

GENERAL DESCRIPTION

The 99237 is a driver featuring high speed and wide negative voltage range suited for driving high power MASW series SP2T monolithic switches.

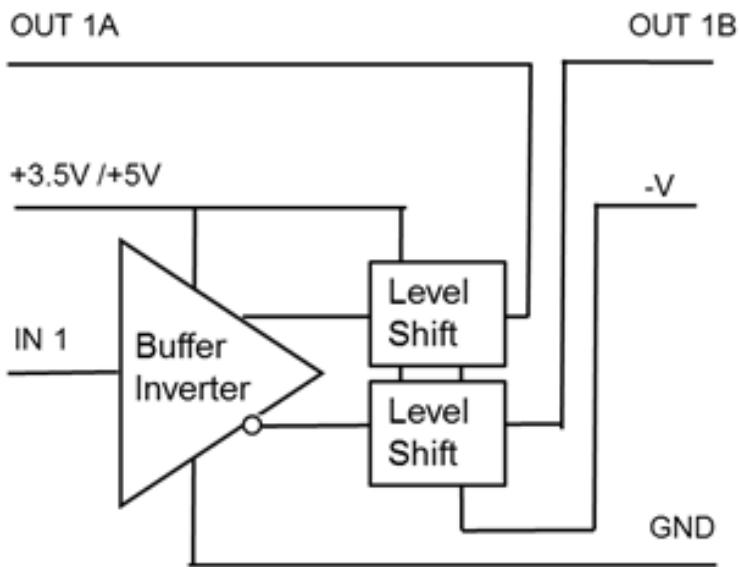
The driver is compatible with 3.3/5.0 V CMOS logic and has a single logic input and 2 outputs to supply each bias line with $-V$ up to -100V and up to +/-40 mA current.

On-board user-modifiable output current-setting resistors and spiking caps are integrated into the unit.

FEATURES

- Ultra high speed <35nS
- Compatible with CMOS FPGA outputs
- Drop-in ready module with corner 2-56 mounting holes
- Compatible with MASW-011036 Ka-Band SPDT PIN Switch

FUNCTION BLOCK DIAGRAM

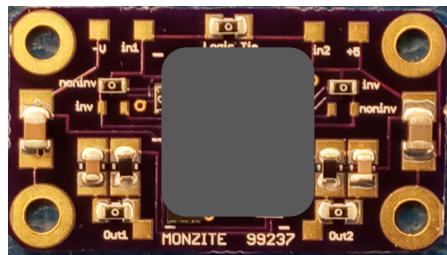


MECHANICAL

The 99237 consists of silicon micro components soldered to a laminate substrate and protected with a dam and fill process. This forms a 7 x 7 mm protected area within a nominal 1" by .55" PCB, with a fully continuous grounded gold-plated backside, designed for integration into an integrated microwave assembly.

ECCN Code EAR99

99237 is RoHS 3 (EU 2015/863) compliant.



PIN CONNECTIONS

Pins 2, 9, 11 (Vneg) internally connected

Pins 5, 8 (Vpos) internally connected

PIN 11 Backside paddle is Vneg

Recommend bypassing Vpos and Vneg with .47 uF

- 1 -V (-5V to -40V)
- 2 Input
- 3 NC
- 4 +5V / +3.3V
- 5 Out 1B Inverting
- 6 Out 1A Noninverting
- 7 Ground

TRUTH TABLE

INPUT	OUT1 INV	OUT1 NI
1	+V	-V
0	-V	+V

ELECTRICAL SPECIFICATIONS

Vpos +5V, Vneg -100V, TEMP 25C, PRR .5MHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
VI_hi	Voltage Input High	CMOS	2.5	4.8	5.5	V
VI_low	Voltage Input Low	CMOS	0	.2	1.8	V
OUTPUT						
VO_hi	Voltage Out High	open load	4.5	4.8	5.0	V
VO_low	Voltage Out Low	open load	-99.5	-99.8	-100	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	0.5 KHz 50% duty cycle	3			mA
IQC_neg	Quiescent Current Negative	0.5KHz 50% duty cycle	2			mA
DYNAMIC						
Trise	Time Rise		10			nS
Tfall	Time Fall		10			nS
Td_rise	Delay Rise		20			nS
Td_fall	Delay Fall		20			nS
TSW_rise	Switching Speed Rise	100pF load	35			nS
TSW_fall	Switching Speed Fall	100pF load	35			nS
PRR	Pulse Repetition Rate	100pF load	50	250		KHz

ESD Sensitivity HBM Class1B

MECHANICAL SPECIFICATIONS

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

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** Recommended backside to be electrically and thermally connected to ground. Recommended Bypassing +5V and –V supply with .1 uf .

