

## GENERAL DESCRIPTION

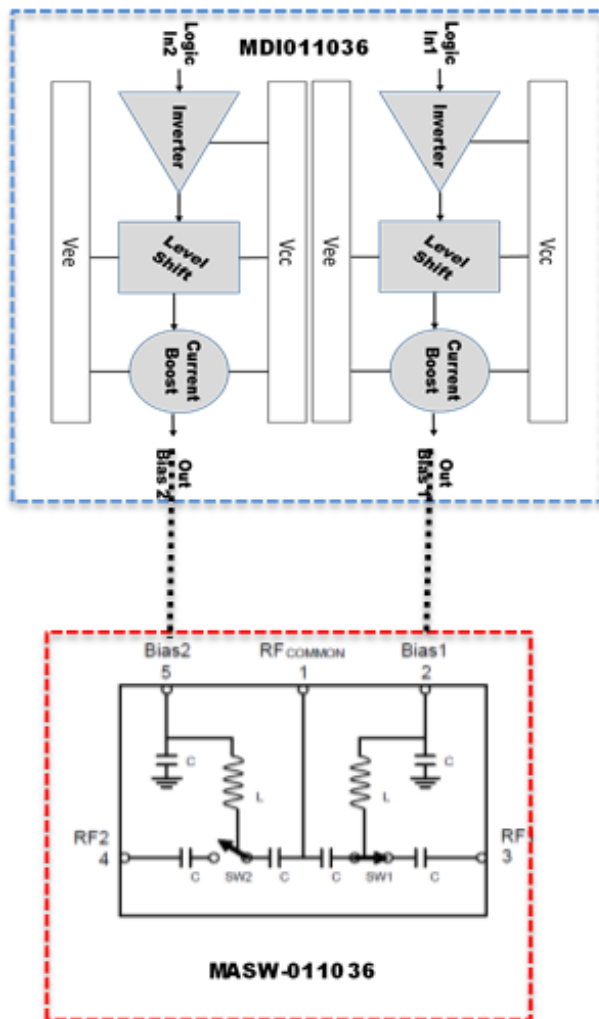
The MDI011036Q is a driver featuring high speed and wide negative voltage range suited for driving MASW-011036 SP2T terminated switch MMIC.

The driver is compatible with 3.3/5.0 V CMOS logic and supplies up to 25 mA current to forward bias the diodes and  $-V$  from -5 to -30V to back bias the diodes.

## FEATURES

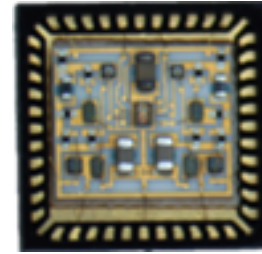
- Ultra high speed <12nS
- Available in packaged and unpackaged form
- Compatible with CMOS FPGA outputs

## FUNCTION BLOCK DIAGRAM



## MECHANICAL

The MDI011036Q is constructed on an alumina thin film substrate with TaN resistors and discrete wirebonded silicon bipolar transistors, packaged in a 7mm 44 pad QFN. It is designed for integration into an integrated microwave assembly which operates in harsh environments of high temperature and vibration.



## PIN CONNECTIONS

Pins 11 and 23 (Vneg) are internally connected  
Pins 1 and 33 are not internally connected.

Pin 1 is + bias for channel 2 and Pin 33 is positive bias for channel 1

1	Vpos	23	Vneg
2	NC	24	NC
3	NC	25	NC
4	NC	26	NC
5	NC	27	NC
6	Input 2	28	Input 1
7	NC	29	NC
8	NC	30	NC
9	NC	31	NC
10	NC	32	NC
11	Vneg	33	Vpos
12	Ground	34	NC
13	NC	35	NC
14	NC	36	NC
15	NC	37	Output 1
16	NC	38	NC
17	NC	39	NC
18	NC	40	Output 2
19	NC	41	NC
20	NC	42	NC
21	NC	43	NC
22	Ground	44	NC

## TRUTH TABLE

IN1	IN2	BIAS1	BIAS2
0	1	+mA	-V
1	0	-V	+mA
0	0	+mA	+mA

## ELECTRICAL SPECIFICATIONS

Vpos +5V, Vneg -28V, TEMP 25C, PRR 1MHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>ABSOLUTE MAXIMUMS</b>						
Vpos	Logic Supply Positive		0		+7	V
Vneg	Supply Voltage Negative		-40		0	V
To	Operating Temperature		-54		+125	Deg C
Ts	Storage Temperature		-65		+150	Deg C
<b>INPUT</b>						
VI_hi	Voltage Input High	TTL	4.2	4.5	5.5	V
VI_low	Voltage Input Low	TTL	0	.5	1.0	V
<b>OUTPUT</b>						
VO_hi	Voltage Out High	open load	4.2	4.5	4.8	V
VO_low	Voltage Out Low	open load	-27.8	-27.5	-27.2	V
IO_hi	Current Out High	steady state into 1V diode load		25		mA
IO_low	Current Out Low	steady state into 1V diode load		-0		mA
lopk	Current Peak Output	sink		-100		mA
<b>SUPPLY</b>						
IQC_pos	Quiescent Current Positive	0.5MHz 50% duty cycle		11		mA
IQC_neg	Quiescent Current Negative	0.5MHz 50% duty cycle		14		mA
<b>DYNAMIC</b>						
Trise	Time Rise			5	10	nS
Tfall	Time Fall			5	10	nS
Td_rise	Delay Rise			3	100	nS
Td_fall	Delay Fall			3	100	nS
TSW_rise	Switching Speed Rise	10pF load		9	110	nS
TSW_fall	Switching Speed Fall	10pF load		9	110	nS
PRR	Pulse Repetition Rate	Max, 10pF load		10		MHz



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**SWITCH STATE**

Switch State
RFC-RF1 ISO RFC-RF2 Loss
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