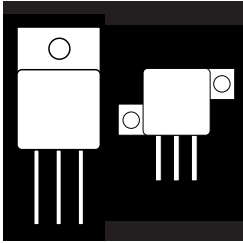


OM6025SC OM6027SC OM6031SC
OM6026SC OM6028SC OM6032SC

POWER MOSFETS IN HERMETIC ISOLATED JEDEC TO-258AA SIZE 6 DIE



**400V Thru 1000V, Up To 26 Amp N-Channel,
Size 6 MOSFETs, High Energy Capability**

FEATURES

- Isolated Hermetic Metal Package
- Size 6 Die, High Energy
- 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 Levels

DESCRIPTION

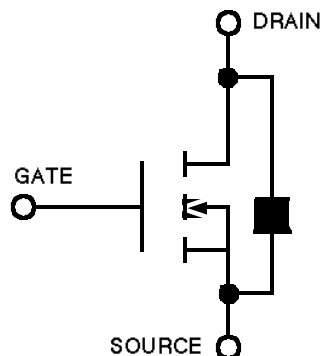
This series of hermetically packaged products feature the latest advanced MOSFET and packaging technology. They are ideally suited for Military requirements where small size, high performance and high reliability are required, and in applications such as switching power supplies, motor controls, inverters,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

MAXIMUM RATINGS

PART NUMBER	V_{DS}	$R_{DS(ON)}$	I_D (Amp)
OM6025SC/OM6032SC	400	.20	24
OM6026SC/OM6031SC	500	.27	22
OM6027SC/OM6028SC	1000	1.30	10

3.1

SCHEMATIC



OM6025SC - OM6032SC

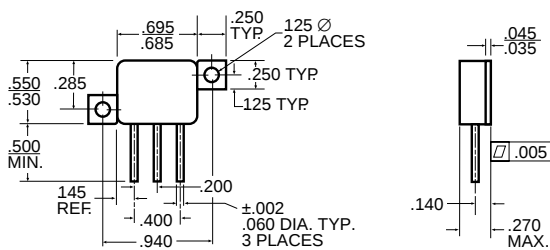
ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Parameter		OM6025SC	OM6026SC	OM6027SC	Units
		OM6032SC	OM6031SC	OM6028SC	
V _{DS}	Drain-Source Voltage	400	500	1000	V
V _{DGR}	Drain-Gate Voltage (R _{GS} = 1 M)	400	500	1000	V
I _D @ T _C = 25°C	Continuous Drain Current	24	22	10	A
I _{DM}	Pulsed Drain Current	92	85	40	A
P _D @ T _C = 25°C	Maximum Power Dissipation	165	165	165	W
	Derate Above 25°C Ambient	.025	.025	.025	W/°C
W _{DSS} (1)	Single Pulse Energy				
	Drain To Source @ 25°C	1000	1200	1000	mJ
T _J	Operating and				
T _{stg}	Storage Temperature Range	-55 to 150	-55 to 150	-55 to 150	°C
Lead Temperature	(1/8" from case for 5 secs.)	275	275	275	°C

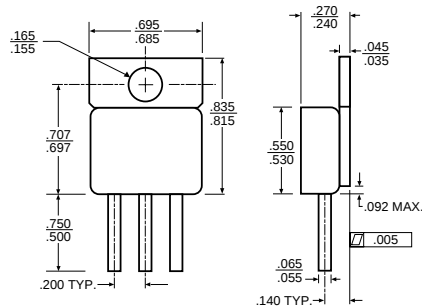
Note 1: V_{DD} = 50V, I_D = as noted

THERMAL RESISTANCE (MAXIMUM) at T _A = 25°C				
R _{thJC}	Junction-to-Case	.76	°C/W	
R _{thJA}	Junction-to-Ambient	40	°C/W	Free Air Operation
	Derate above 25°C T _C	1.32	W/°C	

MECHANICAL OUTLINES

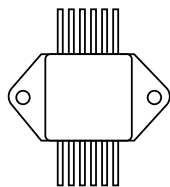


OM6028SC, OM6031SC, OM6032SC

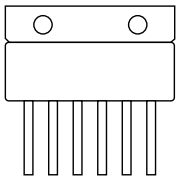


OM6025SC, OM6026SC, OM6027SC

PACKAGE OPTIONS



MOD PAK



6 PIN SIP

NOTE: MOSFETs are also available in Z-Tab, dual and quad pak styles - Please call the factory for more information.

