

GENERAL DESCRIPTION

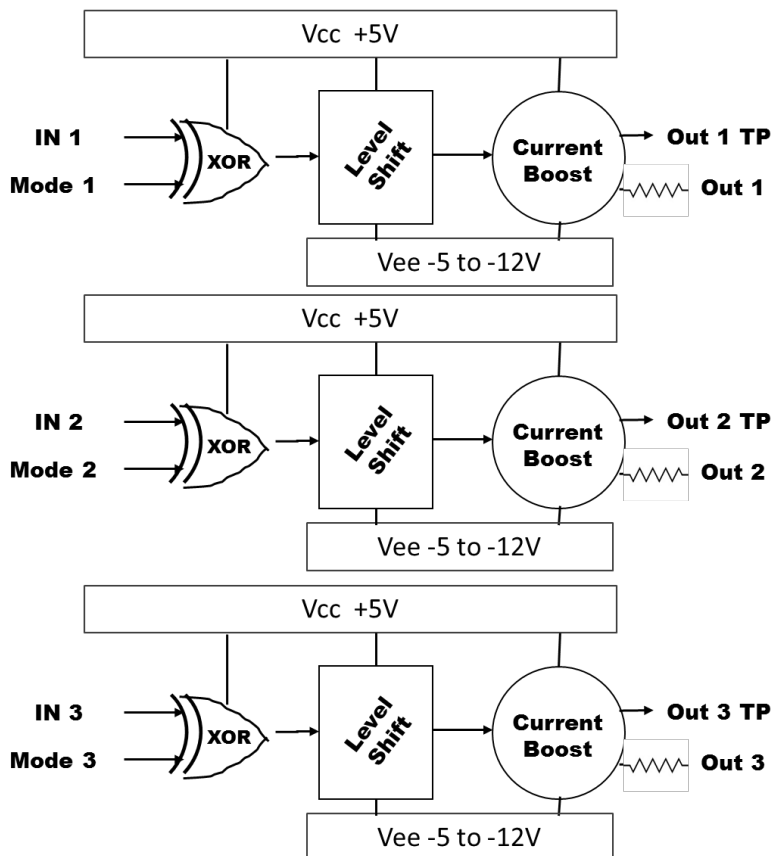
The 99110 is a driver featuring high speed and wide negative voltage range suited for driving MASW-003103 SP3T monolithic switch.

The driver is compatible with 3.3/5.0 V CMOS logic and has 3 independent channels to supply each bias line with +/-40 mA current to forward bias the PIN diodes. $-V$ can vary from -5 to -12V for high back bias operation. Current limiting resistors are accessible for easy replacement to adjust output current.

FEATURES

- Ultra high speed <12nS
- Programmable inverting or non inverting operation
- Reverse protection diodes

FUNCTION BLOCK DIAGRAM



MECHANICAL

The 99110 consists of silicon BJT transistors wire-bonded to a laminate substrate and sealed with a dam and fill process. This forms a .5" x 1.0" 16 pad open package assembly designed for integration into an integrated microwave assembly.

PIN CONNECTIONS

Recommend bypassing V_{pos} and V_{neg} with .1 uF capacitor or .01 uF minimum.

- 1 V_{pos} +5V
- 2 Input 1
- 3 Mode 1
- 4 Input 2
- 5 Mode 2
- 6 Input 3
- 7 Mode 3
- 8 Ground
- 9 V_{neg} -5V TO -12V
- 10 Output 3
- 11 Output 3 Testpoint
- 12 Output 2
- 13 Output 2 Testpoint
- 14 Output 1
- 15 Output 1 Testpoint
- 16 V_{pos} +5V

TRUTH TABLE

IN1	Mode1	IN2	Mode2	IN3	Mode3	OUT1	OUT2	OUT3
1	1	1	1	1	1	+40mA	+40mA	+40mA
0	1	0	1	0	1	-40mA	-40mA	-40mA
1	0	1	0	1	0	-40mA	-40mA	-40mA
0	0	0	0	0	0	+40mA	+40mA	+40mA

