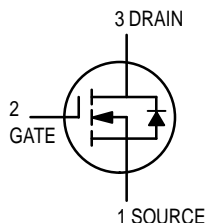
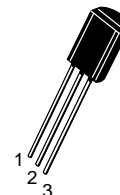


TMOS FET Transistor

N-Channel — Enhancement



VN10LM



CASE 29-05, STYLE 22
TO-92 (TO-226AE)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	Vdc
Gate-Source Voltage	V_{GS}	± 20	Vdc
— Continuous	V_{GSM}	± 40	Vpk
— Non-repetitive ($t_p \leq 50 \mu s$)			
Drain Current - Continuous ⁽¹⁾	I_D	0.3	Adc
— Pulsed ⁽²⁾	I_{DM}	1.0	
Total Device Dissipation @ $T_A = 25^\circ C$	P_D	1.0	Watts
Derate above $25^\circ C$		8.0	mW/ $^\circ C$
Operating and Storage Temperature Range	T_J, T_{stg}	-40 to +150	$^\circ C$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Drain-Source Breakdown Voltage ($V_{GS} = 0, I_D = 100 \mu A$)	$V_{(BR)DSS}$	60	—	—	Vdc
Zero-Gate-Voltage Drain Current ($V_{DS} = 45 V, V_{GS} = 0$)	I_{DSS}	—	0.1	10	μA_{dc}
Gate-Body Leakage Current ($V_{GS} = -15 V, V_{DS} = 0$)	I_{GSS}^1	—	—	100	nAdc
Gate-Body Leakage Current ($V_{GS} = 15 V, V_{DS} = 0$)	I_{GSS}^2	—	—	-100	nAdc

1. The Power Dissipation of the package may result in a lower continuous drain current.
2. Pulse Width $\leq 300 \mu s$, Duty Cycle.

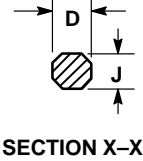
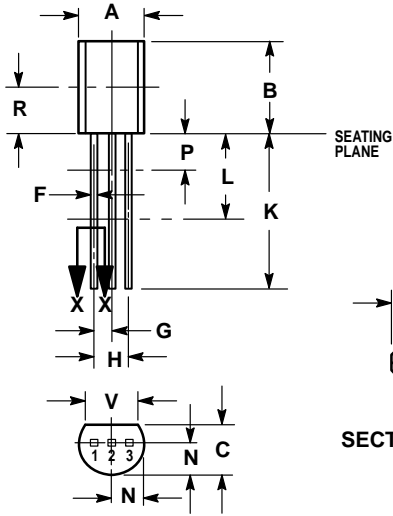
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REV 1

VN10LM**ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS					
Gate Threshold Voltage ($V_{DS} = V_{GS}$, $I_D = 1.0\text{ mA}$)	$V_{GS(th)}$	0.8	—	2.5	Vdc
On-State Drain Current ($V_{DS} = 15\text{ V}$, $V_{GS} = 10\text{ V}$)	$I_{D(on)}$	750	—	—	mA
Forward Transconductance ($V_{DS} = 15\text{ V}$, $I_D = 500\text{ mA}$)	g_{fs}	200	—	—	mmhos
Drain-Source On-Voltage ($V_{GS} = 5.0\text{ V}$, $I_D = 200\text{ mA}$)	$V_{DS(on)}^1$	—	—	1.5	Vdc
Drain-Source On-Voltage ($V_{GS} = 10\text{ V}$, $I_D = 500\text{ mA}$)	$V_{DS(on)}^2$	—	—	2.5	Vdc
Drain-Source On-Resistance ($V_{GS} = 5.0\text{ V}$, $I_D = 200\text{ mA}$)	$r_{DS(on)}^1$	—	—	7.5	Ω
Drain-Source On-Resistance ($V_{GS} = 10\text{ V}$, $I_D = 500\text{ mA}$)	$r_{DS(on)}^2$	—	—	5.0	Ω
Input Capacitance ($V_{DS} = 25\text{ V}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{iss}	—	—	60	pF
Output Capacitance ($V_{DS} = 25\text{ V}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{oss}	—	—	25	pF
Reverse Transfer Capacitance ($V_{DS} = 25\text{ V}$, $V_{GS} = 0$, $f = 1.0\text{ MHz}$)	C_{rss}	—	—	5.0	pF
Turn-On Time ($V_{DS} = 15\text{ V}$, $R_L = 23\ \Omega$, $R_G = 50\ \Omega$, $V_{in} = 20\text{ V}$)	t_{on}	—	—	10	ns
Turn-Off Time ($V_{DS} = 15\text{ V}$, $R_L = 23\ \Omega$, $R_G = 50\ \Omega$, $V_{in} = 20\text{ V}$)	t_{off}	—	—	10	ns

PACKAGE DIMENSIONS



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
 4. DIMENSION F APPLIES BETWEEN P AND L. DIMENSIONS D AND J APPLY BETWEEN L AND K MINIMUM. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.44	5.21
B	0.290	0.310	7.37	7.87
C	0.125	0.165	3.18	4.19
D	0.018	0.022	0.46	0.56
F	0.016	0.019	0.41	0.48
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.018	0.024	0.46	0.61
K	0.500	—	12.70	—
L	0.250	—	6.35	—
N	0.080	0.105	2.04	2.66
P	—	0.100	—	2.54
R	0.135	—	3.43	—
V	0.135	—	3.43	—

CASE 029-05
(TO-226AE)
ISSUE AD

- STYLE 22:
PIN 1. SOURCE
2. GATE
3. DRAIN

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