, I _D = 0.5A f = 1KHz (Note 1)
12	C _{iss} Common-Source Input Capacitance		80	100		
13	C _{ras} Common-Source Reverse Transfer Capacitance		1.3	5.0	pF	V _{DS} = 15V, V _{GS} = 0 f = 1MHz
14	C _{oss} Common-Source Output Capacitance		10.5	25		
15	t _{on} Turn-On Time		5.0	10	nSec	V _{DD} = V _{G(on)} = 10V
16	t _{off} Turn-Off Time		6.0	10		R _G = 25Ω, R _L = 25Ω

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