ELECTRICAL SPECIFICATIONS

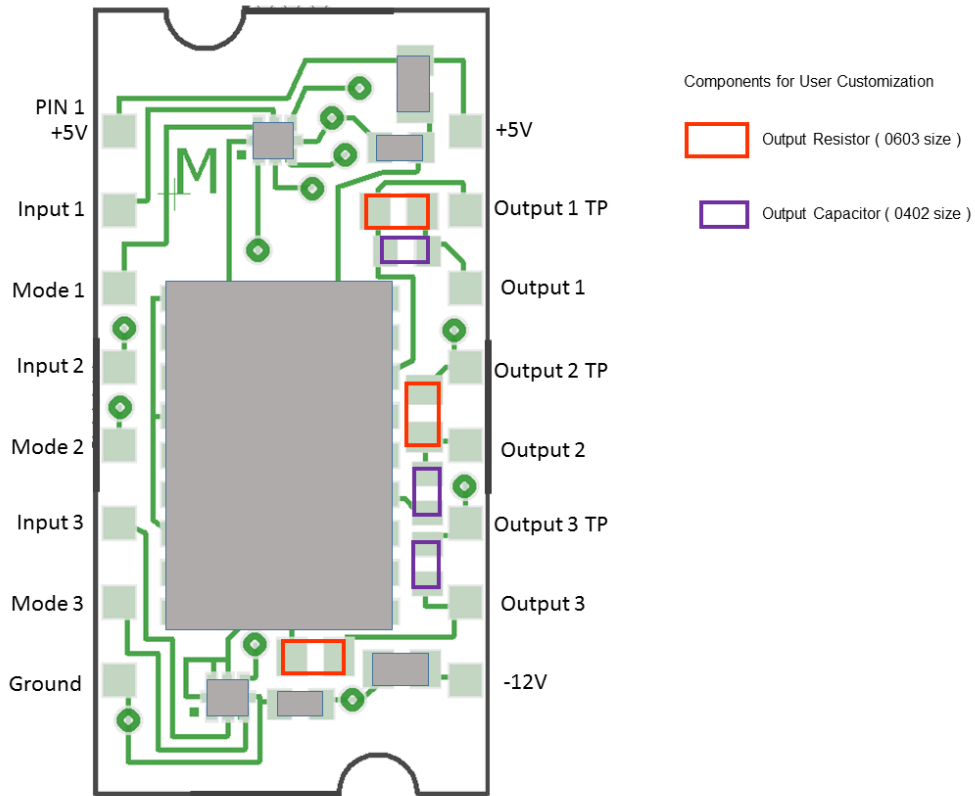
Vpos +5V, Vneg -12V, TEMP 25C, PRR .5MHz

	SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT							
	VI_hi	Voltage Input High	CMOS	2.8	4	5.5	V
	VI_low	Voltage Input Low	CMOS	0	.8	1.2	V
OUTPUT							
	VO_hi	Voltage Out High	open load	5.2	5.5	5.8	V
	VO_low	Voltage Out Low	open load	-4.8	-11.5	-4.2	V
	IO_hi	Current Out High	steady state into 1V diode load		+40		mA
	IO_low	Current Out Low	steady state into 1V diode load common arm resistor		-40		mA
	lopk	Current Peak Output	sink		-100		mA
SUPPLY							
	IQC_pos	Quiescent Current Positive	0.5MHz 50% duty cycle		8		mA
	IQC_neg	Quiescent Current Negative	0.5MHz 50% duty cycle		5		mA
DYNAMIC							
	Trise	Time Rise			7		nS
	Tfall	Time Fall			7		nS
	Td_rise	Delay Rise			5		nS
	Td_fall	Delay Fall			5		nS
	TSW_rise	Switching Speed Rise	10pF load, 1.5nS/volt slew rate		12		nS
	TSW_fall	Switching Speed Fall	10pF load, 1.5nS/volt slew rate		10		nS
	PRR	Pulse Repetition Rate	Max, 10pF load		1	5	MHz

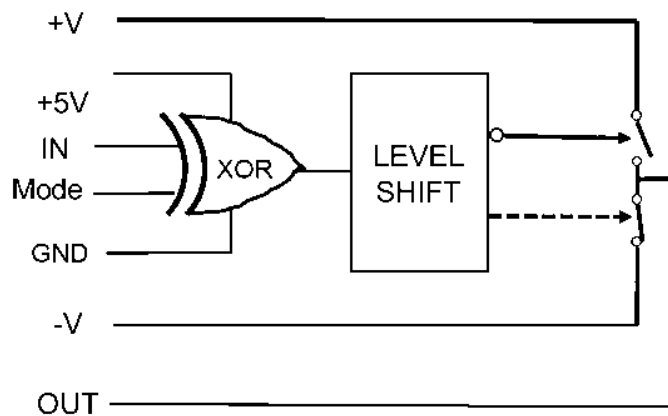
"DRAWING NOT TO SCALE. DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED."

MARKING SPECIFICATIONS

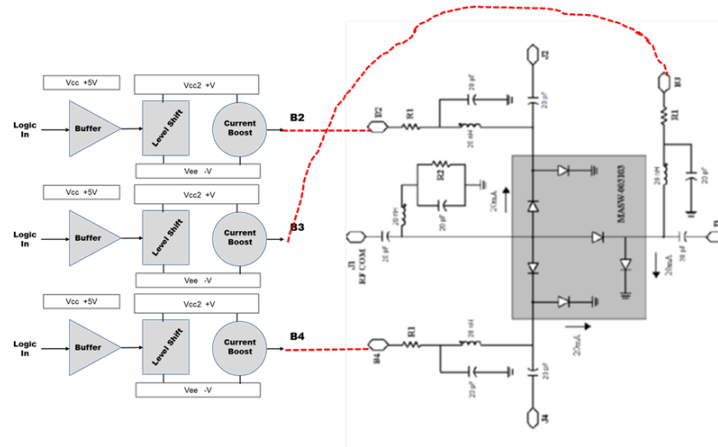
Logo: Impellimax
 Part Number: 99110



FUNCTIONAL SINGLE CHANNEL



TYPICAL APPLICATION



CALCULATOR

Current Setting Calculator

V+ = +5V, V- = -12V
 Set R1 (current limit for shunt diode)
 $R1 = (+V-2)/A$ A is desired current
 Set R2 current for series diode, common arm resistor)
 $R2 = (-V+4)/A - R1$

Example:
 R1 100 ohm = $(5V-2)/.03A$
 R2 160 ohm = $(|-12+4|)/.03) - 100$