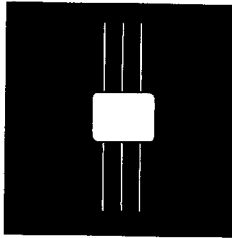


DUAL POWER MOSFETS IN HERMETIC ISOLATED DUAL IN-LINE PACKAGES



**100V Thru 500V, Dual High Current,
N-Channel MOSFETs**

FEATURES

- Two Isolated MOSFETs In A Hermetic Metal Package, Size 3 And 4 Die
- Available In A Power DIP And Surface Mount Configuration
- Fast Switching, Low Drive Current
- Ease Of Paralleling For Added Power
- Low $R_{DS(on)}$
- Available Screened To MIL-S-19500, TX, TXV And S Level

DESCRIPTION

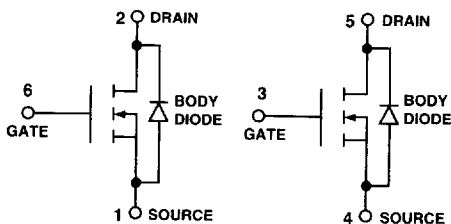
This series of hermetically packaged products feature the latest advanced MOSFET and packaging technology. They are ideally suited for Military requirements where small size, high performance and high reliability are required, and in applications such as switching power supplies, motor controls, inverters,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

MAXIMUM RATINGS (Per Transistor) @ $T_C = 25^\circ\text{C}$

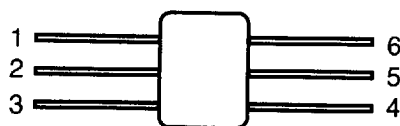
PART NUMBER	Die Size	V_{DS} (V)	$R_{DS(on)}$ (Ω)	$I_{D(MAX)}$ (A)
OM6234SD/SM	3	100	.18	14
OM6238SD/SM	4		.095	22
OM6235SD/SM	3	200	.40	9
OM6239SD/SM	4		.18	18
OM6236SD/SM	3	400	1.00	5.5
OM6240SD/SM	4		.55	10
OM6237SD/SM	3	500	1.50	4.5
OM6241SD/SM	4		.85	8

3.1

SCHEMATIC



PIN CONNECTION



6789073 0001352 425

ELECTRICAL CHARACTERISTICS: ($T_C = 25^\circ\text{C}$ unless otherwise noted)
STATIC P/N OM6234SD/SM (100V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DS} Drain-Source Breakdown Voltage	100			V	$V_{GS} = 0$, $I_D = 250\ \mu\text{A}$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0		4.0	V	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$
I_{GSS} Gate-Body Leakage			± 100	nA	$V_{GS} = \pm 20\ \text{V}$
I_{DSS} Zero Gate Voltage Drain Current		0.1	0.25	mA	$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$
		0.2	1.0	mA	$V_{DS} = 0.8\ \text{Max. Rat.}$, $V_{GS} = 0$, $T_C = 125^\circ\text{C}$
$I_{D(on)}$ On-State Drain Current ¹	14			A	$V_{DS} \geq 2\ V_{DS(on)}$, $V_{GS} = 10\ \text{V}$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹		1.2	1.44	V	$V_{GS} = 10\ \text{V}$, $I_D = 8.0\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.15	0.18	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 8.0\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹			0.31	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 8.0\ \text{A}$, $T_C = 125^\circ\text{C}$

