



# VNN3NV04 / VNS3NV04 VND3NV04 / VND3NV04-1

## “OMNIFET II”: FULLY AUTOPROTECTED POWER MOSFET

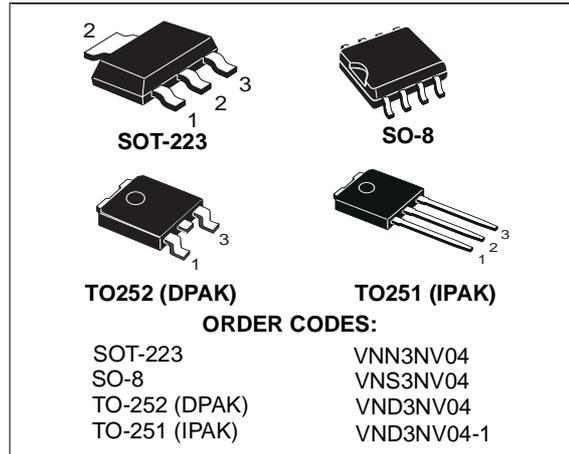
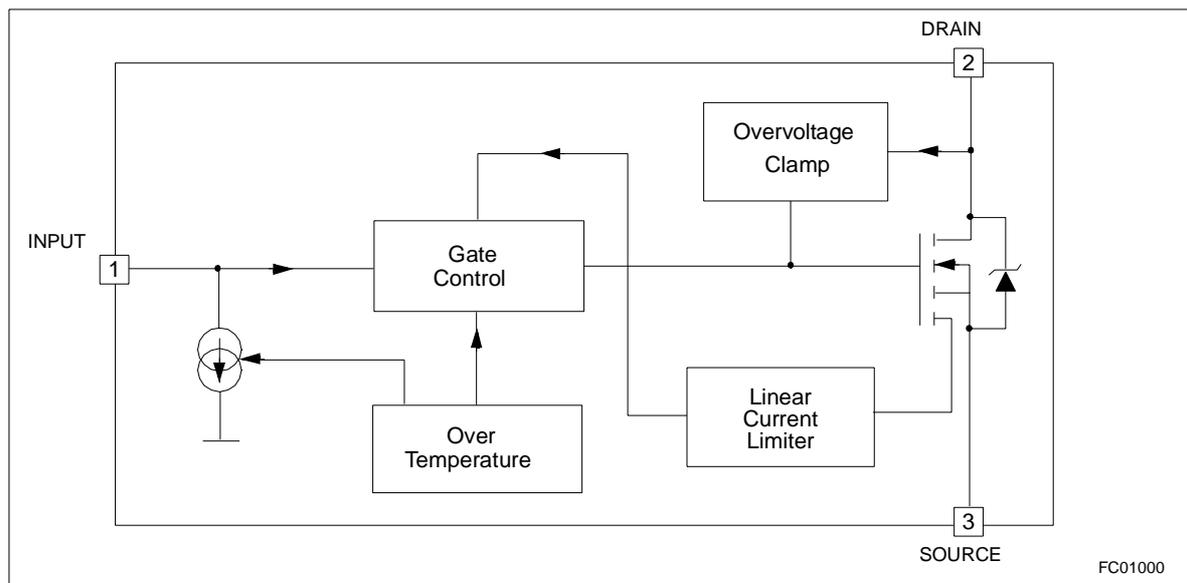
TYPE	$R_{DS(on)}$	$I_{lim}$	$V_{clamp}$
VNN3NV04	120 mΩ	3.5 A	40 V
VNS3NV04			
VND3NV04			
VND3NV04-1			

- LINEAR CURRENT LIMITATION
- THERMAL SHUT DOWN
- SHORT CIRCUIT PROTECTION
- INTEGRATED CLAMP
- LOW CURRENT DRAWN FROM INPUT PIN
- DIAGNOSTIC FEEDBACK THROUGH INPUT PIN
- ESD PROTECTION
- DIRECT ACCESS TO THE GATE OF THE POWER MOSFET (ANALOG DRIVING)
- COMPATIBLE WITH STANDARD POWER MOSFET

### DESCRIPTION

The VNN3NV04, VNS3NV04, VND3NV04 VND3NV04-1, are monolithic devices designed in STMicroelectronics VIPower M0-3 Technology,

### BLOCK DIAGRAM



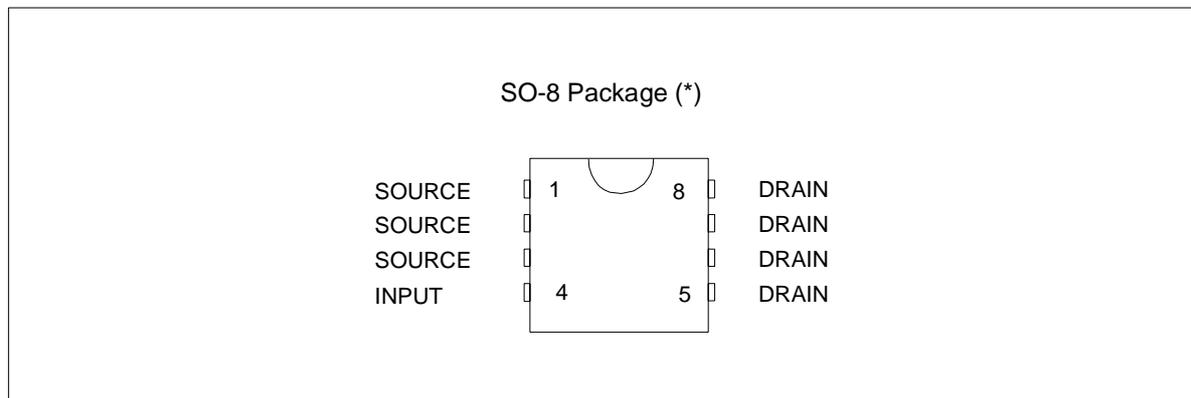
intended for replacement of standard Power MOSFETS from DC up to 50KHz applications. Built in thermal shutdown, linear current limitation and overvoltage clamp protect the chip in harsh environments.

Fault feedback can be detected by monitoring the voltage at the input pin.

**ABSOLUTE MAXIMUM RATING**

Symbol	Parameter	Value			Unit
		SOT-223	SO-8	DPAK/IPAK	
$V_{DS}$	Drain-source Voltage ( $V_{IN}=0V$ )	Internally Clamped			V
$V_{IN}$	Input Voltage	Internally Clamped			V
$I_{IN}$	Input Current	+/-20			mA
$R_{IN\ MIN}$	Minimum Input Series Impedance	220			$\Omega$
$I_D$	Drain Current	Internally Limited			A
$I_R$	Reverse DC Output Current	-5.5			A
$V_{ESD1}$	Electrostatic Discharge (R=1.5K $\Omega$ , C=100pF)	4000			V
$V_{ESD2}$	Electrostatic Discharge on output pin only (R=330 $\Omega$ , C=150pF)	16500			V
$P_{tot}$	Total Dissipation at $T_c=25^\circ C$	7	8.3	35	W
$T_j$	Operating Junction Temperature	Internally limited			$^\circ C$
$T_c$	Case Operating Temperature	Internally limited			$^\circ C$
$T_{stg}$	Storage Temperature	-55 to 150			$^\circ C$

**CONNECTION DIAGRAM (TOP VIEW)**



(\*) For the pins configuration related to SOT-223, DPAK, IPAK see outlines at page 1.

**CURRENT AND VOLTAGE CONVENTIONS**