(01 uf min) to ground.

MSL RATING 4 (refer to JEDEC STD 033B)

Package Code Q

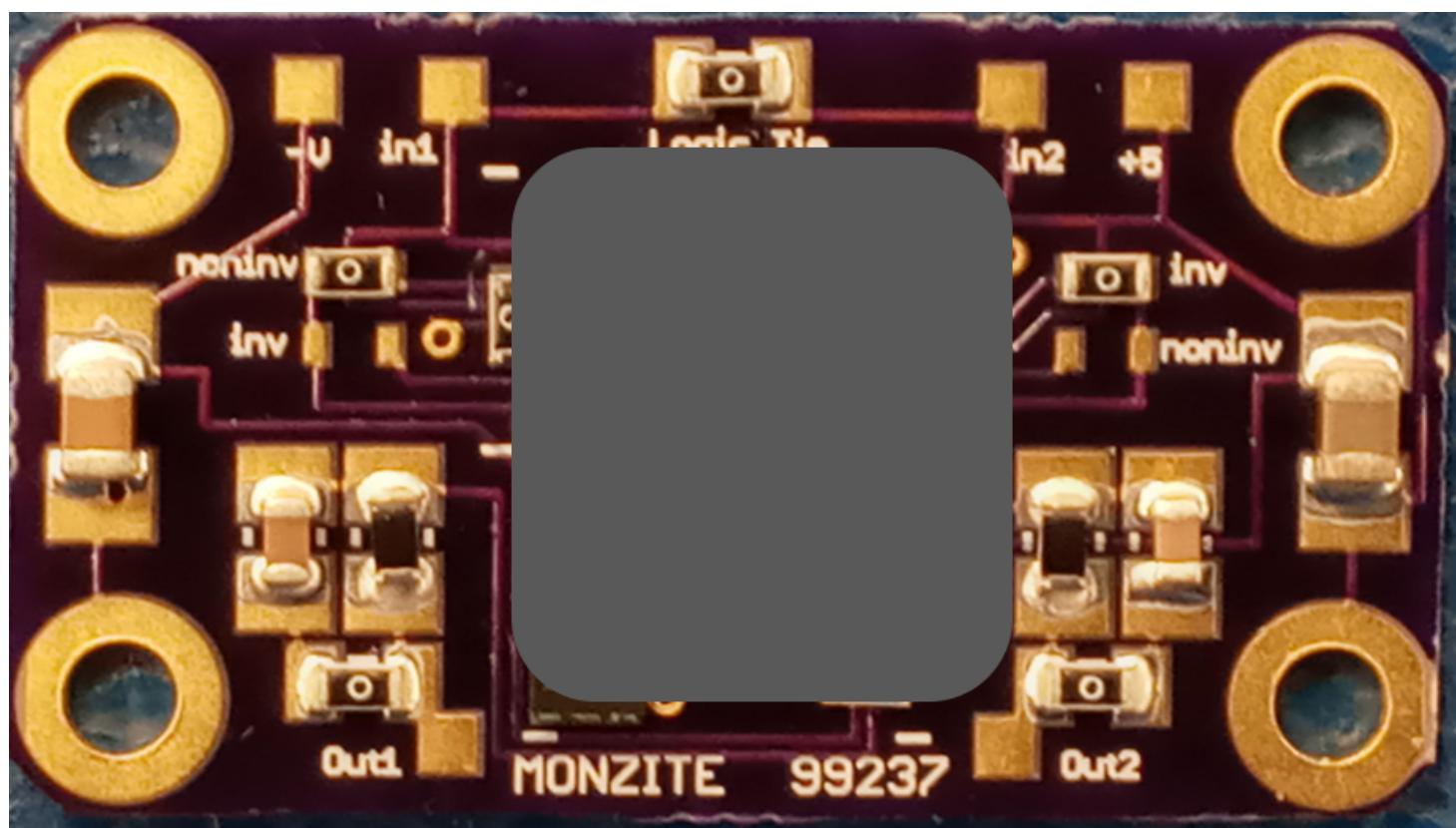
Type: Housing; Lead Finish: Gold

Length 0.98in; Width 0.55in

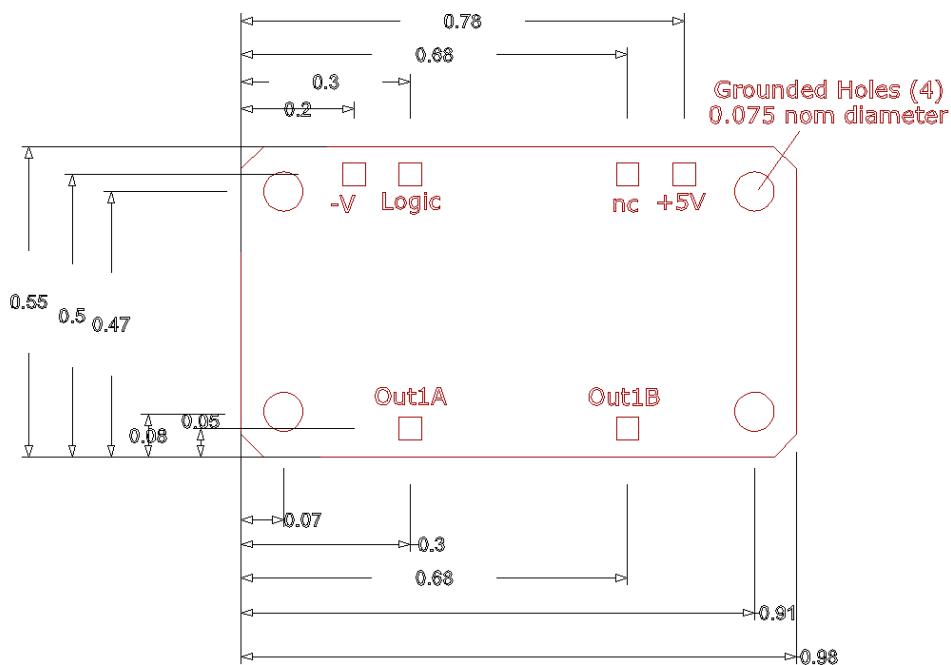
MARKING SPECIFICATIONS

Logo: Impellimax

Part Number: 99237

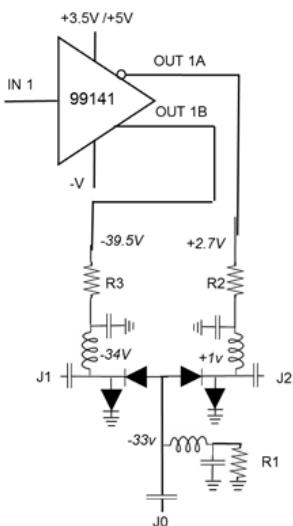


FOOTPRINT



TYPICAL APPLICATION

EXAMPLE 1



Current Setting Calculator

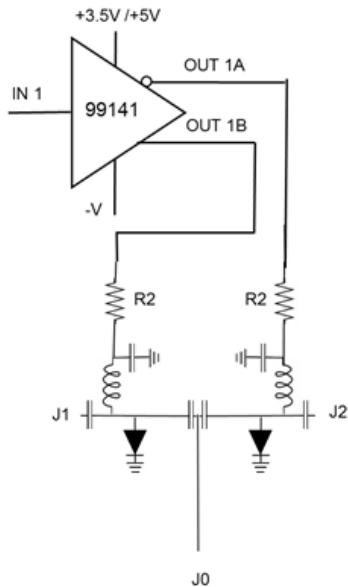
Set $R_2 = (V_{cc} - 2)/A$ A is desired current in shunt diode
 example $43 \text{ ohm} = (3.3\text{V}-2)/.03\text{A}$

