VN2222KM, VN2222L

N-Channel Enhancement-Mode MOS Transistors

PRODUCT SUMMARY

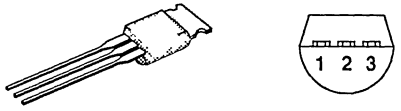
PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN2222KM	60	7.5	0.25	TO-237
VN2222L	60	7.5	0.23	TO-92

Performance Curves: **VNDP06** (See Section 7)

TO-92 BOTTOM VIEW

1 SOURCE
2 GATE
3 DRAIN

TO-237 BOTTOM VIEW



1 SOURCE
2 GATE
3 DRAIN

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	VN2222KM	VN2222L	UNITS
Drain-Source Voltage		V_{DS}	60	60	V
Gate-Source Voltage[2]		V_{GS}	+15, −0.3	+15, −0.3	V
Continuous Drain Current	T_A = 25°C	I_D	0.25	0.23	A
	T_A = 100°C		0.16	0.14	A
Pulsed Drain Current[1]		I_{DM}	1	1	A
Power Dissipation	T_A = 25°C	P_D	1	0.8	W
	T_A = 100°C		0.4	0.32	W
Operating Junction and Storage Temperature		T_j, T_{stg}	−55 to 150		°C
Lead Temperature (1/16" from case for 10 seconds)		T_L	300		°C

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VN2222KM	VN2222L	UNITS
Junction-to-Ambient	R_{thJA}	125	156	°C/W

[1] Pulse width limited by maximum junction temperature
[2] Features internal gate-source zener diode

ELECTRICAL CHARACTERISTICS[1]			LIMITS			
				VN2222		
PARAMETER	SYMBOL	TEST CONDITIONS	TYP[2]	MIN	MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 100 µA	120	60		V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 1 mA	1.3	0.6	2.5	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0 V, V_{GS} = 15 V	1		100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 48 V, V_{GS} = 0 V	0.7		10	µA
		V_{DS} = 48 V, V_{GS} = 0 V, T_J = 125°C	3		500	µA
On-State Drain Current[3]	$I_{D(ON)}$	V_{DS} = 10 V, V_{GS} = 10 V	1000	750		mA
Drain-Source On-Resistance[3]	$r_{DS(ON)}$	V_{GS} = 5 V, I_D = 0.2 A	4		7.5	Ω
		V_{GS} = 10 V, I_D = 0.5 A	3		7.5	Ω
		V_{GS} = 10 V, I_D = 0.5 A, T_J = 125°C	5.6		13.5	Ω
Forward Transconductance[3]	g_{FS}	V_{DS} = 10 V, I_D = 0.5 A	300	100		mS
Common Source Output Conductance[3]	g_{OS}	V_{DS} = 7.5 V, I_D = 50 mA	200			µS
DYNAMIC						
Input Capacitance	C_{iss}	V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz	38		60	pF
Output Capacitance	C_{oss}		16		25	pF
Reverse Transfer Capacitance	C_{rss}		2		5	pF
SWITCHING						
Turn-On Time	t_{ON}	V_{DD} = 15 V, R_L = 23 Ω, I_D = 0.6 A, V_{GEN} = 10 V, R_G = 25 Ω (Switching time is essentially independent of operating temperature)	7		10	ns
Turn-Off Time	t_{OFF}		9		10	ns

NOTES: 1. T_A = 25 °C unless otherwise noted.
2. For design aid only, not subject to production testing.
3. Pulse test; PW = 300 µs, duty cycle ≤ 2%