

MAXIMUM RATINGS

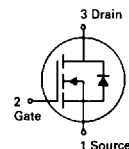
Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	170	V
Drain-Gate Voltage	V_{DGR}	60	V
Gate-Source Voltage	V_{GS}	± 20	Vdc
— Continuous	V_{GSM}	± 40	Vpk
— Non-repetitive ($t_p \leq 50 \mu s$)			
Continuous Drain Current	I_D	200	mA
Pulsed Drain Current	I_{DM}	500	mA
Power Dissipation @ $T_C = 25^\circ C$	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	$^\circ C$

VN1706L★

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



TMOS FET TRANSISTOR

N-CHANNEL — ENHANCEMENT

★ This is a Motorola
designated preferred device.

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

Characteristic	Symbol	Min	Max	Unit
STATIC CHARACTERISTICS				
Drain-Source Breakdown Voltage ($V_{GS} = 0, I_D = 100 \mu A$)	$V_{(BR)DSS}$	170	—	V
Zero Gate Voltage Drain Current ($V_{DS} = 120 V, V_{GS} = 0$) ($V_{DS} = 120 V, V_{GS} = 0, T_A = 125 ^\circ C$)	I_{DSS}	— —	10 500	μA
Gate-Body Leakage ($V_{DS} = 0, V_{GS} = \pm 15 V$)	I_{GSS}	—	± 100	nA
Gate Threshold Voltage ($V_{DS} = V_{GS}, I_D = 1.0 mA$)	$V_{GS(th)}$	0.8	2.0	V
On-State Drain Current* ($V_{GS} = 10 V, V_{DS} \geq 2.0 V_{DS(on)}$)	$I_{D(on)}$	1.0	—	A
Drain-Source On Resistance* ($V_{GS} = 2.5 V, I_D = 0.1 A$) ($V_{GS} = 10 V, I_D = 0.5 A$)	$r_{DS(on)}$	— —	10 6.0	Ω
Forward Transconductance* ($V_{DS} = 10 V, I_D = 0.5 A$)	g_{fs}	300	—	mS

DYNAMIC CHARACTERISTICS

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

SWITCHING CHARACTERISTICS

Turn-On Time	$V_{DD} = 60 V, I_D = 0.1 A$ $R_L = 150 \Omega, R_G = 25 \Omega$	$t_{(on)}$	—	8.0	ns
		t_r	—	8.0	
Turn-Off Time		$t_{(off)}$	—	18	
		t_f	—	12	

* Pulse Test; Pulse width $< 300 \mu s$, Duty Cycle $\leq 2\%$