New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

VN0104N2 – VN0109ND

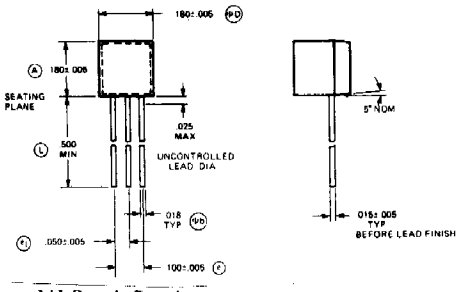
N-Channel Enhancement-Mode Vertical DMOS Power FET's

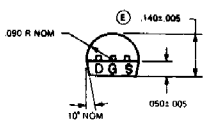
Product Summary

BVDSS / BVDGS	RDS(ON) (max)	ID(ON) (min)	Order Number/Package						
			TO-39	TO-92	TO-52	TO-220	Quad P-DIP	Quad C-DIP	Dice
40V	3Ω	2.0A	VN0104N2	VN0104N3	VN0104N9	VN0104N5	VN0104N6	VN0104N7	VN0104ND
60V	3Ω	2.0A	VN0106N2	VN0106N3	VN0106N9	VN0106N5	VN0106N6	VN0106N7	VN0106ND
90V	3Ω	2.0A	VN0109N2	VN0109N3	VN0109N9	VN0109N5	—	—	VN0109ND

Electrical Characteristics (@ 25°C unless otherwise specified)

Symbol	Parameter		Min	Typ	Max	Unit	Conditions
BVDSS	Drain-to-Source Breakdown Voltage	VN0109	90			V	ID = 1mA, VGS = 0
		VN0106	60				
		VN0104	40				
VGS(th)	Gate Threshold Voltage		0.8		2.4	V	VGS = VDS, ID = 1mA
ΔVGS(th)	Change in VGS(th) with Temperature			–3.8	–5.5	mV/°C	ID = 1mA, VGS = VDS
IGSS	Gate Body Leakage			0.1	100	nA	VGS = ±20V, VDS = 0
IDSS	Zero Gate Voltage Drain Current				1	uA	VGS = 0, VDS = Max Rating
					100		VGS = 0, VDS = 0.8 Max Rating, TA = 125°C
ID(ON)	ON-State Drain Current		0.75	1.0		A	VGS = 5V, VDS = 25V
			2	2.50			VGS = 10V, VDS = 25V
RDS(ON)	Static Drain-to-Source ON-State Resistance		3	4.50	5	Ω	VGS = 5V, ID = 250mA
			2.3	2	3		VGS = 10V, ID = 1A
ΔRDS(ON)	Change in RDS(ON) with Temperature			0.70	1	%/°C	ID = 1A, VGS = 10V
GFS	Forward Transconductance		300	400		m℧	VDS = 25V, ID = 0.5A
CISS	Input Capacitance			45	60	pF	VGS = 0, VDS = 25V, f = 1MHz
COSS	Common Source Output Capacitance			20	25		
CRSS	Reverse Transfer Capacitance			2	5		
td(ON)	Turn-ON Delay Time			3	5	ns	VDD = 25V, ID = 1A, RS = RL = 50Ω
tr	Rise Time			5	8		
td(OFF)	Turn-OFF Delay Time			6	9		
tf	Fall Time			5	8		
VSD	Diode Forward Voltage Drop			1.2	1.8	V	ISD = 2.5A, VGS = 0
trr	Reverse Recovery Time			400		ns	ISD = 1A, VGS = 0





TO-92 Plastic Package
3-Lead

Quality Semi-Conductors