OM6025SC - OM6032SC

ELECTRICAL CHARACTERISTICS: OM6025SC, OM6032SC (T_C = 25° unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (V _{GS} = 0, I _D = 0.25 mA)	V _{(BR)DSS}	400	-	-	Vdc
Zero Gate Voltage Drain (V _{DS} = 400 V, V _{GS} = 0) (V _{DS} = 400 V, V _{GS} = 0, T _J = 125° C)	I _{DSS}	-	-	0.25 1.0	mAdc
Gate-Body Leakage Current, Forward (V _{GSF} = 20 Vdc, V _{DS} = 0)	I _{GSSF}	-	-	100	nAdc
Gate-Body Leakage Current, Reverse (V _{GSR} = 20 Vdc, V _{DS} = 0)	I _{GSSR}	-	-	100	nAdc

ON CHARACTERISTICS*

Gate-Threshold Voltage (V _{DS} = V _{GS} , I _D = 0.25 mAdc (T _J = 125° C)	V _{GS(th)}	2.0 1.5	3.0 -	4.0 3.5	Vdc
Static Drain-Source On-Resistance (V _{GS} = 10 Vdc, I _D = 12 Adc)	r _{DS(on)}	-	-	0.20	Ohm
Drain-Source On-Voltage (V _{GS} = 10 Vdc) (I _D = 24 A) (I _D = 12 A, T _J = 125° C)	V _{DS(on)}	-	-	5.4 5.4	Vdc
Forward Transconductance (V _{DS} = 15 Vdc, I _D = 12 Adc)	g _{FS}	14	-	-	mhos

DYNAMIC CHARACTERISTICS

Input Capacitance	(V _{DS} = 25 V, V _{GS} = 0, f = 1.0 MHz)	C _{iss}	-	5600	-	pF
Output Capacitance		C _{oss}	-	78	-	
Transfer Capacitance		C _{rss}	-	230	-	

SWITCHING CHARACTERISTICS

Turn-On Delay Time	(V _{DD} = 250 V, I _D = 24 A, R _{gen} = 4.3 ohms)	t _{d(on)}	-	70	-	ns
Rise Time		t _r	-	190	-	
Turn-Off Delay Time		t _{d(off)}	-	160	-	
Fall Time		t _f	-	160	-	
Total Gate Charge	(V _{DS} = 400 V, I _D = 24 A, V _{GS} = 10 V)	Q _g	-	110	140	nC
Gate-Source Charge		Q _{gs}	-	20	-	
Gate-Drain Charge		Q _{gd}	-	55	-	

SOURCE DRAIN DIODE CHARACTERISTICS

Forward On-Voltage	(I _S = 24 A, d/dt = 100 A/μs)	V _{SD}	-	1.1	1.6	Vdc
Forward Turn-On Time		t _{on}	-	**	-	ns
Reverse Recovery Time		t _{rr}	-	500	1000	

ELECTRICAL CHARACTERISTICS: OM6026SC, OM6031SC (T_C = 25° unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (V _{GS} = 0, I _D = 0.25 mA)	V _{(BR)DSS}	500	-	-	Vdc
Zero Gate Voltage Drain (V _{DS} = 500 V, V _{GS} = 0) (V _{DS} = 500 V, V _{GS} = 0, T _J = 125° C)	I _{DSS}	-	-	0.25 1.0	mAdc
Gate-Body Leakage Current, Forward (V _{GSF} = 20 Vdc, V _{DS} = 0)	I _{GSSF}	-	-	100	nAdc
Gate-Body Leakage Current, Reverse (V _{GSR} = 20 Vdc, V _{DS} = 0)	I _{GSSR}	-	-	100	nAdc

ON CHARACTERISTICS*

Gate-Threshold Voltage (V _{DS} = V _{GS} , I _D = 0.25 mAdc (T _J = 125° C)	V _{GS(th)}	2.0 1.5	3.0 -	4.0 3.5	Vdc
Static Drain-Source On-Resistance (V _{GS} = 10 Vdc, I _D = 11 Adc)	r _{DS(on)}	-	-	0.27	Ohm
Drain-Source On-Voltage (V _{GS} = 10 Vdc) (I _D = 22 A) (I _D = 11 A, T _J = 125° C)	V _{DS(on)}	-	-	8.0 8.0	Vdc
Forward Transconductance (V _{DS} = 15 Vdc, I _D = 11 Adc)	g _{FS}	13	-	-	mhos