DYNAMIC

g_{fs} Forward Transconductance ¹	4.0			$S(\text{r})$	$V_{DS} \geq 2\ V_{DS(on)}$, $I_D = 8.0\ \text{A}$
C_{iss} Input Capacitance		750		pF	$V_{GS} = 0$
C_{oss} Output Capacitance		250		pF	$V_{DS} = 25\ \text{V}$
C_{res} Reverse Transfer Capacitance		100		pF	$f = 1\ \text{MHz}$
t_{don} Turn-On Delay Time		13		ns	$V_{DS} = 30\ \text{V}$, $I_D = 8.0\ \text{A}$
t_r Rise Time		35		ns	
t_{doff} Turn-Off Delay Time		38		ns	$R_G = 7.5\ \Omega$, $V_{GS} = 10\ \text{V}$
t_f Fall Time		23		ns	(see test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)			-14	A	Modified MOSPOWER symbol showing the integral P-N junction rectifier.
I_{SM} Source Current ¹ (Body Diode)			-56	A	
V_{SD} Diode Forward Voltage ¹			-2.5	V	$T_C = 25^\circ\text{C}$, $I_S = -14\ \text{A}$, $V_{GS} = 0$
t_r Reverse Recovery Time		100		ns	$T_C = 25^\circ\text{C}$, $I_S = -12\ \text{A}$, $V_{GS} = 0$
					$T_J = 150^\circ\text{C}$, $I_F = I_S$, $dI_F/dt = 100\ \text{A}/\mu\text{s}$

1 Pulse Test: Pulse Width $\leq 300\ \mu\text{sec}$, Duty Cycle $\leq 2\%$.**ELECTRICAL CHARACTERISTICS:** ($T_C = 25^\circ\text{C}$ unless otherwise noted)
STATIC P/N OM6235SD/SM (200V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DS} Drain-Source Breakdown Voltage	200			V	$V_{GS} = 0$, $I_D = 250\ \mu\text{A}$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0		4.0	V	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$
I_{GSS} Gate-Body Leakage			± 100	nA	$V_{GS} = \pm 20\ \text{V}$
I_{DSS} Zero Gate Voltage Drain Current		0.1	0.25	mA	$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$
		0.2	1.0	mA	$V_{DS} = 0.8\ \text{Max. Rat.}$, $V_{GS} = 0$, $T_C = 125^\circ\text{C}$
$I_{D(on)}$ On-State Drain Current ¹	9.0			A	$V_{DS} \geq 2\ V_{DS(on)}$, $V_{GS} = 10\ \text{V}$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹		1.25	2.0	V	$V_{GS} = 10\ \text{V}$, $I_D = 5.0\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.25	0.4	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 5.0\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.54	0.76	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 5.0\ \text{A}$, $T_C = 125^\circ\text{C}$

DYNAMIC

g_{fs} Forward Transconductance ¹	3.0	5.8		$S(\text{r})$	$V_{DS} \geq 2\ V_{DS(on)}$, $I_D = 5.0\ \text{A}$
C_{iss} Input Capacitance		780		pF	$V_{GS} = 0$
C_{oss} Output Capacitance		150		pF	$V_{DS} = 25\ \text{V}$
C_{res} Reverse Transfer Capacitance		55		pF	$f = 1\ \text{MHz}$
t_{don} Turn-On Delay Time		9		ns	$V_{DS} = 75\ \text{V}$, $I_D = 5.0\ \text{A}$
t_r Rise Time		18		ns	
t_{doff} Turn-Off Delay Time		45		ns	$R_G = 7.5\ \Omega$, $V_{GS} = 10\ \text{V}$
t_f Fall Time		27		ns	(see test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)			-9	A	Modified MOSPOWER symbol showing the integral P-N junction rectifier.
I_{SM} Source Current ¹ (Body Diode)			-36	A	
V_{SD} Diode Forward Voltage ¹			-2	V	$T_C = 25^\circ\text{C}$, $I_S = -9.0\ \text{A}$, $V_{GS} = 0$
t_r Reverse Recovery Time		250		ns	$T_C = 25^\circ\text{C}$, $I_S = -8.0\ \text{A}$, $V_{GS} = 0$
					$T_J = 150^\circ\text{C}$, $I_F = I_S$, $dI_F/dt = 100\ \text{A}/\mu\text{s}$

