

## GENERAL DESCRIPTION

The 5224 is a dual channel high-speed driver that level shifts standard logic-level TTL into outputs suitable to drive SP2T high power PIN diode RF/Microwave switches.

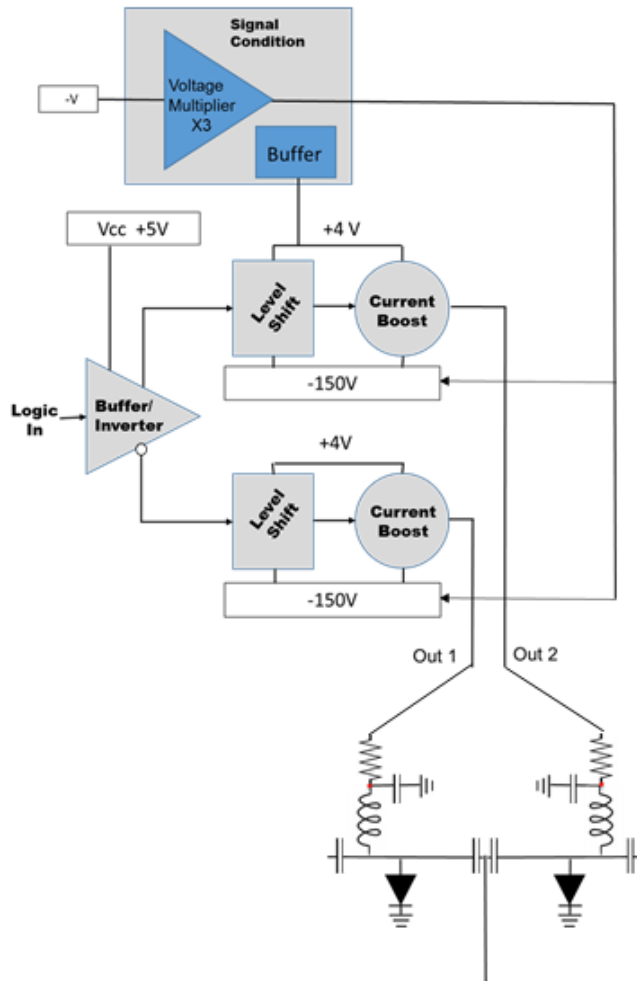
The 5224 has a TTL buffer stage, a high-speed level shift, and a DC-DC converter which generates up to -150V from a X3 multiplier charge pump.

## FEATURES

- Fused -V rail

## FUNCTION BLOCK DIAGRAM

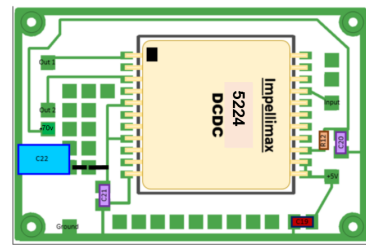
Typical Application



## MECHANICAL

The 5224 is constructed on a 1.5" x 1.0" FR4 substrate with hermetic hybrid mounted to it. The hybrid consists of a thin film substrate with TaN resistors and discrete wire bonded silicon bipolar transistors housed in a hermetic metal package designed for integration into an integrated microwave assembly.

5224 is RoHS compliant.



## PIN CONNECTIONS

- Output 1
- Output 2
- Vneg
- Vneg Mult Out
- Ground
- NC
- Vpos1 +5V
- Input TTL
- NC
- NC

**TRUTH TABLE**

INTTL    OUT1    OUT2

0	+250m A	-120V
1	-120V	+250m A

**ELECTRICAL SPECIFICATIONS**

Vpos +5V, Vneg -50V, TEMP 25C, PRR 2KHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>ABSOLUTE MAXIMUMS</b>						
Vpos	Logic Supply Positive		0		+7	V
Vneg	Supply Voltage Negative				-60	V
To	Operating Temperature		-54		+105	Deg C
Ts	Storage Temperature		-65		+150	Deg C
<b>INPUT</b>						
VI_hi	Voltage Input High	TTL/CMOS	2.8	4.5	5.5	V
VI_low	Voltage Input Low	TTL/CMOS	0	.5	1.8	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	-148.5	-149	-149.5	V
IO_hi	Current Out High	steady state into 40micron diode load 10ohm		200	250	mA
IO_low	Current Out Low <b>**</b> (see note)	steady state into 40micron diode load 10ohm			1	mA
lopk	Current Peak Output	sink		1.2		A
<b>SUPPLY</b>						
IQC_pos	+5V Quiescent Current	2KHz 50% duty cycle		10		mA
IQC_neg	-70V Quiescent Current	2KHz 50% duty cycle		20		mA
<b>DYNAMIC</b>						
Trise	Time Rise	8 shunt 40micron SP2T 100pF blocking & bypass		100		nS
Tfall	Time Fall	8 shunt 40micron SP2T 100pF blocking & bypass		100		nS
Td_rise	Delay Rise	8 shunt 40micron SP2T 100pF blocking & bypass		100		nS
Td_fall	Delay Fall	8 shunt 40micron SP2T 100pF blocking & bypass		100		nS
TSW_rise	Switching Speed Rise	8 shunt 40micron SP2T 100pF blocking & bypass		300		nS
TSW_fall	Switching Speed Fall	8 shunt 40micron SP2T 100pF blocking & bypass		300		nS
PRR	Pulse Repetition Rate	8 shunt 40micron SP2T 100pF blocking & bypass		2		KHz

**\*\* -150V**

**MECHANICAL SPECIFICATIONS**

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

Type: Board

Length 1.5 in TYP; Width 1.0 in TYP; Height .15 in TYP; Weight .5 grams TYP

**MARKING SPECIFICATIONS**

Logo: Impellimax

Part Number: 5224

