

**Single Driver for GaAs FET Switches and Attenuators**

**DR65-0109  
V3**

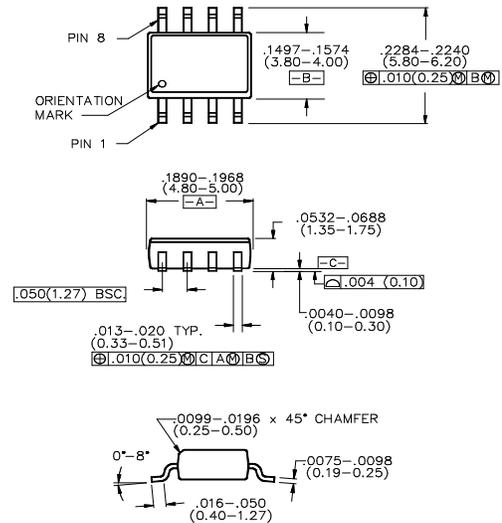
**Features**

- 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 DR65-0109 is a Single channel driver used to translate TTL control inputs into complementary 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.

**SO-8**



**Ordering Information**

Part Number	Package
DR65-0109	Bulk Packaging
DR65-0109TR	1000 piece reel

**Pin Configuration**

PIN	Function
1	V <sub>CC</sub>
2	V <sub>IN</sub>
3	GND
4	GND
5	GND
6	Output A
7	Output B
8	V <sub>EE</sub>

**Guaranteed Operating Ranges**

Symbol	Parameter <sup>1</sup>	Unit	Min	Typical	Max
V <sub>CC</sub>	Positive DC Supply Voltage	V	4.5	5.0	5.5
V <sub>EE</sub>	Negative DC Supply Voltage	V	-5.5	-5.0	-4.5
V <sub>CC-V<sub>EE</sub></sub>	Positive to Negative Supply Range	V	9.0	10.0	11.0
T <sub>A</sub>	Operating Ambient Temperature	°C	-40	+25	+85
I <sub>OH</sub>	DC Output Current - HIGH	mA	—	—	-1.0
I <sub>OL</sub>	DC Output Current - LOW	mA	—	—	1.0
T <sub>rise</sub> , T <sub>fall</sub>	Maximum Input Rise or Fall Time	nS	—	—	500

1. All voltages are relative to GND.

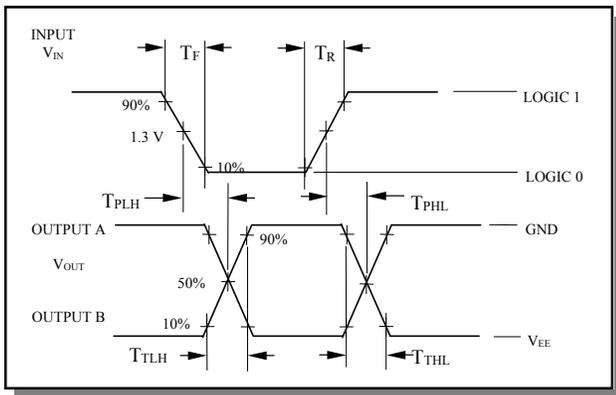
\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

**AC & DC Characteristics Over Guaranteed Operating Range**

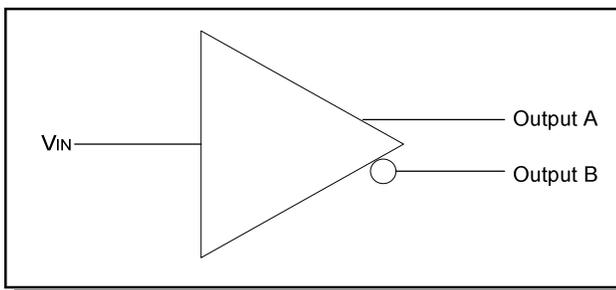
Symbol	Parameter	Test Conditions		Units	Min	Typ	Max
V <sub>IH</sub>	Input HIGH Voltage	Guaranteed HIGH Input Voltage		V	2.0	—	-
V <sub>IL</sub>	Input LOW Voltage	Guaranteed LOW Input Voltage		V	-	—	0.8
V <sub>OH</sub>	Output HIGH Voltage	I <sub>OH</sub> = -1 mA	V <sub>EE</sub> = Max	V	-0.1	—	-
V <sub>OL</sub>	Output LOW Voltage	I <sub>OL</sub> = 1 mA	V <sub>EE</sub> = Max	V	—	—	V <sub>EE</sub> + 0.1
I <sub>IN</sub>	Input Leakage Current	V <sub>IN</sub> = V <sub>CC</sub> or GND	V <sub>EE</sub> = Min	μA	-1.0	0	1.0
I <sub>CC</sub>	Quiescent Supply Current	V <sub>CC</sub> = Max	V <sub>EE</sub> = Min V <sub>IN</sub> = V <sub>CC</sub> or GND	μA	—	—	400
T <sub>PHL</sub> , T <sub>PLH</sub>	Propagation Delay	Guaranteed -40° C to +85° C		nS	—	—	50
T <sub>THL</sub> , T <sub>TLH</sub>	Output Transition Time	Guaranteed -40° C to +85° C		nS	—	—	25
	Delay Skew, Output A to Output B	Guaranteed -40° C to +85° C		nS	—	—	8

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

**Switching Waveforms**



**Logic Diagram**



**Absolute Maximum Ratings**

Parameter	Absolute Maximum
V <sub>CC</sub>	- .5V to + 6.0 V
V <sub>EE</sub>	- 6.0 V to - .5 V
V <sub>CC</sub> - V <sub>EE</sub>	12 V
V <sub>IN</sub> <sup>2</sup>	V <sub>CC</sub> + .5 V
V <sub>OUT</sub>	V <sub>EE</sub> - .5 V
Storage Temperature	-65°C to +150°C

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

**Truth Table**

Input	Outputs	
V <sub>IN</sub>	A	B
0	V <sub>EE</sub>	GND
1	GND	V <sub>EE</sub>