Thermal Characteristics

Package	I_D (continuous)*	I_D (pulsed)	Power Dissipation @ T_C = 25°C	θ_{jc} °C/W	θ_{ja} °C/W	I_{DR}*	I_{DRM}
VN3515L (TO-92)	150mA	600mA	1W	125	170	150mA	600mA
VN4012L (TO-92)	160mA	650mA	1W	125	170	160mA	650mA

* I_D (continuous) is limited by max rated T_j.

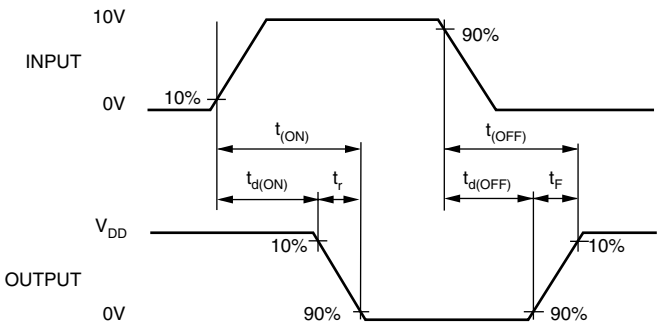
Electrical Characteristics (@ 25°C unless otherwise specified)

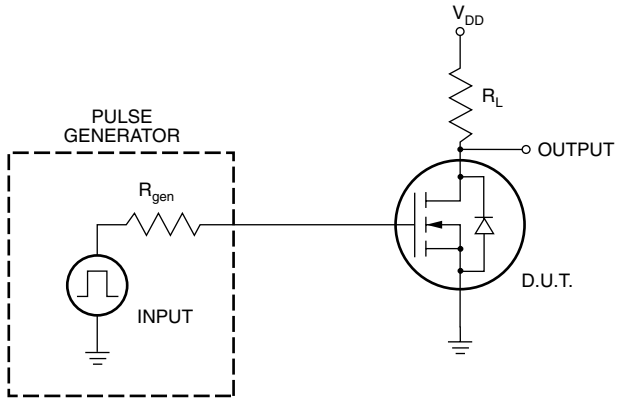
Symbol	Parameter		Min	Typ	Max	Unit	Conditions
BV_{DSS}	Drain-to-Source Breakdown Voltage	VN3515	350			V	V_{GS} = 0V, I_D = 100μA
		VN4012	400				
$V_{GS(th)}$	Gate Threshold Voltage		0.6		1.8	V	V_{GS} = V_{DS}, I_D = 1mA
I_{GSS}	Gate Body Leakage				10	nA	V_{GS} = ± 20V, V_{DS} = 0V
I_{DSS}	Zero Gate Voltage Drain Current				1	μA	V_{GS} = 0V, V_{DS} = 0.8 Max Rating
					100		V_{GS} = 0V, V_{DS} = 0.8 Max Rating T_A = 125°C
$I_{D(ON)}$	ON-State Drain Current		0.15	0.3		A	V_{DS} = 10V, V_{GS} = 4.5V
$R_{DS(ON)}$	Static Drain-to-Source ON-State Resistance	VN3515		9.5	15	Ω	V_{GS} = 4.5V, I_D = 100mA
				17	35		V_{GS} = 4.5V, I_D = 100mA, TA = 125°C
		VN4012		9.5	12		V_{GS} = 4.5V, I_D = 100mA
				17	30		V_{GS} = 4.5V, I_D = 100mA, TA = 125°C
G_{FS}	Forward Transconductance		125	350		m℧	V_{DS} =15V, I_D = 100mA
C_{ISS}	Input Capacitance				110	pF	V_{DS} = 25V, V_{GS} = 0V f = 1MHz
C_{OSS}	Common Source Output Capacitance				30		
C_{RSS}	Reverse Transfer Capacitance				10		
$t_{d(ON)}$	Turn-ON Delay Time				20	ns	V_{DD} = 25V I_D = 100mA R_{GEN} = 25Ω
t_r	Rise Time				20		
$t_{d(OFF)}$	Turn-OFF Delay Time				65		
t_f	Fall Time				65		
V_{SD}	Diode Forward Voltage Drop				1.2	V	V_{GS} = 0V, I_{SD} = 160mA

Notes:

1. All D.C. parameters 100% tested at 25°C unless otherwise stated. (Pulse test: 300μs pulse, 2% duty cycle.)
2. All A.C. parameters sample tested.
3. See TN2540 data sheet for characteristic curves.

Switching Waveforms and Test Circuit





11/12/01

1235 Bordeaux Drive, Sunnyvale, CA 94089
TEL: (408) 744-0100 • FAX: (408) 222-4895
www.supertex.com