

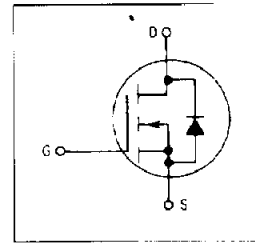
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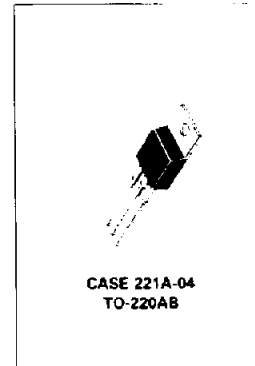
MTP8N08
MTP8N10

TMOS POWER FETs
 8 AMPERES
 $r_{DS(on)} = 0.5 \text{ OHM}$
 80 and 100 VOLTS



MAXIMUM RATINGS

Rating	Symbol	MTM or MTP		Unit
		8N08	8N10	
Drain-Source Voltage	V_{DSS}	80	100	Vdc
Drain-Gate Voltage ($R_{GS} = 1 \text{ M}\Omega$)	V_{DGR}	80	100	Vdc
Gate-Source Voltage — Continuous	V_{GS}	± 20		Vdc
— Non-repetitive ($t_p \leq 50 \mu\text{s}$)	V_{GSM}	± 40		Vpk
Drain Current Continuous	I_D	8		A dc
Pulsed	I_{DM}	20		
Total Power Dissipation for $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	75	0.6	Watts W/°C
Operating and Storage Temperature Range	T_J, T_{stg}	65 to 150		°C

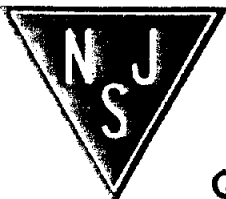


THERMAL CHARACTERISTICS

Thermal Resistance			°C/W
Junction to Case	$R_{\theta JC}$	1.67	
Junction to Ambient TO-220	$R_{\theta JA}$	62.5	
Maximum Lead Temperature for Soldering Purposes, 1/8" from case for 5 seconds	T_L	275	°C

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Quality Semi-Conductors



MTP8N08,10

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit	
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (V _{GS} = 0, I _D = 0.25 mA)	V _{(BR)DSS}	80 100	—	V _{dc}	
Zero Gate Voltage Drain Current (V _{DS} = Rated V _{DSS} , V _{GS} = 0) (V _{DS} = 0.8 Rated V _{DSS} , V _{GS} = 0, T _J = 125°C)	I _{DSS}	—	0.2 1	mAdc	
Gate-Body Leakage Current, Forward (V _{GSF} = 20 V _{dc} , V _{DS} = 0)	I _{GSSF}	—	100	nAdc	
Gate-Body Leakage Current, Reverse (V _{GSR} = 20 V _{dc} , V _{DS} = 0)	I _{GSSR}	—	100	nAdc	
ON CHARACTERISTICS*					
Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 1 mA) T _J = 100°C	V _{GS(th)}	2 1.5	4.5 4	V _{dc}	
Static Drain-Source On-Resistance (V _{GS} = 10 V _{dc} , I _D = 4 Adc)	r _{DS(on)}	—	0.5	Ohm	
Drain-Source On-Voltage (V _{GS} = 10 V) (I _D = 8 Adc) (I _D = 4 Adc, T _J = 100°C)	V _{DS(on)}	—	4.8 4	V _{dc}	
Forward Transconductance (V _{DS} = 15 V, I _D = 4 A)	g _{FS}	1.5	—	mhos	
DYNAMIC CHARACTERISTICS					
Input Capacitance	(V _{DS} = 25 V, V _{GS} = 0, f = 1 MHz) See Figure 11	C _{iss}	—	400	pF
Output Capacitance		C _{oss}	—	350	
Reverse Transfer Capacitance		C _{rss}	—	100	
SWITCHING CHARACTERISTICS* (T_J = 100°C)					
Turn-On Delay Time	(V _{DD} = 25 V, I _D = 0.5 Rated I _D R _{gen} = 50 ohms) See Figures 9, 13 and 14	t _{d(on)}	—	50	ns
Rise Time		t _r	—	120	
Turn-Off Delay Time		t _{d(off)}	—	50	
Fall Time		t _f	—	60	
Total Gate Charge	(V _{DS} = 0.8 Rated V _{DSS} , I _D = Rated I _D , V _{GS} = 10 V) See Figure 12	Q _g	13 (Typ)	30	nC
Gate-Source Charge		Q _{gs}	6 (Typ)	—	
Gate-Drain Charge		Q _{gd}	7 (Typ)	—	
SOURCE DRAIN DIODE CHARACTERISTICS*					
Forward On-Voltage	I _S = Rated I _D V _{GS} = 0)	V _{SD}	1.5 (Typ)	3	V _{dc}
Forward Turn-On Time		t _{on}	Limited by stray inductance		
Reverse Recovery Time		t _{rr}	300 (Typ)	—	ns
INTERNAL PACKAGE INDUCTANCE (TO-220)					
Internal Drain Inductance (Measured from the contact screw on tab to center of die) (Measured from the drain lead 0.25" from package to center of die)	L _d	3.5 (Typ)	—	4.5 (Typ)	nH
Internal Source Inductance (Measured from the source lead 0.25" from package to source bond pad.1)	L _s	7.5 (Typ)	—	—	

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