

Quad Driver for GaAs FET Switches and Attenuators

**DR65-0001
V6**

Features

- High Speed CMOS Technology
- Complementary Outputs
- Positive Voltage Control
- Low Power Dissipation
- Plastic SOIC Package for SMT Applications
- Tape and Reel Packaging Available

Description

M/A-COM's DR65-0001 is a Quad channel driver used to translate TTL control inputs into gate voltages for GaAs FET microwave switches and attenuators. High speed analog CMOS technology is utilized to achieve low power dissipation at moderate to high speeds, encompassing most microwave switching applications.

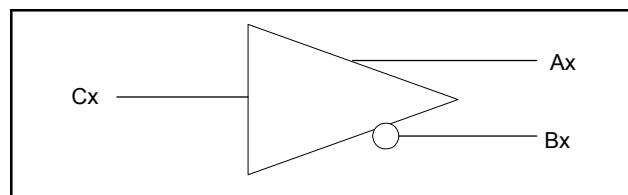
Ordering Information

Part Number	Package
DR65-0001	Bulk Packaging
DR65-001TR	Tape and Reel (1K Reel)

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

Logic Diagram



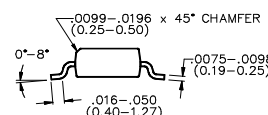
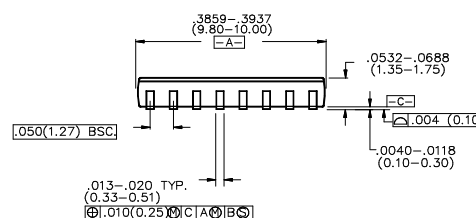
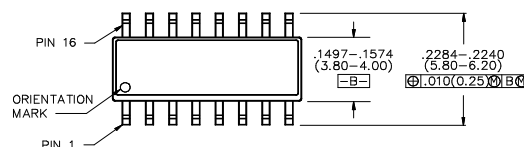
Guaranteed Operating Ranges

Symbol	Parameter ¹	Unit	Min	Typical	Max
V_{CC}	Positive DC Supply Voltage	V	4.5	5.0	5.5
V_{EE}	Negative DC Supply Voltage	V	-5.5	-5.0	-4.5
T_A	Operating Ambient Temperature	°C	-40	+25	+85
I_{OH}	DC Output Current - HIGH	mA	—	—	-1.0
I_{OL}	DC Output Current - LOW	mA	—	—	1.0
T_{rise}, T_{fall}	Maximum Input Rise or Fall Time	nS	—	—	500

1. All voltages are relative to GND.

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

SO-16



Pin Configuration

Pin No.	Function	Pin No.	Function
1	A3	9	C2
2	B3	10	C1
3	A4	11	GND
4	B4	12	GND
5	V_{EE}	13	A1
6	V_{CC}	14	B1
7	C4	15	A2
8	C3	16	B2

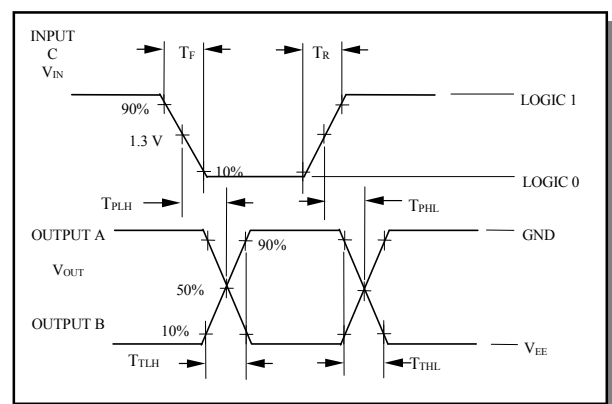
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AC & DC Characteristics Over Guaranteed Operating Range

Symbol	Parameter	Test Conditions	Units	Min	Typ	Max
V_{IH}	Input HIGH Voltage	Guaranteed HIGH Input Voltage	V	2.0	—	-
V_{IL}	Input LOW Voltage	Guaranteed LOW Input Voltage	V	-	—	0.8
V_{OH}	Output HIGH Voltage	$I_{OH} = -1 \text{ mA}$ $V_{EE} = \text{Max}$	V	- 0.1	—	-
V_{OL}	Output LOW Voltage	$I_{OL} = 1 \text{ mA}$ $V_{EE} = \text{Max}$	V	—	—	$V_{EE} + 0.1$
I_{IN}	Input Current	$V_{IN} = V_{CC}$ or GND $V_{EE} = \text{Min}$	μA	-10	0	10
I_{CC}	Quiescent Supply Current	$V_{CC} = \text{Max}$ $V_{EE} = \text{Min}$ $V_{IN} = V_{CC}$ or GND	μA	—	—	400
ΔI_{CC}	Additional Supply Current, per TTL Input pin	$V_{CC} = \text{Max}$ $V_{IN} = V_{CC} - 2.1\text{V}$	mA	—	—	1.0
T_{PHL}, T_{PLH}	Propagation Delay	Guaranteed -40°C to $+85^\circ \text{C}$	nS	—	—	50
T_{THL}, T_{TLH}	Output Transition Time	Guaranteed -40°C to $+85^\circ \text{C}$	nS	—	—	25
	Delay Skew, Output A to Output B	Guaranteed -40°C to $+85^\circ \text{C}$	nS	—	—	8

Switching Waveforms



Notes:

See Switching Wave Forms for the definition of the switching terms. Supplies must be by-passed with .01 μF Capacitors. Unused inputs must be tied to Ground

Absolute Maximum Ratings

Parameter	Absolute Maximum
V_{CC}	- .5V to + 6.0 V
V_{EE}	- 6.0 V to - .5 V
$V_{CC} - V_{EE}$	12 V
V_{IN}^4	$V_{CC} + .5 \text{ V}$
V_{OUT}	$V_{EE} - .5 \text{ V}$
Storage Temperature	-65°C to $+150^\circ \text{C}$
Operating Temperature	-40°C to $+85^\circ \text{C}$

- Standard CMOS TTL interface, latch-up will occur if logic signal is applied prior to power supply.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

Silicon Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Truth Table

Input	Outputs	
C_X	A_X	B_X
0	V_{EE}	GND
1	GND	V_{EE}