

### GENERAL DESCRIPTION

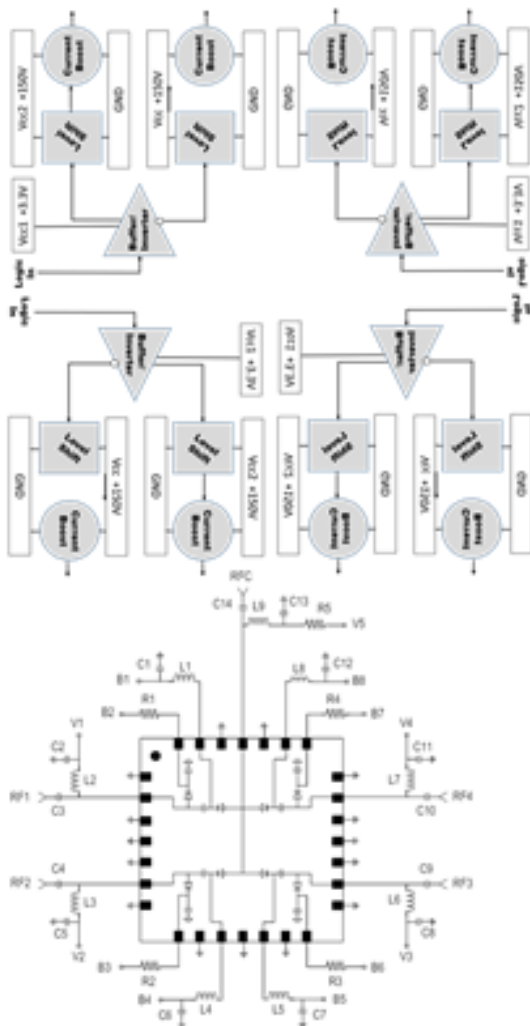
The 9829 is a driver featuring high speed and high voltage range suited for driving high Power PIN diode switches.

The driver is compatible with CMOS and TTL logic and has 4 channels each supplying complementary outputs to sink the series diode with up to +500 mA current in forward bias and the shunt diode up to 100mA. All reverse bias is +149V or Vneg-1V.

### FEATURES

- High voltage, high speed 3 uS
- 500 ma bias current
- Mates to MACOM high power PIN diode switch

### FUNCTION BLOCK DIAGRAM

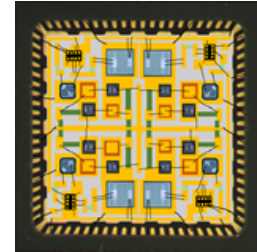


9829 driver

SP4T Switch

### MECHANICAL

The 9829 is constructed on an alumina thin film substrate with TaN resistors and discrete wire bonded silicon bipolar transistors and housed in a 12mm square 80 lead QFN. This is designed for integration into an integrated microwave assembly which operates in harsh environments of high temperature and vibration.



### PIN CONNECTIONS

1	C1	41	C3
2	NC	42	NC
3	NC	43	NC
4	+3.3V	44	Output B6
5	+3.3V	45	Output B6
6	NC	46	NC
7	NC	47	NC
8	Output B2	48	+150V
9	Output B2	49	+150V
10	NC	50	NC
11	NC	51	NC
12	+150V	52	Output B7
13	+150V	53	Output B7
14	NC	54	NC
15	NC	55	NC
16	Output B3	56	+3.3V
17	Output B3	57	+3.3V
18	NC	58	NC
19	NC	59	NC
20	C2	60	C4
21	Ground	61	Ground
22	NC	62	NC
23	NC	63	NC
24	Output B4	64	Output B8
25	Output B4	65	Output B8
26	NC	66	NC
27	NC	67	NC
28	NC	68	NC
29	NC	69	NC
30	NC	70	NC
31	NC	71	NC
32	NC	72	NC

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33 NC	73 NC
34 NC	74 NC
35 NC	75 NC
36 Output B5	76 Output B1
37 Output B5	77 Output B1
38 NC	78 NC
39 NC	79 NC
40 Ground	80 Ground

**TRUTH TABLE**

C1	C2	C3	C4	OUTB1	OUTB2	OUTB3	OUTB4	OUTB5	OUTB6	OUTB7	OUTB8
0	1	1	1	1.0V@ 500mA	+150V @.1mA	.9V@7 5mA	+150V @.1mA	+150V @.1mA	.9V@7 5mA	.9V@7 5mA	+150V @.1mA
1	0	1	1	+150V @.1mA	.9V@7 5mA	+150V @.1mA	1.0V@ 500mA	+150V @.1mA	.9V@7 5mA	.9V@7 5mA	+150V @.1mA
1	1	0	1	+150V @.1mA	.9V@7 5mA	.9V@7 5mA	+150V @.1mA	1.0V@ 500mA	+150V @.1mA	.9V@7 5mA	+150V @.1mA
1	1	1	0	+150V @.1mA	.9V@7 5mA	.9V@7 5mA	+150V @.1mA	+150V @.1mA	.9V@7 5mA	+150V @.1mA	1.0V@ 500mA

**ELECTRICAL SPECIFICATIONS**

Vpos1 +3.3V, Vpos2 +150V, TEMP 25C, PRR .5KHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>ABSOLUTE MAXIMUMS</b>						
Vpos	Logic Supply Positive		0		+6	V
Vpos	Supply Voltage Positive				+180	V
To	Operating Temperature		-54		+100	Deg C
Ts	Storage Temperature		-65		+125	Deg C
<b>INPUT</b>						
VI_hi	Voltage Input High	TTL	1.8	2.9	3.3	V
VI_low	Voltage Input Low	TTL	0	.4	.8	V
<b>OUTPUT</b>						
VO_hi	Voltage Out High	open load	149	149.5	149.5	V
VO_low	Voltage Out Low	open load	.2	.5	.9	V
IO_hi	Current Out High	steady state into 1V diode load			.1	mA
IO_low	Current Out Low	steady state into 1V diode load			500	mA
Iopk	Current Peak Output	sink			2000	mA
<b>SUPPLY</b>						
IQC_pos	Quiescent Current Positive	0.5 KHz 50% duty cycle		6		mA
<b>DYNAMIC</b>						
Trise	Time Rise			550		nS
Tfall	Time Fall			150		nS
Td_rise	Delay Rise			750		nS
Td_fall	Delay Fall			2000		nS
TSW_rise	Switching Speed Rise	300pF load		1000		nS
TSW_fall	Switching Speed Fall	300pF load		2500		nS
PRR	Pulse Repetition Rate	Max, 330pF load		.5		KHz

**MECHANICAL SPECIFICATIONS**

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

Package Code L

Type: Housing; Lead Finish: Gold

Length 12.000 mm MAX; Width 12.000 mm MAX; Height 1.91 mm MAX

**MARKING SPECIFICATIONS**

Logo: Impellimax

Part Number: 9829