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

ELECTRICAL CHARACTERISTICS: ($T_C = 25^\circ\text{C}$ unless otherwise noted)
STATIC P/N OM6236SD/SM (400V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS} Drain-Source Breakdown Voltage	400			V	$V_{GS} = 0$, $I_D = 250\ \mu\text{A}$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0	4.0		V	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$
I_{GSS} Gate-Body Leakage		± 100		nA	$V_{GS} = \pm 20\ \text{V}$
I_{DSS} Zero Gate Voltage Drain Current		0.1	0.25	mA	$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$
		0.2	1.0	mA	$V_{DS} = 0.8\ \text{Max. Rat.}$, $T_C = 125^\circ\text{C}$
$I_{D(on)}$ On-State Drain Current ¹	5.5			A	$V_{GS} \geq 2\ V_{DSS(on)}$, $V_{DS} = 10\ \text{V}$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹		2.4	3.0	V	$V_{GS} = 10\ \text{V}$, $I_D = 3.0\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.8	1.0	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 3.0\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		1.6	2.0	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 3.0\ \text{A}$, $T_C = 125^\circ\text{C}$

DYNAMIC

g_{fs} Forward Transconductance ¹	3.0	3.6		$S(\Omega)$	$V_{GS} \geq 2\ V_{DSS(on)}$, $I_D = 3.0\ \text{A}$
C_{iss} Input Capacitance		700		pF	$V_{GS} = 0$
C_{oss} Output Capacitance		70		pF	$V_{GS} = 25\ \text{V}$
C_{res} Reverse Transfer Capacitance		20		pF	$f = 1\ \text{MHz}$
t_{don} Turn-On Delay Time		18		ns	$V_{GS} = 175\ \text{V}$, $I_D = 3.0\ \text{A}$
t_r Rise Time		20		ns	$R_G = 10\ \Omega$, $R_{DS} = 10\ \Omega$
$t_{d(off)}$ Turn-Off Delay Time		40		ns	(See test circuit)
t_f Fall Time		25		ns	(See test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)			- 5.5	A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier.
I_{SM} Source Current ¹ (Body Diode)			- 22	A	
V_{SD} Diode Forward Voltage ¹			- 1.6	V	$T_C = 25^\circ\text{C}$, $I_S = -5.5\ \text{A}$, $V_{GS} = 0$
					$T_C = 25^\circ\text{C}$, $I_S = -4.5\ \text{A}$, $V_{GS} = 0$
t_r Reverse Recovery Time		470		ns	$T_J = 150^\circ\text{C}$, $I_F = I_S$, $dI_F/dt = 100\ \text{A}/\mu\text{s}$

1 Pulse Test: Pulse Width $\leq 300\ \mu\text{sec}$, Duty Cycle $\leq 2\%$.**ELECTRICAL CHARACTERISTICS:** ($T_C = 25^\circ\text{C}$ unless otherwise noted)
STATIC P/N OM6237SD/SM (500V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS} Drain-Source Breakdown Voltage	500			V	$V_{GS} = 0$, $I_D = 250\ \mu\text{A}$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0	4.0		V	$V_{DS} = V_{GS}$, $I_D = 250\ \mu\text{A}$
I_{GSS} Gate-Body Leakage		± 100		nA	$V_{GS} = \pm 20\ \text{V}$
I_{DSS} Zero Gate Voltage Drain Current		0.1	0.25	mA	$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$
		0.2	1.0	mA	$V_{DS} = 0.8\ \text{Max. Rat.}$, $T_C = 125^\circ\text{C}$
$I_{D(on)}$ On-State Drain Current ¹	4.5			A	$V_{GS} \geq 2\ V_{DSS(on)}$, $V_{DS} = 10\ \text{V}$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹		3.25	3.75	V	$V_{GS} = 10\ \text{V}$, $I_D = 2.5\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		1.3	1.5	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 2.5\ \text{A}$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		2.9	3.3	Ω	$V_{GS} = 10\ \text{V}$, $I_D = 2.5\ \text{A}$, $T_C = 125^\circ\text{C}$

