

# MFQ107

CASE 646-05, STYLE 1

QUAD  
DUAL IN LINE  
TMOS

N-CHANNEL – ENHANCEMENT

## MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Drain-Source Voltage	V <sub>DS</sub>	200		Vdc
Drain-Gate Voltage	V <sub>DG</sub>	200		Vdc
Gate-Source Voltage	V <sub>GS</sub>	±20		Vdc
Drain Current	I <sub>D</sub>	400		mAdc
		Each Transistor	Four Transistors Equal Power	
Total Device Dissipation @ T <sub>A</sub> = 25°C(1) Derate above 25°C	P <sub>D</sub>	0.5 4.0	1.2 9.6	Watts mW/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150		°C

Refer to MFE9200 for graphs

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Drain-Source Breakdown Voltage (V <sub>GS</sub> = 0, I <sub>D</sub> = 10 μA)	V <sub>(BR)DSS</sub>	200	—	—	Vdc
Zero Gate Voltage Drain Current (V <sub>DS</sub> = 130 V, V <sub>GS</sub> = 0)	I <sub>DSS</sub>	—	0.1	10	μAdc
Gate-Body Leakage Current (V <sub>GS</sub> = 15 Vdc, V <sub>DS</sub> = 0)	I <sub>GSS</sub>	—	0.01	50	nAdc
<b>ON CHARACTERISTICS*</b>					
Gate Threshold Voltage (I <sub>D</sub> = 1.0 mA, V <sub>DS</sub> = V <sub>GS</sub> )	V <sub>GS(th)</sub>	1.0	—	4.0	Vdc
Static Drain-Source On-Resistance (V <sub>GS</sub> = 10 Vdc) (I <sub>D</sub> = 100 mA) (I <sub>D</sub> = 250 mA) (V <sub>GS</sub> = 2.6 V, I <sub>D</sub> = 20 mA)	r <sub>DS(on)</sub>	—	4.5 4.8	15 15 30	Ohms
Drain-Source On-Voltage (V <sub>GS</sub> = 10 V) (I <sub>D</sub> = 100 mA) (I <sub>D</sub> = 250 mA) (I <sub>D</sub> = 500 mA)	V <sub>DS(on)</sub>	—	0.45 1.20 3.0	1.5 3.75 —	Vdc
Forward Transconductance (V <sub>DS</sub> = 25 V, I <sub>D</sub> = 250 mA)	g <sub>fs</sub>	200	400	—	mmhos
<b>DYNAMIC CHARACTERISTICS</b>					
Input Capacitance (V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0, f = 1.0 MHz)	C <sub>iss</sub>	—	72	90	pF
Output Capacitance (V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0, f = 1.0 MHz)	C <sub>oss</sub>	—	15	20	pF
Reverse Transfer Capacitance (V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0, f = 1.0 MHz)	C <sub>rss</sub>	—	2.8	3.5	pF
<b>SWITCHING CHARACTERISTICS*</b>					
Turn-On Time See Figure 1	t <sub>on</sub>	—	6.0	15	ns
Turn-Off Time See Figure 1	t <sub>off</sub>	—	12	15	ns

\* Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

# RESISTIVE SWITCHING

FIGURE 1 — SWITCHING TEST CIRCUIT

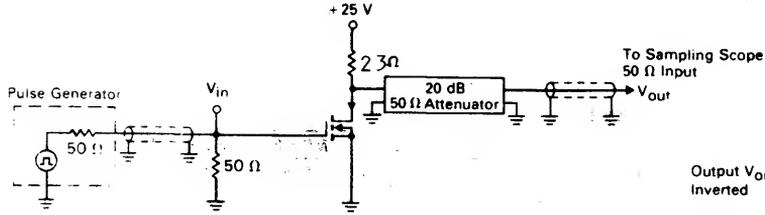


FIGURE 2 — SWITCHING WAVEFORMS