Set $R_1 = ((V_{ee} + 2) - A) - R_2$ A is desired current in series diode
 example $1832 \text{ ohm} = ((-39.5\text{V}+2) - .02\text{A}) - 43 \text{ ohm}$

This example provides 34 V of back bias to series off diode and 35 V of back bias to shunt off diode

TYPICAL APPLICATION

EXAMPLE 2

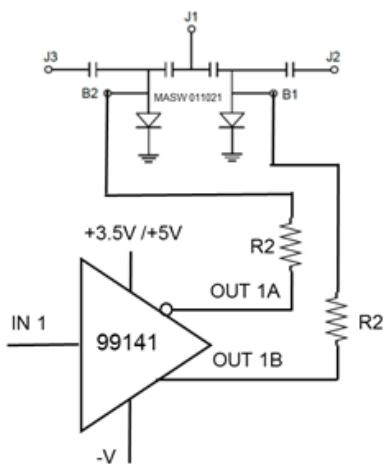


Current Setting Calculator

Set $R_2 = (V_{cc} - 2)/A$ A is desired current in shunt diode
 example 100 ohm=(5V-2)/.03A

TYPICAL APPLICATION

EXAMPLE 3



Current Setting Calculator

Set $R_2 = (V_{cc} - 2)/A$ A is desired current in shunt diode
 example 43 ohm=(3.3V-2)/.03A