

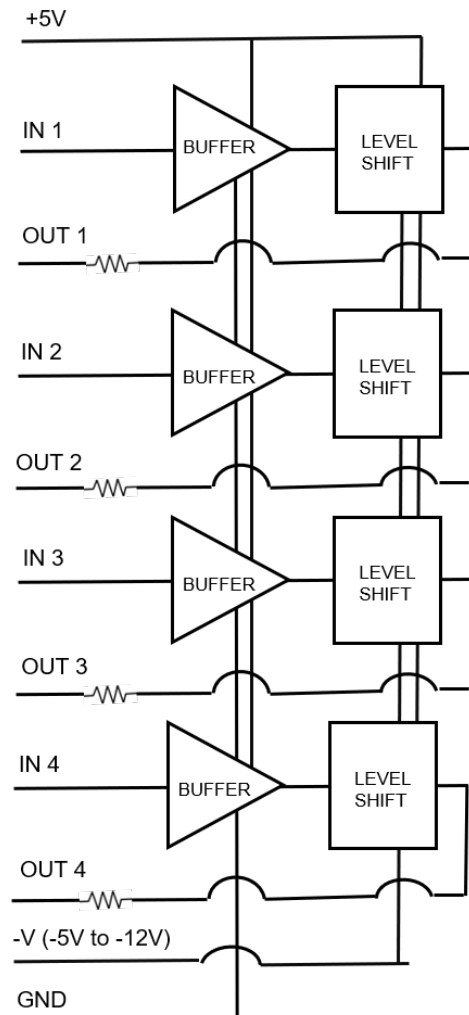
GENERAL DESCRIPTION

The NS455A4 is a driver featuring high speed and wide negative voltage range suited for driving PIN diode switches. The driver is compatible with 3.3/5.0 V CMOS logic and has 4 independent channels to supply each bias line with +/-55 mA current to forward bias the PIN diode and -V from -5 to -12V.

FEATURES

- High reliability hermetic packaging
- high speed smooth symmetric rise fall

FUNCTION BLOCK DIAGRAM

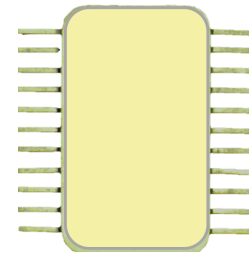


MECHANICAL

The NS455A4 is constructed on an alumina thin film substrate with TaN resistors and discrete wire bonded silicon bipolar transistors. The driver is housed in a hermetic .625" x .395" 22 lead metal package designed for integration into an integrated microwave assembly.

ECCN Code EAR99

NS455A4 contains no solder and is RoHS compliant.



PIN CONNECTIONS

- | | |
|----|-------------|
| 1 | +5 VDC |
| 2 | Input 1 |
| 3 | Output 1 |
| 4 | Input 2 |
| 5 | Output 2 |
| 6 | Input 3 |
| 7 | Output 3 |
| 8 | Input 4 |
| 9 | Output 4 |
| 10 | -5V to -12V |
| 11 | Ground |
| 12 | NC |
| 13 | NC |
| 14 | NC |
| 15 | NC |
| 16 | NC |
| 17 | NC |
| 18 | NC |
| 19 | NC |
| 20 | NC |
| 21 | NC |
| 22 | NC |

TRUTH TABLE

IN1	IN2	IN3	IN4	OUT1	OUT2	OUT3	OUT4
1	1	1	1	+V	+V	+V	+V
0	1	1	1	-V	+V	+V	+V
1	0	1	1	+V	-V	+V	+V
1	1	0	1	+V	+V	-V	+V
1	1	1	0	+V	+V	+V	-V
0	0	0	0	-V	-V	-V	-V

ELECTRICAL SPECIFICATIONS

Vpos +5V, Vneg -12V, TEMP 25C, PRR 250KHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
ABSOLUTE MAXIMUMS						
Vpos	Logic Supply Positive		0		+7	V
Vneg	Supply Voltage Negative		-15		0	V
To	Operating Temperature		-54		+105	Deg C
Ts	Storage Temperature		-65		+150	Deg C
INPUT						
VI_hi	Voltage Input High	TTL/CMOS	2.5	5	5.5	V
VI_low	Voltage Input Low	CMOS	0	.1	.8	V
OUTPUT						
VO_hi	Voltage Out High	open load	4.2	4.5	5.0	V
VO_low	Voltage Out Low	open load	-11.0	-11.5	-12	V
IO_hi	Current Out High	steady state into 1V diode load +5V Vpos, -5V Vneg	50	55	60	mA
IO_low	Current Out Low ** (see note)	steady state into 1V diode load +5V Vpos, -5V Vneg	-50	-55	-60	mA
lopk	Current Peak Output	sink		1.2		A
SUPPLY						
IQC_pos	Quiescent Current Positive	100KHz 50% duty cycle		4		mA
IQC_neg	Quiescent Current Negative	100KHz 50% duty cycle		4		mA
DYNAMIC						
Trise	Time Rise			25		nS
Tfall	Time Fall			25		nS
Td_rise	Delay Rise			10		nS
Td_fall	Delay Fall			10		nS
TSW_rise	Switching Speed Rise	resistive 1V load		40		nS
TSW_fall	Switching Speed Fall	resistive 1V load		40		nS
PRR	Pulse Repetition Rate	10pF load		150		KHz

ESD Sensitivity HBM Class 1B

MECHANICAL SPECIFICATIONS

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

Package Code 3
Type: Housing; Lead Finish: Gold
Length .645 in MAX; Width .395 in MAX; Height .125 in MAX

MARKING SPECIFICATIONS

Logo: Impellimax
Part Number: NS455A4
Date Code: YYWW

