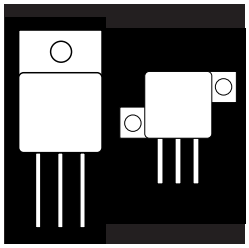
POWER MOSFETS IN HERMETIC ISOLATED JEDEC TO-254AA SIZE 6 DIE



400V, 500V, N-Channel, Up To 24 Amp
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

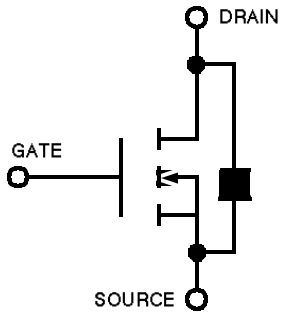
This series of hermetically packaged products feature the latest advanced MOSFET and packaging technology. They are ideally suited for Military requirements where small size, high performance and high reliability are required, and in applications such as switching power supplies, motor controls, inverters, 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)
OM6025SA	400	.23	24
OM6026SA	500	.30	22

3.1

SCHEMATIC



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

	Parameter	OM6025SA	OM6026SA	Units
V_{DS}	Drain-Source Voltage	400	500	V
V_{DGR}	Drain-Gate Voltage (R_{GS} = 1 M)	400	500	V
I_D @ T_C = 25°C	Continuous Drain Current[2]	24	22	A
I_{DM}	Pulsed Drain Current[2]	92	85	A
P_D @ T_C = 25°C	Maximum Power Dissipation	165	165	W
	Derate Above 25°C Ambient	.025	.025	W/°C
W_{DSS} (1) (2)	Single Pulse Energy Drain To Source @ 25°C	1000	1200	mJ
T_J T_{stg}	Operating and Storage Temperature Range	-55 to 150	-55 to 150	°C
Lead Temperature	(1/8" from case for 5 secs.)	275	275	°C

Note 1: V_{DD} = 50V, I_D = as noted
Note 2: Package Pin Limitation I_D @ T_C = 25°C = 25 Amps

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 Case	1.32	W/°C	

ELECTRICAL CHARACTERISTICS: OM6026SA (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		I_{DSS}				mAdc
(V_{DS} = 500 V, V_{GS} = 0)			-	-	0.25	
(V_{DS} = 500 V, V_{GS} = 0, T_J = 125° C)			-	-	1.0	
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		$V_{GS(th)}$				Vdc
(V_{DS} = V_{GS}, I_D = 0.25 mAdc			2.0	3.0	4.0	
(T_J = 125° C)			1.5	-	3.5	
Static Drain-Source On-Resistance (V_{GS} = 10 Vdc, I_D = 11 Adc)		$r_{DS(on)}$	-	-	0.30	Ohm
Drain-Source On-Voltage (V_{GS} = 10 Vdc)		$V_{DS(on)}$				Vdc
(I_D = 22 A)			-	-	8.0	
(I_D = 11 A, T_J = 125° C)			-	-	8.0	
Forward Transconductance (V_{DS} = 15 Vdc, I_D = 11 Adc)		g_{FS}	11	-	-	mhos
DYNAMIC CHARACTERISTICS						
Input Capacitance	(V_{DS} = 25 V, V_{GS} = 0,	C_{iss}	-	5600	-	pF
Output Capacitance	f = 1.0 MHz)	C_{oss}	-	680	-	
Transfer Capacitance		C_{rss}	-	200	-	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time		$t_{d(on)}$	-	70	-	ns
Rise Time	(V_{DD} = 250 V, I_D = 22 A,	t_r	-	190	-	
Turn-Off Delay Time	R_{gen} = 4.3 ohms)	$T_{d(off)}$	-	160	-	
Fall Time	V_{GS} = 10 V	t_f	-	160	-	
Total Gate Charge	(V_{DS} = 400 V, I_D = 22 A,	Q_g	-	115	140	nC
Gate-Source Charge	V_{GS} = 10 V)	Q_{gs}	-	20	-	
Gate-Drain Charge		Q_{gd}	-	60	-	
SOURCE DRAIN DIODE CHARACTERISTICS						
Forward On-Voltage		V_{SD}	-	1.1	1.6	Vdc
Forward Turn-On Time	(I_S = 22A, d/dt = 100 A/µs)	t_{on}		**		ns
Reverse Recovery Time		t_{rr}	-	500	1000	

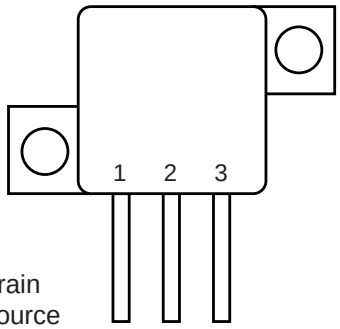
* Indicates Pulse Test = 300 µsec, Duty Cycle = 2%
** Limited by circuit inductance

