

VN66 SERIES

N-Channel Enhancement-Mode MOS Transistors

PRODUCT SUMMARY

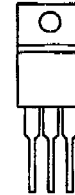
PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN66AD	60	3	1.7	TO-220
VN66AFD	60	3	1.46	TO-220SD

Performance Curves: VNDQ06 (See Section 7)

TO-220/TO-220SD



TOP VIEW



1 2 3

TO-220

1 GATE
2 & TAB - DRAIN
3 SOURCE

TO-220SD

1 SOURCE
2 GATE
3 & TAB - DRAIN

ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)²

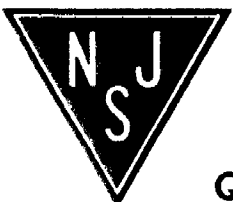
PARAMETERS/TEST CONDITIONS		SYMBOL	VN66AD	VN66AFD	UNITS
Drain-Source Voltage		V _{DS}	60	60	V
Gate-Source Voltage		V _{GS}	±30	±30	
Continuous Drain Current	T _C = 25°C	I _D	1.7	1.46	A
	T _C = 100°C		1	0.92	
Pulsed Drain Current ¹		I _{DM}	3	3	
Power Dissipation	T _C = 25°C	P _D	20	15	W
	T _C = 100°C		8	6	
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	VN66AD	VN66AFD	UNITS
Junction-to-Case	R_{thJC}	6.25	8.3	$^\circ\text{C/W}$

¹Pulse width limited by maximum junction temperature.

²Absolute maximum ratings have been revised.



NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

VN66 SERIES

ELECTRICAL CHARACTERISTICS ¹				LIMITS		
PARAMETER	SYMBOL	TEST CONDITIONS ⁴	TYP ²	VN66 ⁴		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 10 μA	70	60		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1 mA	1.5	0.8	2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±30 V T _O = 125°C	± 1 ± 5		±100 ± 500	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{GS} = 0 V V _{DS} = 48 V T _O = 125°C	0.05 0.3		1 10	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	1.8		5	Ω
		V _{GS} = 10 V I _D = 1 A	1.3		3	
		T _O = 125°C	2.6		6	
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} = 7.5 V, I _D = 0.1 A	1100			μS
DYNAMIC						
Input Capacitance	C _{iss}	V _{DS} = 25 V V _{GS} = 0 V f = 1 MHz	35		50	pF
Output Capacitance	C _{oss}		25		40	
Reverse Transfer Capacitance	C _{rss}		5		10	
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)	8		15	ns
Turn-Off Time	t _{OFF}		9.5		15	

- NOTES: 1. $T_O = 25^\circ\text{C}$ unless otherwise noted.
2. For design aid only, not subject to production testing.
3. Pulse test: $PW = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.
4. Data sheet limits and/or test conditions have been revised.