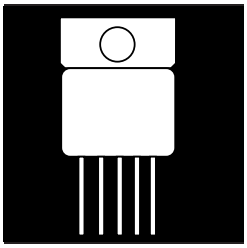
DUAL MOSFETS IN 5 PIN HERMETIC SIP PACKAGE, N & P CHANNEL



Complementary 100V N-Channel And P-Channel Power MOSFETs In 5 Pin Hermetic SIP Package

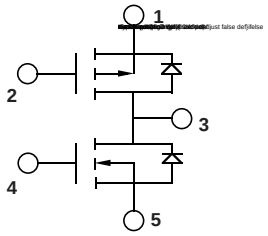
FEATURES

- Low $R_{DS(on)}$
- Fast Switching
- Easy To Heat Sink
- Small Isolated Hermetic Package
- Available Hi-Rel Screened To MIL-S-19500, TX, TXV And S Levels

DESCRIPTION

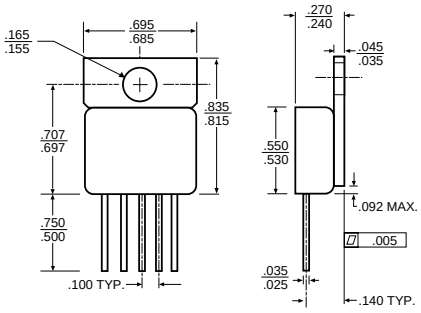
This series of hermetically packaged products feature the latest advanced MOSFET and packaging technology. They are ideally suited for Hi-Rel requirements where small size, high performance and high reliability are required, and in applications such as switching power supplies, motor controls, inverters,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

SCHEMATIC

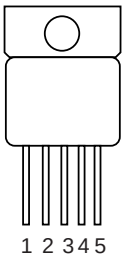


3.1

MECHANICAL OUTLINE



PIN CONNECTION



1 Pch Source
2 Pch Gate
3 Output
4 Nch Gate
5 Nch Source

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

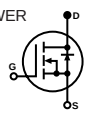
ELECTRICAL CHARACTERISTICS: T_C = 25° unless otherwise noted
STATIC N Channel (100V)

Parameter		Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	100			V	V_{GS} = 0, I_D = 250 mA
$V_{GS(th)}$	Gate-Threshold Voltage	2.0		4.0	V	V_{DS} = V_{GS}, I_D = 250 mA
I_{GSS}	Gate-Body Leakage Forward			±100	nA	V_{GS} = ± 20 V
I_{DSS}	Zero Gate Voltage Drain Current			0.25 1.0	mA mA	V_{DS} = Max. Rat., V_{GS} = 0 V_{DS} = 0.8 Max. Rat., V_{GS} = 0, T_C = 125° C
$V_{DS(on)}$	Static Drain-Source On-State Voltage[1]			1.425	V	V_{GS} = 10 V, I_D = 15 A
$R_{DS(on)}$	Static Drain-Source On-State Resistance[1]			.115		V_{GS} = 10 V, I_D = 15 A
$R_{DS(on)}$	Static Drain-Source On-State Resistance[1]			.20		V_{GS} = 10 V, I_D = 15 A, T_C = 125 C

DYNAMIC

g_{fs}	Forward Transductance[1]	10			S(M)	V_{DS} 2 $V_{DS(on)}$, I_D = 15 A
C_{iss}	Input Capacitance		1275		pF	V_{GS} = 0
C_{oss}	Output Capacitance		550		pF	V_{DS} = 25 V
C_{rss}	Reverse Transfer Capacitance		160		pF	f = 1 MHz
$T_{d(on)}$	Turn-On Delay Time		16		ns	V_{DD} = 50 V, I_D @5 A
t_r	Rise Time		19		ns	R_g = 50 W, V_{GS} =10 V
$T_{d(off)}$	Turn-Off Delay Time		42		ns	(MOSFET) switching times are essentially independent of operating temperature.
t_f	Fall Time		24		ns	

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S	Continuous Source Current (Body Diode)			- 27	A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier. 
I_{SM}	Source Current[1] (Body Diode)			- 108	A	
V_{SD}	Diode Forward Voltage[1]			- 2.0	V	T_C = 25 C, I_S = -24 A, V_{GS} = 0
t_{rr}	Reverse Recovery Time		400		ns	T_J = 150 C, I_F = I_S, dI_F/ds = 100 A/ms

1 Pulse Test: Pulse Width 300msec, Duty Cycle 2%.

For Absolute Maximum Ratings see OMY140.

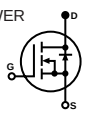
ELECTRICAL CHARACTERISTICS: T_C = 25° unless otherwise noted
STATIC P Channel (100V)

Parameter		Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS}	Drain-Source Breakdown Voltage	100			V	V_{GS} = 0, I_D = 250 mA
$V_{GS(th)}$	Gate-Threshold Voltage	2.0		4.5	V	V_{DS} = V_{GS}, I_D = 250 mA
I_{GSS}	Gate-Body Leakage Forward			±100	nA	V_{GS} = ±20 V
I_{DSS}	Zero Gate Voltage Drain Current			.01 .10	mA mA	V_{DS} = Max. Rat., V_{GS} = 0 V_{DS} = 0.8 Max. Rat., V_{GS} = 0, T_C = 125° C
$V_{DS(on)}$	Static Drain-Source On-State Voltage[1]			4.2	V	V_{GS} = 10 V, I_D = 20 A
$R_{DS(on)}$	Static Drain-Source On-State Resistance[1]			0.20		V_{GS} = 10 V, I_D = 10 A
$R_{DS(on)}$	Static Drain-Source On-State Resistance[1]			0.40		V_{GS} = 10 V, I_D = 10 A, T_C = 125 C

DYNAMIC

g_{fs}	Forward Transductance[1]	5.0			S(M)	V_{DS} 2 $V_{DS(on)}$, I_D = 10 A
C_{iss}	Input Capacitance		1700		pF	V_{GS} = 0
C_{oss}	Output Capacitance		760		pF	V_{DS} = 25 V
C_{rss}	Reverse Transfer Capacitance		320		pF	f = 1 MHz
$T_{d(on)}$	Turn-On Delay Time		36		ns	V_{DD} =25 V, I_D @ 10 A
t_r	Rise Time		160		ns	R_g =50 W, V_{GS}= 10 V
$T_{d(off)}$	Turn-Off Delay Time		120		ns	(MOSFET) switching times are essentially independent of operating temperature.
t_f	Fall Time		120		ns	

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S	Continuous Source Current (Body Diode)			20	A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier. 
I_{SM}	Source Current[1] (Body Diode)			80	A	
V_{SD}	Diode Forward Voltage[1]			4.0	V	T_C = 25 C, I_S = 20 A, V_{GS} = 0
t_{rr}	Reverse Recovery Time			4.75	ns	I_F = 20A dI_F/ds = 100 A/ms

1 Pulse Test: Pulse Width 300msec, Duty Cycle 2%.

For Absolute Maximum Ratings see OM20P10ST.