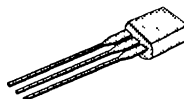


PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN1206L	120	6	0.23	TO-92
VN1206M	120	6	0.26	TO-237

TO-92



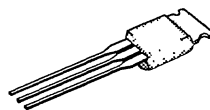
BOTTOM VIEW



1 SOURCE
2 GATE
3 DRAIN

Performance Curves: VNDQ12 (See Section 7)

TO-237



BOTTOM VIEW



1 SOURCE
2 GATE
3 & TAB - DRAIN

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

PARAMETERS/TEST CONDITIONS		SYMBOL	VN1206L	VN1206M	UNITS
Drain-Source Voltage		V _{DS}	120	120	V
Gate-Source Voltage		V _{GS}	±30	±30	
Continuous Drain Current	T _A = 25°C	I _D	0.23	0.26	A
	T _A = 100°C		0.15	0.16	
Pulsed Drain Current ¹		I _{DM}	2	2	
Power Dissipation	T _A = 25°C	P _D	0.8	1	W
	T _A = 100°C		0.32	0.40	
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	VN1206L	VN1206M	UNITS
Junction-to-Ambient	R_{thJA}	156	125	$^\circ\text{C/W}$

¹Pulse width limited by maximum junction temperature

VN1206L, VN1206M



ELECTRICAL CHARACTERISTICS ¹				LIMITS		
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VN1206		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 100 μA	145	120		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 1 mA	1.4	0.8	2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±15 V	± 1		± 100	nA
		T _J = 125°C	± 5		± 500	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 120 V V _{GS} = 0 V	0.001		10	μA
		T _J = 125°C	0.5		500	
On-State Drain Current ³	I _{D(ON)}	V _{DS} = 10 V, V _{GS} = 10 V	1.6	1		A
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = 2.5 V, I _D = 0.1 A	6		10	Ω
		V _{GS} = 10 V I _D = 0.5 A	3.4		6	
		T _J = 125°C	7		14.8	
Forward Transconductance ³	g _{FS}	V _{DS} = 10 V, I _D = 0.5 A	425	300		mS
Common Source Output Conductance ³	g _{OS}	V _{DS} = 7.5 V, I _D = 0.1 A	400			μS
DYNAMIC						
Input Capacitance	C _{iss}	V _{DS} = 25 V V _{GS} = 0 V f = 1 MHz	35		125	pF
Output Capacitance	C _{oss}		15		50	
Reverse Transfer Capacitance	C _{rss}		2		20	
Turn-On Time	t _{d(ON)}	V _{DD} = 60 V, R _L = 150 Ω I _D = 0.4 A, V _{GEN} = 10 V R _G = 25 Ω	3		8	ns
	t _r		2.5		8	
Turn-Off Time	t _{d(OFF)}	(Switching time is essentially independent of operating temperature)	7		18	
	t _f		2.5		12	

- 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 $\leq 2\%$.