ELECTRICAL CHARACTERISTICS: OM6025SA (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		I_{DSS}				mAdc
(V_{DS} = 400 V, V_{GS} = 0)			-	-	0.25	
(V_{DS} = 400 V, V_{GS} = 0, T_J = 125° C)			-	-	1.0	
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		$V_{GS(th)}$				Vdc
(V_{DS} = V_{GS}, I_D = 0.25 mAdc			2.0	3.0	4.0	
(T_J = 125° C)			1.5	-	3.5	
Static Drain-Source On-Resistance (V_{GS} = 10 Vdc, I_D = 12 Adc)		$r_{DS(on)}$	-	-	0.23	Ohm
Drain-Source On-Voltage (V_{GS} = 10 Vdc)		$V_{DS(on)}$				Vdc
(I_D = 24 A)			-	-	5.6	
(I_D = 12 A, T_J = 125° C)			-	-	5.6	
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,	C_{iss}	-	5600	-	pF
Output Capacitance	f = 1.0 MHz)	C_{oss}	-	78	-	
Transfer Capacitance		C_{rss}	-	230	-	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time		$t_{d(on)}$	-	70	-	ns
Rise Time	(V_{DD} = 250 V, I_D = 24 A,	t_r	-	190	-	
Turn-Off Delay Time	R_{gen} = 4.3 ohms)	$t_{d(off)}$	-	160	-	
Fall Time		t_f	-	160	-	
Total Gate Charge	(V_{DS} = 400 V, I_D = 24 A,	Q_g	-	110	140	nC
Gate-Source Charge	V_{GS} = 10 V)	Q_{gs}	-	20	-	
Gate-Drain Charge		Q_{gd}	-	55	-	
SOURCE DRAIN DIODE CHARACTERISTICS						
Forward On-Voltage		V_{SD}	-	1.1	1.6	Vdc
Forward Turn-On Time	(I_S = 24 A, d/dt = 100 A/µs)	t_{on}		**		ns
Reverse Recovery Time		t_{rr}	-	500	1000	

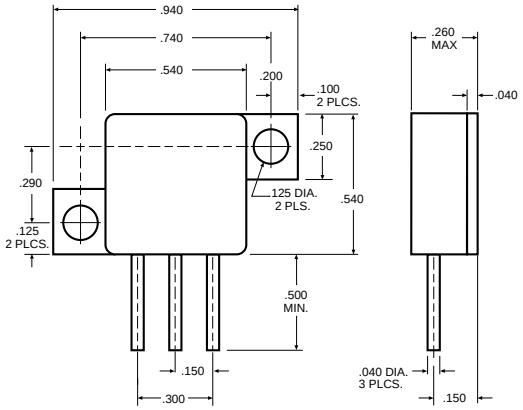
OM6025SC - OM6026SC

PIN CONNECTION

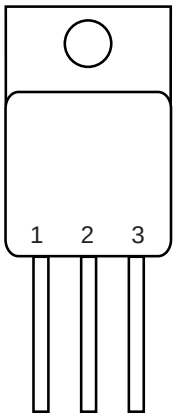


Pin 1: Drain
Pin 2: Source
Pin 3: Gate

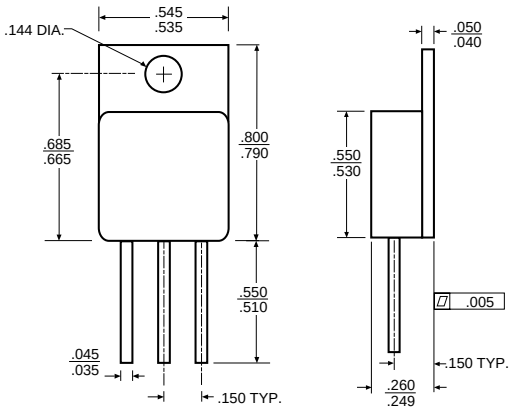
MECHANICAL OUTLINE



M-3S

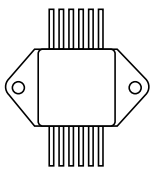


Pin 1: Drain
Pin 2: Source
Pin 3: Gate

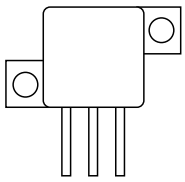


M-PAK

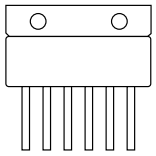
PACKAGE OPTIONS



MOD PAK



Z-TAB



6 PIN SIP

NOTES:

• Standard Products are supplied with glass feedthroughs. For ceramic feedthroughs, add the letter “C” to the part number. Example - OMXXXXCSA.

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

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