

VN2222 Series N-Channel Enhancement-Mode MOS Transistors



VN2222 Series

FEATURES

- Low $r_{DS(on)}$ <7.5 Ω

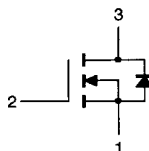
APPLICATIONS

- Switching
- Amplification

ORDERING INFORMATION

Part	Package	Temperature Range
VN2222LL	Plastic TO-92	-55°C to +150°C
VN2222LM	Plastic TO-237	-55°C to +150°C
For sorted chips in carriers see 2N7000		

PIN CONNECTIONS



CD5



TO-92
(TO-226AA)

BOTTOM VIEW



1. SOURCE
2. GATE
3. DRAIN



TO-237

BOTTOM VIEW



1. SOURCE
2. GATE
3. TAB-DRAIN

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

SYMBOL	PARAMETERS/TEST CONDITIONS	LIMITS		UNITS
		VN2222LL	VN2222LM	
V_{DS}	Drain-Source Voltage	60	60	V
V_{GS}	Gate-Source Voltage	± 30	± 30	V
I_D	Continuous Drain Current	$T_A = 25^\circ\text{C}$	0.23	A
		$T_A = 100^\circ\text{C}$	0.14	
I_{DM}	Pulsed Drain Current ¹	1	1	A
P_D	Power Dissipation	$T_A = 25^\circ\text{C}$	0.8	W
		$T_A = 100^\circ\text{C}$	0.32	
T_J, T_{stg}	Operating Junction & Storage Temperature Range	-55 to 150		$^\circ\text{C}$
T_L	Lead Temperature (1/16" from case for 10 sec.)	300		$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

SYMBOL	THERMAL RESISTANCE	LIMITS		UNITS
		VN2222LL	VN2222LM	
$R_{\theta JA}$	Junction-to-Ambient	156	125	K/W

¹Pulse width limited by maximum junction temperature.

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SPECIFICATIONS ^a		LIMITS					
SYMBOL	PARAMETER	TYP ^b	MIN	MAX	UNIT	TEST CONDITIONS	
STATIC							
V _{(BR)DSS}	Drain-Source Breakdown Voltage	70	60		V	I _D = 100μA, V _{GS} = 0V	
V _{GS(th)}	Gate-Threshold Voltage	2.3	0.6	2.5		V _{DS} = V _{GS} , I _D = 1mA	
I _{GSS}	Gate-Body Leakage			±100	nA	V _{GS} = ±20V, V _{DS} = 0V	
I _{DSS}	Zero Gate Voltage Drain Current			10	μA	V _{DS} = 48V, V _{GS} = 0V	
				500		T _J = 125°C	
I _{D(ON)}	On-State Drain Current ^c	1000	750		mA	V _{DS} = 10V, V _{GS} = 10V	
r _{DS(ON)}	Drain-Source On-Resistance ^c	5		7.5	Ω	V _{GS} = 5V, I _D = 0.2A	
		2.5		7.5		V _{GS} = 10V, I _D = 0.5A	
		4.4		13.5		T _J = 125°C	
g _{FS}	Forward Transconductance ^c	230	100		mS	V _{DS} = 10V, I _D = 0.5A	
g _{OS}	Common Source Output Conductance ^c	1200			μS	V _{DS} = 10V, I _D = 0.2A	
DYNAMIC							
C _{iss}	Input Capacitance	16		60	pF	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	
C _{oss}	Output Capacitance	11		25			
C _{rss}	Reverse Transfer Capacitance	2		5			
SWITCHING							
t _{ON}	Turn-On Time	7		10	ns	V _{DD} = 15V, R _L = 23Ω, I _D = 0.6A V _{GEN} = 10V, R _G = 25Ω	
t _{OFF}	Turn-Off Time	7		10		(Switching time is essentially independent of operating temperature)	

Notes:

- $T_A = 25^\circ C$ unless otherwise noted.
- For design aid only, not subject to production testing.
- Pulse test; $PW = \leq 300\mu S$, duty cycle $\leq 2\%$.

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