VN0808 SERIES

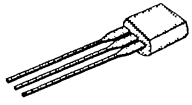
N-Channel Enhancement-Mode MOS Transistors

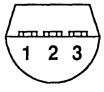
PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN0808L	80	4	0.30	TO-92
VN0808M	80	4	0.33	TO-237

Performance Curves: **VNDQ09** (See Section 7)

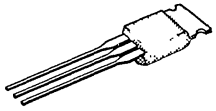
TO-92 BOTTOM VIEW

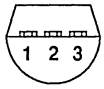




1 SOURCE
2 GATE
3 DRAIN

TO-237 BOTTOM VIEW





1 SOURCE
2 GATE
3 DRAIN

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

PARAMETERS/TEST CONDITIONS		SYMBOL	VN0808L	VN0808M	UNITS
Drain-Source Voltage		V_{DS}	80	80	V
Gate-Source Voltage		V_{GS}	±30	±30	
Continuous Drain Current [2]	T_A = 25°C	I_D	0.30	0.33	A
	T_A = 100°C		0.19	0.21	
Pulsed Drain Current [1, 2]		I_{DM}	1.9	1.9	
Power Dissipation	T_A = 25°C	P_D	0.8	1	W
	T_A = 100°C		0.32	0.4	
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		

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VN0808L	VN0808M	UNITS
Junction-to-Ambient	R_{thJA}	156	125	°C/W

[1] Pulse width limited by maximum junction temperature
[2] This parameter has been revised from previous datasheet

ELECTRICAL CHARACTERISTICS[1]			LIMITS			
				VN0808		
PARAMETER	SYMBOL	TEST CONDITIONS	TYP[2]	MIN	MAX	UNIT
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V, I_D = 10 µA	120	80		V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 1 mA	1.6	0.8	2	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} = 80 V, V_{GS} = 0 V	0.03		10	µA
		V_{DS} = 80 V, V_{GS} = 0 V, T_J = 125°C	0.3		500	µA
On-State Drain Current[3]	$I_{D(ON)}$	V_{DS} = 10 V, V_{GS} = 10 V	1.8	1.5		A
Drain-Source On-Resistance[3]	$r_{DS(ON)}$	V_{GS} = 5 V, I_D = 0.3 A	4.2			Ω
		V_{GS} = 10 V, I_D = 1 A	3.6		4	Ω
		V_{GS} = 10 V, I_D = 1 A, [4]T_J = 125°C	6.8		8	Ω
Forward Transconductance[3]	g_{FS}	V_{DS} = 10 V, I_D = 0.5 A	350	170		mS
Common Source Output Conductance[3]	g_{OS}	V_{DS} = 10 V, I_D = 0.1 A	225			µS
DYNAMIC						
Input Capacitance	C_{iss}	V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz	35		50	pF
Output Capacitance	C_{oss}		15		40	pF
Reverse Transfer Capacitance	C_{rss}		2		10	pF
SWITCHING						
Turn-On Time	t_{ON}	V_{DD} = 25 V, R_L = 23 Ω, I_D = 1 A, V_{GEN} = 10 V, R_G = 25 Ω (Switching time is essentially independent of operating temperature)	6		10	ns
Turn-Off Time	t_{OFF}		8		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%.
4. This parameter has been revised from previous datasheet.