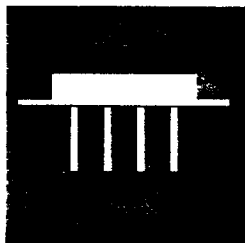


HERMETIC MOSFET POWER MODULE

OMNIREL CORP


**150 Watt Power Module, 100V Thru 500V,
N-Channel MOSFETs**

T-39-27

FEATURES

- Low EMI Power Package
- Isolated Heat Sink Design
- Individual Power MOSFETS
- Can Be Paralleled For Additional Power
- Zener Clamped Fet Gate
- High Current, High Efficiency Rectifier

DESCRIPTION

These hermetic power modules are ideally suited for many high-speed, high power switching applications such as switching power supplies and motor controls. This design utilizes two power MOSFETS with Zener clamped gates and a high current, fast recovery rectifier.

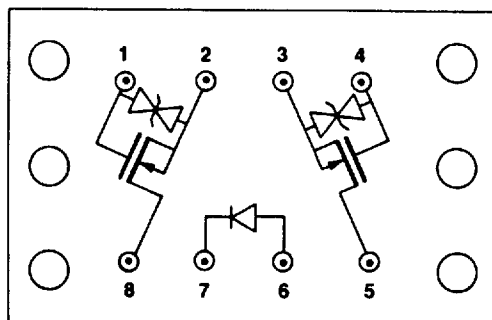
PRODUCT SUMMARY

PART NUMBER	MOSFETS			RECTIFIER		
	BV _{DSS} Volts	R _{DS(on)} Ohms	I _D @ 25°C T _C Amps	PIV Volts	I _O Amps	t _r nsec
OM 100C	100	.048	20	100	40	75
OM 200C	200	.110	20	200	40	75
OM 400C	400	.38	15	400	16	75
OM 500C	500	.48	13	500	16	75

5

CONNECTION DIAGRAM

(Bottom View)



(Pin Connections)

PIN	CONNECTION
1	Gate 1
2	Source 1
3	Source 2
4	Gate 2
5	Drain 2
6	Anode
7	Cathode
8	Drain 1

ABSOLUTE MAXIMUM RATINGS ($T_c=25^\circ\text{C}$ unless otherwise noted)
MOSFETS (Per Device)

OMNIREL CORP

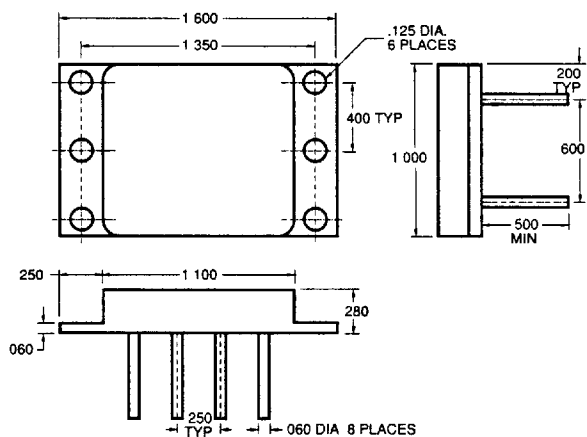
PART NUMBER	PARAMETER	Rating		Rating		Units
		OM 100C	OM 200C	OM 400C	OM 500C	
V_{DS}	Drain-Source Voltage	100	200	400	500	Volts
V_{DGS}	Drain-Gate Voltage ($R_{DS} = 1\text{ M}\Omega$)	100	200	400	500	Volts
$I_D @ T_c = 25^\circ\text{C}$	Continuous Drain Current	20	20	15	13	Amps
$I_D @ T_c = 100^\circ\text{C}$	Continuous Drain Current	20	18	9	8	Amps
I_{DM}	Pulsed Drain Current ¹	80	80	60	50	Amps
V_{GS} Clamped	Gate-Source Voltage	15	15	15	15	Volts
$P_D @ T_c = 25^\circ\text{C}$	Max. Power Dissipation	175	175	150	150	Watts
$P_D @ T_c = 100^\circ\text{C}$	Max. Power Dissipation	75	75	60	60	Watts
$R_{\theta JC}$	Thermal Resistance Junction to Case	0.8	0.8	0.8	0.8	$^\circ\text{C/Watt}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	30	30	30	30	$^\circ\text{C/Watt}$
T_J	Operating and Storage Temperature Range	-55 to +150	-55 to +150	-55 to +150	-55 to +150	$^\circ\text{C}$
T_{lead}	Lead Temperature (1/16" from case for 10 secs.)	300	300	300	300	$^\circ\text{C}$

NOTE: ¹ Pulse Test: Pulsewidth $\leq 300\mu\text{sec}$, Duty Cycle $\leq 2\%$

T-39-27

RECTIFIER (Per Device)

PART NUMBER	PARAMETER	Rating		Rating		Units
		OM 100C	OM 200C	OM 400C	OM 500C	
PIV	Peak Inverse Voltage	100	200	400	500	Volts
$V_{FM} @ 25^\circ\text{C}$	Maximum Forward Voltage ¹					Volts
OM 100/200	@ 20A	0.850	1.00			Volts
	@ 40A	0.925	1.125			Volts
$V_{FM} @ 100^\circ\text{C}$	Maximum Forward Voltage ¹					Volts
OM 100/200	@ 20A	0.725	0.875			Volts
	@ 40A	0.825	0.950			Volts
$V_{FM} @ 25^\circ\text{C}$	Maximum Forward Voltage ¹					Volts
OM 400/500	@ 8A			1.10	1.10	Volts
	@ 16A			1.30	1.30	Volts
$V_{FM} @ 100^\circ\text{C}$	Maximum Forward Voltage ¹					Volts
OM 400/500	@ 8A			1.00	1.00	Volts
	@ 16A			1.20	1.20	Volts
$I_{RM} @ 25^\circ\text{C}$	Max. Reverse Current @ 0.8 PIV	25	70	100	100	μA
$I_{RM} @ 100^\circ\text{C}$	Max. Reverse Current @ 0.8 PIV	5	10	10	10	μA
$R_{\theta JC}$	Thermal Resistance Junction to Case	1.0	1.0	1.5	1.5	$^\circ\text{C/Watt}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	30	30	30	30	$^\circ\text{C/Watt}$
t_{RRM}	Max. Reverse Recovery Time ¹	75	75	75	75	nsec

NOTE: ¹ Measured in circuit $I_F=0.5\text{A}$, $I_R=1\text{A}$, $t_{RRM}=0.25\text{A}$ **MECHANICAL OUTLINE**Unless otherwise specified, the general tolerance is ± 0.010 .

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