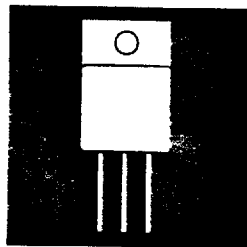


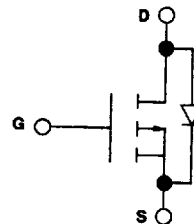
POWER MOSFET IN HERMETIC ISOLATED JEDEC TO-254 PACKAGE

T-39-21

**200V/500V, Up To 8 Amp, P-Channel MOSFET**

FEATURES

- Isolated Hermetic Metal Package
- P-Channel
- Fast Switching, Low Drive Current
- Ease of Paralleling For Added Power
- Low $R_{DS(on)}$
- Available Screened to OM803

**2**

DESCRIPTION

This series of hermetically packaged products feature the latest advanced MOSFET and packaging technology. They are ideally suited for Military requirements where small size, high performance and high reliability are required, and in applications such as switching power supplies, motor controls, inverters, choppers, audio amplifiers and high energy pulse circuits.

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless otherwise noted.)

Rating	Symbol	OM8P20A	OM2P50A	Unit
Drain-Source Voltage	V_{DS}	200	500	Vdc
Drain-Gate Voltage ($R_{GS} = 1\text{M}\Omega$)	V_{GDR}	200	500	Vdc
Gate-Source Voltage - Continuous	V_{GS}	± 20	± 20	Vdc
Non-Repetitive ($t_p \leq 50 \mu\text{s}$)	V_{GSM}	± 40	± 40	Vpk
Drain-Current - Continuous	I_D	8	2	Adc
- Pulsed	I_{DM}	30	8	
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	P_D	75	75	Watts
Derate above 25°C		.6	.6	W/ $^\circ\text{C}$
Operating and Storage Temperature Range	T_J, T_{stg}	-65 to 150	-65 to 150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Thermal Resistance - Junction-to-Case	$R_{\theta JC}$	1.67	1.67	$^\circ\text{C/W}$
- Junction-to-Ambient	$R_{\theta JA}$	30	30	
Maximum Lead Temperature for Soldering Purposes, 1/8" from case for 5 seconds.	T_L	275	275	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS: ($T_C = 25^\circ\text{C}$ unless otherwise noted.)

T-39-21

Characteristic	Symbol	Min.	Max.	Min.	Max.	Unit
OFF CHARACTERISTICS		OM8P20A		OM2P50A		
Drain-Source Breakdown Voltage ($V_{GS} = 0$, $I_D = 0.25\text{ mA}$)	$V_{(BR)DSS}$	200	-	500	-	Vdc
Zero Gate Voltage Drain Current ($V_{DS} = \text{Rated } V_{DSS}$, $V_{GS} = 0$ ($V_{DS} = \text{Rated } V_{DSS}$, $V_{GS} = 0$, $T_J = 125^\circ\text{C}$)	I_{DSS}	-	0.2 1	-	0.2 1	mAdc
Gate-Body Leakage Current, Forward ($V_{GSF} = 20\text{ Vdc}$, $V_{DS} = 0$)	I_{GSSF}	-	100	-	100	nAdc
Gate-Body Leakage Current, Reverse ($V_{GSR} = 20\text{ Vdc}$, $V_{DS} = 0$)	I_{GSR}	-	100	-	100	nAdc

ON CHARACTERISTICS*

Gate Threshold Voltage ($V_{DS} = V_{GS}$, $I_D = 1\text{ mA}$ ($T_J = 100^\circ\text{C}$)	$V_{GS(th)}$	2 1.5	4.5 4	2 1.5	4.5 4	Vdc
Static Drain-Source On-Resistance ($V_{GS} = 10\text{ Vdc}$, $I_D = 4\text{ Adc}$)	$r_{DS(on)}$	-	0.75	-	6	Ohm
Drain-Source-On-Voltage ($V_{GS} = 10\text{ V}$) ($I_D = 8\text{ Adc}$) ($I_D = 4\text{ Adc}$, $T_J = 100^\circ\text{C}$)	$V_{DS(on)}$	- -	7 6	- -	6 12	Vdc

DYNAMIC CHARACTERISTICS

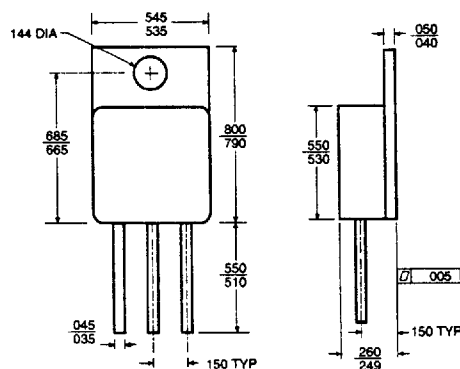
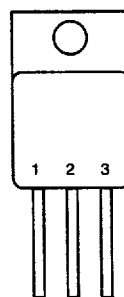
Input Capacitance	$(V_{DS} = 25\text{ V}, V_{GS} = 0$ $f = 1\text{ MHz})$	C_{iss}	-	1600	-	100	pF
Output Capacitance		C_{oss}	-	400	-	200	
Reverse Transfer Capacitance		C_{rss}	-	120	-	80	

SWITCHING CHARACTERISTICS* ($T_J = 100^\circ\text{C}$)

Turn-On Delay Time	$(V_{DD} = 100\text{ V}, I_D = 4\text{ A}$ $R_{gen} = 50\text{ Ohms})$	$t_{d(on)}$	-	40	-	50	ns
Rise Time		t_r	-	120	-	100	
Turn-Off Delay Time		$t_{d(off)}$	-	100	-	150	
Fall Time		t_f	-	80	-	50	
Total Gate Charge	$(V_{DS} = 100\text{ V}, I_D = 8\text{ A}$ $V_{GS} = 10\text{ V})$	Q_g	100 (Typ)	130	20 (Typ)	25	nC
Gate-Source Charge		Q_{gs}	50 (Typ)	-	10 (Typ)	-	
Gate-Drain Charge		Q_{gd}	49 (Typ)	-	10 (Typ)	-	

SOURCE-DRAIN DIODE CHARACTERISTICS*

Forward On-Voltage	$(I_S = 8\text{ Amp}$ $V_{GS} = 0)$	V_{SD}	-	3	1.8 (Typ.)	-	Vdc
Forward Turn-On Time		t_{on}	Limited By Stray Inductance				
Reverse Recovery Time		t_r	350 (Typ)	-	120 (Typ)	-	ns

Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$.**MECHANICAL OUTLINE****PIN CONNECTION**PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE

205 Crawford Street, Leominster, MA 01453 (508) 534-5776 FAX (508) 537-4246

2-16