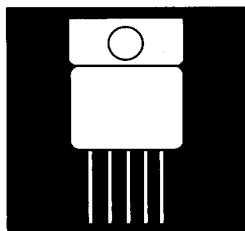


HIGH-SPEED, HIGH-CURRENT SINGLE MOSFET DRIVER IN 10 WATT HERMETIC PACKAGE



6 Amp, 25 nsec High-Speed, High-Current Single MOSFET Driver, Inverting and Non-Inverting

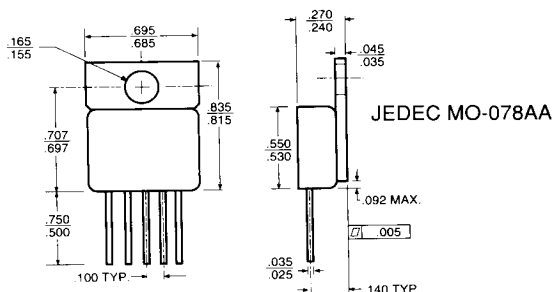
FEATURES

- CMOS Construction
- Latch-Up Protected
- Hermetic Metal Package
- Logic Input Will Withstand Negative Swing Up To 6 V
- Matched Rise and Fall Times 25 ns
- High Peak Output Current 6.0 A Peak
- Wide Operating Range 4.5 V to 18 V
- High Capacitive Load Drive 10,000 pF in 60 nS
- Low Delay Time 55 nS Typ.
- Rise Time, $C_L = 2,500$ pF 20 nS
- Fall Time, $C_L = 2,500$ pF 20 nS
- Constant Delay Times With Changes In Voltage Delay Source
- Logic High Input For Any Voltage From 2.4 V to V_{S+}
- Logic Input Threshold Independent of Supply Voltage
- Low Supply Current 450 μ A With Logic 1 Input
55 μ A With Logic 0 Input
- Low Output Impedance 2.5 Ω
- Output Voltage Swing To Within 25 mV of Ground or V_{S+}

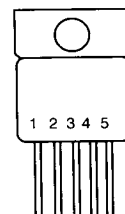
DESCRIPTION

The OM2601SC and OM2603SC are CMOS constructed Power MOSFET drivers capable of driving high current MOSFETs. These easy-to-use drivers are packaged in 5-Pin MO-078 packages and are ideally suited for Military applications where small size and high reliability are required. The OM2601SC is a non-inverting device and the OM2603SC is an inverting device both rated at 6 A (peak). For typical characteristic curves, see OM4420SC Data Sheet.

MECHANICAL OUTLINE



PIN CONNECTION



Pin 1 = V_{IN}
Pin 2 = GRD
Pin 3 = Output
Pin 4 = Output
Pin 5 = V_{+}

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	20 V
Input Voltage Any Terminal	$V_S + 0.3 \text{ V}$ to Ground -0.3 V
Power Dissipation	10 W
Operating Temperature	-55°C to 125°C
Maximum Chip Temperature	150°C
Storage Temperature	-55°C to 150°C

O2603SC ELECTRICAL CHARACTERISTICS: $T_A = 25^\circ \text{C}$ with $4.5 \text{ V} \leq V_S \leq 18 \text{ V}$ unless otherwise specified.

Type	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
INPUT	V_{IH}	Logic 1 Input Voltage		2.4	1.8	-	V
	V_{IL}	Logic 0 Input Voltage		-	1.3	0.8	V
	I_{IN}	Input Current	$0 \text{ V} \leq V_{IN} \leq V_S$	-10	-	10	μA
OUTPUT	V_{OH}	High Output Voltage		$V_S - 0.025$	-	-	V
	V_{OL}	Low Output Voltage		-	-	0.025	V
	R_O	Output Resistance	$V_{IN} = 0.8 \text{ V}$; for 2601, $V_{IN} = 2.4 \text{ V}$, $I_{OUT} = 10 \text{ mA}$, $V_S = 18 \text{ V}$	-	2.1	2.8	Ω
	R_O	Output Resistance	$V_{IN} = 2.4 \text{ V}$; for 2601, $V_{IN} = 0.8 \text{ V}$, $I_{OUT} = 10 \text{ mA}$, $V_S = 18 \text{ V}$	-	1.5	2.5	Ω
	I_{PK}	Peak Output Current	$V_S = 18 \text{ V}$	-	6.0	-	A
	I	Latch-Up Protection	Withstand Reverse Current	> 500	-	-	mA
SWITCHING	T_R	Rise Time	$C_L = 2500 \text{ pF}$	-	20	30	nS
	T_F	Fall Time	$C_L = 2500 \text{ pF}$	-	20	30	nS
	T_{D1}	Delay Time		-	55	60	nS
	T_{D2}	Delay Time		-	55	60	nS
POWER SUPPLY	I_S	Power Supply Current	$V_{IN} = 3.0 \text{ V}$	-	0.45	1.5	mA
	I_S	Power Supply Current		-	55	150	μA

OM2603SC ELECTRICAL CHARACTERISTICS: Over operating Temperature range with $4.5 \text{ V} \leq V_S \leq 18 \text{ V}$ unless otherwise specified.

Type	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
INPUT	V_{IH}	Logic 1 Input Voltage		2.4	-	-	V
	V_{IL}	Logic 0 Input Voltage		-	-	0.8	V
	I_{IN}	Input Current	$0 \text{ V} \leq V_{IN} \leq V_S$	-10	-	10	μA
OUTPUT	V_{OH}	High Output Voltage		$V_S - 0.025$	-	-	V
	V_{OL}	Low Output Voltage		-	-	0.025	V
	R_O	Output Resistance	$V_{IN} = 0.8 \text{ V}$; for 2601, $V_{IN} = 2.4 \text{ V}$, $I_{OUT} = 10 \text{ mA}$, $V_S = 18 \text{ V}$	-	3.0	5.0	Ω
	R_O	Output Resistance	$V_{IN} = 2.4 \text{ V}$; for 2601, $V_{IN} = 0.8 \text{ V}$, $I_{OUT} = 10 \text{ mA}$, $V_S = 18 \text{ V}$	-	2.3	5.0	Ω
SWITCHING	T_R	Rise Time	$C_L = 2500 \text{ pF}$	-	32	60	nS
	T_F	Fall Time	$C_L = 2500 \text{ pF}$	-	34	60	nS
	T_{D1}	Delay Time		-	50	100	nS
	T_{D2}	Delay Time		-	65	100	nS
POWER SUPPLY	I_S	Power Supply Current	$V_{IN} = 3.0 \text{ V}$	-	0.45	3.0	mA
	I_S	Power Supply Current	$V_{IN} = 0.0 \text{ V}$	-	.06	0.4	μA