DYNAMIC

g_{fs} Forward Transconductance ¹	2.5	2.8		$S(\Omega)$	$V_{GS} \geq 2\ V_{DSS(on)}$, $I_D = 2.5\ \text{A}$
C_{iss} Input Capacitance		700		pF	$V_{GS} = 0$
C_{oss} Output Capacitance		90		pF	$V_{GS} = 25\ \text{V}$
C_{res} Reverse Transfer Capacitance		30		pF	$f = 1\ \text{MHz}$
t_{don} Turn-On Delay Time		18		ns	$V_{DS} = 225\ \text{V}$, $I_D = 2.5\ \text{A}$
t_r Rise Time		20		ns	$R_G = 7.5\ \Omega$, $R_{DS} = 10\ \Omega$
$t_{d(off)}$ Turn-Off Delay Time		42		ns	(See test circuit)
t_f Fall Time		25		ns	(See test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)			- 4.5	A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier.
I_{SM} Source Current ¹ (Body Diode)			- 18	A	
V_{SD} Diode Forward Voltage ¹			- 1.4	V	$T_C = 25^\circ\text{C}$, $I_S = -4.5\ \text{A}$, $V_{GS} = 0$
					$T_C = 25^\circ\text{C}$, $I_S = -4\ \text{A}$, $V_{GS} = 0$
t_r Reverse Recovery Time		430		ns	$T_J = 150^\circ\text{C}$, $I_F = I_S$, $dI_F/dt = 100\ \text{A}/\mu\text{s}$

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

ELECTRICAL CHARACTERISTICS: $T_C = 25^\circ$ unless otherwise noted
STATIC P/N OM6238SD/SM (100V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS} Drain-Source Breakdown Voltage	100			V	$V_{GS} = 0$, $I_D = 250\ \mu A$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0		4.0	V	$V_{DS} = V_{GS}$, $I_D = 250\ \mu A$
I_{GSSF} Gate-Body Leakage Forward			100	nA	$V_{GS} = 20\ V$
I_{GSSR} Gate-Body Leakage Reverse			-100	nA	$V_{GS} = -20\ V$
I_{DSS} Zero Gate Voltage Drain	0.1	0.25	mA		$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$
Current	0.2	1.0	mA		$V_{DS} = 0.8\ \text{Max. Rat.}$, $V_{GS} = 0$, $T_C = 125^\circ\ C$
$I_{ON(on)}$ On-State Drain Current ¹	14			A	$V_{DS} \geq 2\ V_{DS(on)}$, $V_{GS} = 10\ V$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹	1.275	1.425	V		$V_{GS} = 10\ V$, $I_D = 15\ A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹	.085	.095	Ω		$V_{GS} = 10\ V$, $I_D = 15\ A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹	.130	.155	Ω		$V_{GS} = 10\ V$, $I_D = 15\ A$, $T_C = 125^\circ\ C$

DYNAMIC

g_{fs} Forward Transconductance ¹	10			$S(r)$	$V_{DS} \geq 2\ V_{DS(on)}$, $I_D = 15\ A$
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	$f = 1\ \text{MHz}$
t_{don} Turn-On Delay Time	16			ns	$V_{DD} = 30\ V$, $I_D = 5\ A$
t_r Rise Time	19			ns	
t_{doff} Turn-Off Delay Time	42			ns	$R_G = 5\ \Omega$, $R_{DS} = 10V$
t_f Fall Time	24			ns	(See test circuit)

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	$T_C = 25^\circ\ C$, $I_S = -24\ A$, $V_{GS} = 0$
t_r Reverse Recovery Time	200			ns	$T_J = 150^\circ\ C$, $I_R = I_S$, $dI_F/dt = 100\ A/\mu s$