DYNAMIC CHARACTERISTICS

Input Capacitance	(V _{DS} = 25 V, V _{GS} = 0, f = 1.0 MHz)	C _{iss}	-	5600	-	pF
Output Capacitance		C _{oss}	-	680	-	
Transfer Capacitance		C _{rss}	-	200	-	

SWITCHING CHARACTERISTICS

Turn-On Delay Time	(V _{DD} = 250 V, I _D = 22 A, R _{gen} = 4.3 ohms)	t _{d(on)}	-	70	-	ns
Rise Time		t _r	-	190	-	
Turn-Off Delay Time		t _{d(off)}	-	160	-	
Fall Time		t _f	-	160	-	
Total Gate Charge	(V _{DS} = 400 V, I _D = 22 A, V _{GS} = 10 V)	Q _g	-	115	140	nC
Gate-Source Charge		Q _{gs}	-	20	-	
Gate-Drain Charge		Q _{gd}	-	60	-	

SOURCE DRAIN DIODE CHARACTERISTICS

Forward On-Voltage	(I _S = 22 A, d/dt = 100 A/μs)	V _{SD}	-	1.1	1.6	Vdc
Forward Turn-On Time		t _{on}	-	**	-	ns
Reverse Recovery Time		t _{rr}	-	500	1000	

* Indicates Pulse Test = 300 μsec, Duty Cycle = 2%

** Limited by circuit inductance

3.1

OM6025SC - OM6032SC

ELECTRICAL CHARACTERISTICS: OM6027SC, OM6028SC (T_C = 25° unless otherwise noted)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage (V _{GS} = 0, I _D = 0.25 mA)	V _{(BR)DSS}	1000	-	-	Vdc	
Zero Gate Voltage Drain (V _{DS} = 1000 V, V _{GS} = 0)	I _{DSS}	-	-	0.25	mAdc	
(V _{DS} = 1000 V, V _{GS} = 0, T _J = 125° C)		-	-	1.0		
Gate-Body Leakage Current, Forward (V _{GSS} = 20 Vdc, V _{DS} = 0)	I _{GSSF}	-	-	100	nAdc	
Gate-Body Leakage Current, Reverse (V _{GSR} = 20 Vdc, V _{DS} = 0)	I _{GSSR}	-	-	100	nAdc	
ON CHARACTERISTICS*						
Gate-Threshold Voltage (V _{DS} = V _{GS} , I _D = 0.25 mAdc (T _J = 125° C)	V _{GS(th)}	2.0 1.5	3.0 -	4.0 3.5	Vdc	
Static Drain-Source On-Resistance (V _{GS} = 10 Vdc, I _D = 5 Adc)	r _{DS(on)}	-	-	1.3	Ohm	
Drain-Source On-Voltage (V _{GS} = 10 Vdc) (I _D = 10 A)	V _{DS(on)}	-	-	15	Vdc	
(I _D = 5 A, T _J = 125° C)		-	-	15.3		
Forward Transconductance (V _{DS} = 15 Vdc, I _D = 5 Adc)	g _{FS}	5.0	-	-	mhos	
DYNAMIC CHARACTERISTICS						
Input Capacitance	(V _{DS} = 25 V, V _{GS} = 0, f = 1.0 MHz)	C _{iss}	-	3900	pF	
Output Capacitance		C _{oss}	-	300		
Transfer Capacitance		C _{rss}	-	65		
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	(V _{DD} = 250 V, I _D = 5 A, R _{gen} = 4.3 ohms)	t _{d(on)}	-	40	ns	
Rise Time		t _r	-	100		
Turn-Off Delay Time		t _{d(off)}	-	100		
Fall Time		t _f	-	100		
Total Gate Charge	(V _{DS} = 400 V, I _D = 10 A, V _{GS} = 10 V)	Q _g	-	100	nC	
Gate-Source Charge		Q _{gs}	-	20		
Gate-Drain Charge		Q _{gd}	-	40		
SOURCE DRAIN DIODE CHARACTERISTICS						
Forward On-Voltage	(I _S = 10 A, dI/dt = 100 A/μs)	V _{SD}	-	-	1.5	Vdc
Forward Turn-On Time		t _{on}	-	**	-	ns
Reverse Recovery Time		t _{rr}	-	600	1000	

* Indicates Pulse Test = 300 μsec, Duty Cycle = 2%

** Limited by circuit inductance