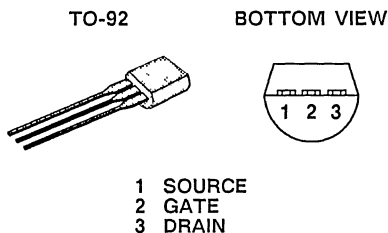


PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN2010L	200	10	0.19	TO-92
VN2020L	200	20	0.08	TO-92



Performance Curves: **VNDQ20** (See Section 7)

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

PARAMETERS/TEST CONDITIONS		SYMBOL	VN2010L	VN2020L	UNITS
Drain-Source Voltage		V _{DS}	200	200	V
Gate-Source Voltage		V _{GS}	±30	±30	
Continuous Drain Current	T _A = 25°C	I _D	0.19	0.08	A
	T _A = 100°C		0.12	0.055	
Pulsed Drain Current ¹		I _{DM}	0.8	0.5	
Power Dissipation	T _A = 25°C	P _D	0.8	0.8	W
	T _A = 100°C		0.32	0.32	
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	VN2010L	VN2020L	UNITS
Junction-to-Ambient	R_{thJA}	156	156	$^\circ\text{C/W}$

¹Pulse width limited by maximum junction temperature

VN2010 SERIES



ELECTRICAL CHARACTERISTICS ¹				LIMITS				
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VN2010L		VN2020L		UNIT
				MIN	MAX	MIN	MAX	
STATIC								
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 100 μA	220	200		200		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1 mA	1.3	0.8	1.8	0.8	2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±20 V T _J = 125°C	± 1 ± 5		± 10		± 10	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 160 V V _{GS} = 0 V T _J = 125°C	0.001 1		1 100		1 100	μA
On-State Drain Current ³	I _{D(ON)}	V _{DS} = 10 V, V _{GS} = 10 V	700	100		100		mA
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = 4.5 V I _D = 50 mA T _J = 125°C	7		10		20	Ω
			12.5		20		40	
Forward Transconductance ³	g _{FS}	V _{DS} = 15 V, I _D = 100 mA	180	125		125		mS
Common Source Output Conductance ³	g _{OS}	V _{DS} = 15 V, I _D = 50 mA	150					μS
DYNAMIC								
Input Capacitance	C _{iss}	V _{DS} = 25 V V _{GS} = 0 V f = 1 MHz	35		60		60	pF
Output Capacitance	C _{oss}		9		30		30	
Reverse Transfer Capacitance	C _{rss}		1		15		15	
SWITCHING ⁴								
Turn-On Time	t _{ON}	V _{DD} = 25 V, R _L = 250 Ω I _D = 100 mA, V _{GEN} = 10 V R _G = 25 Ω	5		20		20	ns
Turn-Off Time	t _{OFF}		21		30		30	

- NOTES: 1. $T_A = 25^\circ\text{C}$ 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. Switching time is essentially independent of operating temperature.