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

ELECTRICAL CHARACTERISTICS: $T_C = 25^\circ$ unless otherwise noted
STATIC P/N OM6239SD/SM (200V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DSS} Drain-Source Breakdown Voltage	200			V	$V_{GS} = 0$, $I_D = 250\ \mu A$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0		4.0	V	$V_{DS} = V_{GS}$, $I_D = 250\ \mu A$
I_{GSSF} Gate-Body Leakage Forward			100	nA	$V_{GS} = 20\ V$
I_{GSSR} Gate-Body Leakage Reverse			-100	nA	$V_{GS} = -20\ V$
I_{DSS} Zero Gate Voltage Drain	0.1	0.25	mA		$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$
Current	0.2	1.0	mA		$V_{DS} = 0.8\ \text{Max. Rat.}$, $V_{GS} = 0$, $T_C = 125^\circ\ C$
$I_{ON(on)}$ On-State Drain Current ¹	14			A	$V_{DS} \geq 2\ V_{DS(on)}$, $V_{GS} = 10\ V$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹	1.4	1.8	V		$V_{GS} = 10\ V$, $I_D = 10\ A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹	0.14	0.18	Ω		$V_{GS} = 10\ V$, $I_D = 10\ A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹	0.28	0.36	Ω		$V_{GS} = 10\ V$, $I_D = 10\ A$, $T_C = 125^\circ\ C$

DYNAMIC

g_{fs} Forward Transconductance ¹	6.0	9.0		$S(r)$	$V_{DS} \geq 2\ V_{DS(on)}$, $I_D = 10\ A$
C_{iss} Input Capacitance		1000		pF	$V_{GS} = 0$
C_{oss} Output Capacitance		250		pF	$V_{DS} = 25\ V$
C_{rss} Reverse Transfer Capacitance		100		pF	$f = 1\ \text{MHz}$
t_{don} Turn-On Delay Time		17		ns	$V_{DD} = 75\ V$, $I_D = 18\ A$
t_r Rise Time		52		ns	
t_{doff} Turn-Off Delay Time		36		ns	$R_G = 5\ \Omega$, $R_{DS} = 10V$
t_f Fall Time		30		ns	(See test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)			-18	A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier.
I_{SM} Source Current ¹ (Body Diode)			-72	A	
V_{SD} Diode Forward Voltage ¹			-1.5	V	$T_C = 25^\circ\ C$, $I_S = -18\ A$, $V_{GS} = 0$
t_r Reverse Recovery Time		350		ns	$T_J = 150^\circ\ C$, $I_R = I_S$, $dI_F/dt = 100\ A/\mu s$

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

ELECTRICAL CHARACTERISTICS: $T_C = 25^\circ$ unless otherwise noted
STATIC P/N OM6240SD/SM (400V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DS} Drain-Source Breakdown Voltage	400			V	$V_{GS} = 0$, $I_D = 250 \mu A$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0	4.0		V	$V_{DS} = V_{GS}$, $I_D = 250 \mu A$
I_{GSSF} Gate-Body Leakage Forward		100		nA	$V_{GS} = 20 V$
I_{GSSR} Gate-Body Leakage Reverse		-100		nA	$V_{GS} = -20 V$
I_{DSS} Zero Gate Voltage Drain Current		0.1 0.2	0.25 1.0	mA	$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$, $T_C = 125^\circ C$
$I_{D(on)}$ On-State Drain Current ¹	10			A	$V_{DS} \geq 2 V_{DS(on)}$, $V_{GS} = 10 V$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹		2.35	2.75	V	$V_{GS} = 10 V$, $I_D = 5 A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.47	0.55	Ω	$V_{GS} = 10 V$, $I_D = 5 A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.93	1.10	Ω	$V_{GS} = 10 V$, $I_D = 5 A$, $T_C = 125^\circ C$

