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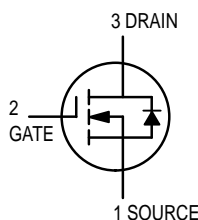
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MOTOROLA
SEMICONDUCTOR TECHNICAL DATA

 Order this document
 by VN2410L/D

TMOS FET Transistor

N-Channel — Enhancement



VN2410L


CASE 29-04, STYLE 22
TO-92 (TO-226AA)
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	240	Vdc
Drain-Gate Voltage	V_{DGR}	60	Vdc
Gate-Source Voltage	V_{GS}	± 20	Vdc
- Continuous	V_{GSM}	± 40	Vpk
- Non-repetitive ($t_p \leq 50 \mu s$)			
Continuous Drain Current	I_D	200	mAdc
Pulsed Drain Current	I_{DM}	500	mAdc
Power Dissipation @ $T_C = 25^\circ C$	P_D	350	mW
Derate above $25^\circ C$		2.8	mW/ $^\circ C$
Operating and Storage Temperature	T_J, T_{stg}	—	$^\circ C$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	312.5	$^\circ C/W$
Maximum Lead Temperature for Soldering Purposes, 1/16" from case for 10 seconds	T_L	300	$^\circ C$

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

Characteristic	Symbol	Min	Max	Unit
STATIC CHARACTERISTICS				
Drain-Source Breakdown Voltage ($V_{GS} = 0, I_D = 100 \mu A$)	$V_{(BR)DSS}$	240	—	Vdc
Zero Gate Voltage Drain Current ($V_{DS} = 120 V_{dc}, V_{GS} = 0$) ($V_{DS} = 120 V_{dc}, V_{GS} = 0, T_A = 125^\circ C$)	I_{DSS}	—	10 500	μAdc
Gate-Body Leakage ($V_{DS} = 0, V_{GS} = \pm 15 V$)	I_{GSS}	—	± 100	nAdc
Gate Threshold Voltage ($V_{DS} = V_{GS}, I_D = 1.0 mA$)	$V_{GS(th)}$	0.8	2.0	Vdc
On-State Drain Current ⁽¹⁾ ($V_{GS} = 10 V, V_{DS} \geq 2.0 V_{DS(on)}$)	$I_{D(on)}$	1.0	—	Adc
Drain-Source On Resistance ⁽¹⁾ ($V_{GS} = 2.5 V, I_D = 0.1 A$) ($V_{GS} = 10 V, I_D = 0.5 A$)	$r_{DS(on)}$	—	10 10	Ω
Forward Transconductance ⁽¹⁾ ($V_{DS} = 10 V, I_D = 0.5 A$)	g_{fs}	300	—	mS

 1. Pulse Test; Pulse Width $< 300 \mu s$, Duty Cycle $\leq 2.0\%$.

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REV 1



VN2410L

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

Characteristic	Symbol	Min	Max	Unit
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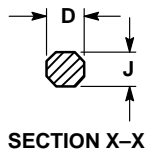
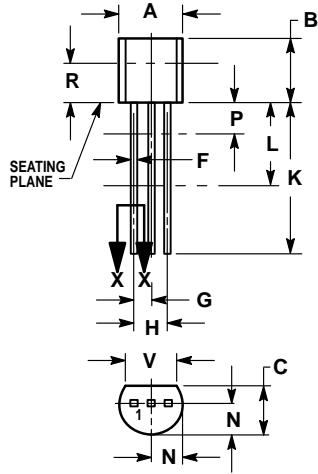
DYNAMIC CHARACTERISTICS

Input Capacitance	$(V_{DS} = 25 \text{ Vdc}, V_{GS} = 0, f = 1.0 \text{ MHz})$	C_{iss}	—	125	pF
Output Capacitance		C_{oss}	—	50	pF
Reverse Transfer Capacitance		C_{rss}	—	20	pF

SWITCHING CHARACTERISTICS

Turn-On Time	$(V_{DD} = 60 \text{ Vdc}, I_D = 0.4 \text{ A}, R_L = 150 \Omega, R_G = 25 \Omega)$	$t_{(on)}$	—	8.0	ns
		$t_{(r)}$	—	8.0	ns
Turn-Off Time		$t_{(off)}$	—	23	ns
		$t_{(f)}$	—	34	ns

PACKAGE DIMENSIONS



**CASE 029-04
(TO-226AA)
ISSUE AD**

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. DIMENSION 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	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.022	0.41	0.55
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	0.015	0.020	0.39	0.50
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	0.115	—	2.93	—
V	0.135	—	3.43	—

STYLE 22:

- PIN 1. SOURCE
2. GATE
3. DRAIN

VN2410L

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