DYNAMIC

g_{fs} Forward Transconductance ¹	4.0	4.4		S(r)	$V_{DS} \geq 2 V_{DS(on)}$, $I_D = 5 A$
C_{iss} Input Capacitance		1150		pF	$V_{DS} = 0$
C_{oss} Output Capacitance		165		pF	$V_{DS} = 25 V$
C_{riss} Reverse Transfer Capacitance		70		pF	$f = 1 \text{ MHz}$
$t_{d(on)}$ Turn-On Delay Time		17		ns	$V_{DD} = 175 V$, $I_D = 5 A$
t_r Rise Time		12		ns	$R_G = 5 \Omega$, $R_{DS} = 10 V$
$t_{d(off)}$ Turn-Off Delay Time		45		ns	(See test circuit)
t_f Fall Time		30		ns	(See test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)		-10		A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier.
I_{SM} Source Current ¹ (Body Diode)		-40		A	
V_{SD} Diode Forward Voltage ¹		-2		V	$T_C = 25^\circ C$, $I_S = -10 A$, $V_{GS} = 0$
t_r Reverse Recovery Time		530		ns	$T_J = 150^\circ C$, $I_F = I_S$, $dI_F/dt = 100 A/\mu s$

1 Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$.**ELECTRICAL CHARACTERISTICS:** $T_C = 25^\circ$ unless otherwise noted
STATIC P/N OM6241SD/SM (500V)

Parameter	Min.	Typ.	Max.	Units	Test Conditions
BV_{DS} Drain-Source Breakdown Voltage	500			V	$V_{GS} = 0$, $I_D = 250 \mu A$
$V_{GS(th)}$ Gate-Threshold Voltage	2.0	4.0		V	$V_{DS} = V_{GS}$, $I_D = 250 \mu A$
I_{GSSF} Gate-Body Leakage Forward		100		nA	$V_{GS} = 20 V$
I_{GSSR} Gate-Body Leakage Reverse		-100		nA	$V_{GS} = -20 V$
I_{DSS} Zero Gate Voltage Drain Current		0.1 0.2	0.25 1.0	mA	$V_{DS} = \text{Max. Rat.}$, $V_{GS} = 0$, $V_{DS} = 0.8 \text{ Max. Rat.}$, $V_{GS} = 0$, $T_C = 125^\circ C$
$I_{D(on)}$ On-State Drain Current ¹	4.5			A	$V_{DS} \geq 2 V_{DS(on)}$, $V_{GS} = 10 V$
$V_{DS(on)}$ Static Drain-Source On-State Voltage ¹		3.2	3.4	V	$V_{GS} = 10 V$, $I_D = 4 A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		0.8	0.85	Ω	$V_{GS} = 10 V$, $I_D = 4 A$
$R_{DS(on)}$ Static Drain-Source On-State Resistance ¹		1.50	1.65	Ω	$V_{GS} = 10 V$, $I_D = 4 A$, $T_C = 125^\circ C$

DYNAMIC

g_{fs} Forward Transconductance ¹	4.0	4.8		S(r)	$V_{DS} \geq 2 V_{DS(on)}$, $I_D = 4 A$
C_{iss} Input Capacitance		1225		pF	$V_{DS} = 0$
C_{oss} Output Capacitance		200		pF	$V_{DS} = 25 V$
C_{riss} Reverse Transfer Capacitance		85		pF	$f = 1 \text{ MHz}$
$t_{d(on)}$ Turn-On Delay Time		17		ns	$V_{DD} = 200 V$, $I_D = 4 A$
t_r Rise Time		5		ns	$R_G = 5 \Omega$, $R_{DS} = 10 V$
$t_{d(off)}$ Turn-Off Delay Time		42		ns	(See test circuit)
t_f Fall Time		14		ns	(See test circuit)

BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I_S Continuous Source Current (Body Diode)		-8		A	Modified MOSPOWER symbol showing the integral P-N Junction rectifier.
I_{SM} Source Current ¹ (Body Diode)		-32		A	
V_{SD} Diode Forward Voltage ¹		-2		V	$T_C = 25^\circ C$, $I_S = -18 A$, $V_{GS} = 0$
t_r Reverse Recovery Time		700		ns	$T_J = 150^\circ C$, $I_F = I_S$, $dI_F/dt = 100 A/\mu s$

1 Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$.

3.1

ABSOLUTE MAXIMUM RATINGS Per Transistor - Size 3 (T_C = 25°C unless otherwise noted)

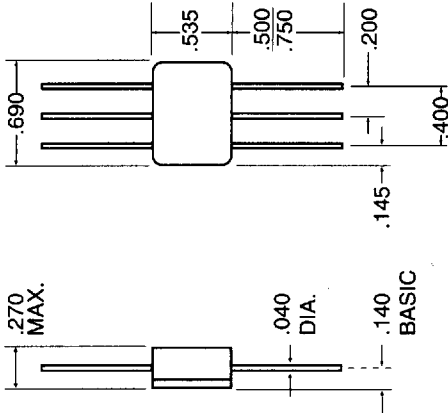
Parameter	OM6234	OM6235	OM6236	OM6237	Units
V _{DS}	100	200	400	500	V
V _{DS}	Drain-Source Voltage (P _{DS} = 1 mW)	100	200	400	V
V _{GS}	100	200	400	500	V
I _D @ T _C = 25°C	±14	±9	±5.5	±4.5	A
I _D @ T _C = 100°C	±9	±6	±3.5	±3	A
I _{SW}	56	±36	±22	±18	A
V _{GS}	?	?	?	?	V
P _D @ T _C = 25°C	50	50	50	50	W
P _D @ T _C = 100°C	25	25	25	25	W
Junction To Case	0.43	0.43	0.43	0.43	W/°C
Junction To Ambient	.015	.015	.015	.015	W/°C
T _J	Operating and Storage Temperature Range	-55 to 150	-55 to 150	-55 to 150	°C
Lead Temperature	(1/16" from case for 10 secs.)	300	300	300	°C

1 Pulse Test: Pulse width ≤ 300 μsec. Duty Cycle ≤ 2%.

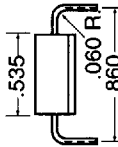
THERMAL RESISTANCE Per Transistor (Typical) at (T_A = 25°C)

$R_{\theta JC}$	Junction-to-Case	2.3	°C/W	Free Air Operation
$R_{\theta JA}$	Junction-to-Ambient	40	°C/W	Free Air Operation

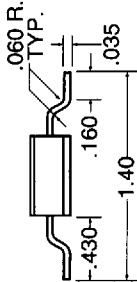
MECHANICAL OUTLINE



Power DIP



Surface Mount



ABSOLUTE MAXIMUM RATINGS Per Transistor - Size 4 (T_C = 25°C unless otherwise noted)

Parameter	OM6238	OM6239	OM6240	OM6241	Units
V _{DS}	100	200	400	500	V
V _{DS}	Drain-Source Voltage (P _{DS} = 1 mW)	100	200	400	V
V _{GS}	100	200	400	500	V
I _D @ T _C = 25°C	±14	±14	±10	±8	A
I _D @ T _C = 100°C	±14	±11	±6	±5	A
I _{SW}	±56	±56	±40	±32	A
V _{GS}	Gate-Source Voltage	±20	±20	±20	V
P _D @ T _C = 25°C	Maximum Power Dissipation	125	125	125	W
P _D @ T _C = 100°C	Maximum Power Dissipation	50	50	50	W
Junction To Case	Linear Derating Factor - Typical	1.0	1.0	1.0	W/°C
Junction To Ambient	Linear Derating Factor	.020	.020	.020	W/°C
T _J	Operating and Storage Temperature Range	-55 to 150	-55 to 150	-55 to 150	°C
Lead Temperature	(1/16" from case for 10 secs.)	300	300	300	°C

1 Pulse Test: Pulse width ≤ 300 μsec. Duty Cycle ≤ 2%.

THERMAL RESISTANCE Per Transistor (Typical) at (T_A = 25°C)

$R_{\theta JC}$	Junction-to-Case	1.00	°C/W	
$R_{\theta JA}$	Junction-to-Ambient	40	°C/W	Free Air Operation

STANDARD LEAD FORMS

ORDERING INFORMATION

Example:

OM6234	SD	M
Basic Part Number	Case Style	Screening Level
Basic Part No.	Case Style	Screening
OM6234	SD - Dual In-Line	M - 883
Through	SM - Surface Mount	(See Section 4.2)
OM6241		