

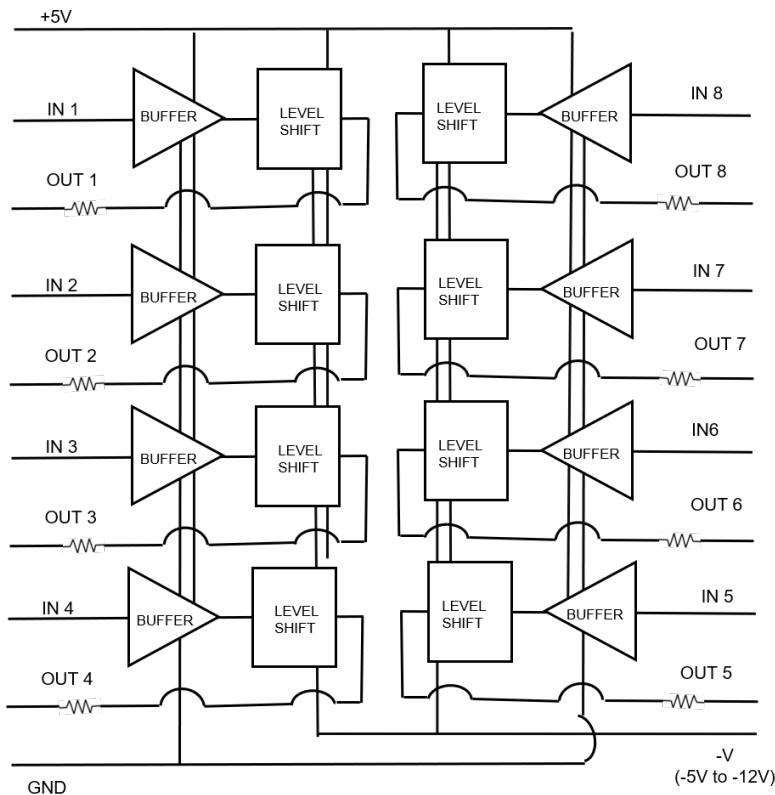
**GENERAL DESCRIPTION**

The NS840A5 is a high speed driver designed to drive PIN diode switches in RF modulators and switches. The driver is compatible with CMOS and TTL logic and has 8 independant non-inverting channels with 40 mA output.

**FEATURES**

- Smooth symmetrical rise fall time
- -5 to -12V output
- hermetic package

**FUNCTION BLOCK DIAGRAM**



**MECHANICAL**

The NS840A5 is composed of silicon discrete BJT's mounted to a thin film substrate with integral TaN resistors. Package is 22 lead .625 square hermetic glass metal flatpack designed for good thermal footprint at high current ideal for integration into microwave assembly which operates in harsh environments of high temperature and vibration.

ECCN Code EAR99

NS840A5 is RoHS 3 (EU 2015/863) compliant.



**PIN CONNECTIONS**

- 1 +5V
- 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 NC
- 11 Ground
- 12 Ground
- 13 NC
- 14 Input 5
- 15 Output 5
- 16 Input 6
- 17 Output 6
- 18 Input 7
- 19 Output 7
- 20 Input 8
- 21 Output 8
- 22 -V (-5V to -12V)

**TRUTH TABLE**

IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	IN 8	OUT 1	OUT2	OUT3	OUT4	OUT5	OUT6	OUT7	OUT8
0	1	1	1	1	1	1	1	-V	+V	+V	+V	+V	+V	+V	+V
1	0	1	1	1	1	1	1	+V	-V	+V	+V	+V	+V	+V	+V
1	1	0	1	1	1	1	1	+V	+V	-V	+V	+V	+V	+V	+V
1	1	1	0	1	1	1	1	+V	+V	+V	-V	+V	+V	+V	+V
1	1	1	1	0	1	1	1	+V	+V	+V	+V	-V	+V	+V	+V
1	1	1	1	1	0	1	1	+V	+V	+V	+V	+V	-V	+V	+V
1	1	1	1	1	1	0	1	+V	+V	+V	+V	+V	+V	-V	+V
1	1	1	1	1	1	1	0	+V	+V	+V	+V	+V	+V	+V	-V

**ELECTRICAL SPECIFICATIONS**

Vpos +5V, Vneg -12V

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>ABSOLUTE MAXIMUMS</b>						
Vpos1	Logic Supply Positive				+7	V
Vneg	Output Supply Negative				-17	V
To	Operating Temperature		-54		+125	Deg C
Ts	Storage Temperature		-65		+150	Deg C
<b>INPUT</b>						
VI_hi	Voltage Input High		1.8	2.5	5	V
VI_low	Voltage Input Low		0	.5	1.8	V
<b>OUTPUT</b>						
VO_hi	Voltage Out High	open load	4	4.5	4.9	V
VO_low	Voltage Out Low	open load	-11.0	-11.4	-11.9	V
IO_hi	Current Out High	PIN diode load forward bias		+40		mA
IO_low	Current Out Low	PIN diode load forward bias		-40		mA
lopk	Current Peak Output			-1.6		A
<b>SUPPLY</b>						
IQC_pos	Quiescent Current Positive	10KHz 50% duty cycle		8		mA
IQC_neg	Quiescent Current Negative	10KHz 50% duty cycle		8		mA
<b>DYNAMIC</b>						
Trise	Time Rise	resistive 1V load		10		nS
Tfall	Time Fall	resistive 1V load		10		nS
Td_rise	Delay Rise	resistive 1V load		20		nS
Td_fall	Delay Fall	resistive 1V load		20		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	Max, 100pF load		500		KHz

ESD Sensitivity HBM Class1B

**MECHANICAL SPECIFICATIONS**

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

Shipping Packaging  
Waffle Packs/trays

Package Code 5  
Type: Housing; Lead Finish: Gold  
Length .645 in MAX; Width .645 in MAX; Height .135 in MAX

**MARKING SPECIFICATIONS**

Logo: IMPELLIMAX  
Part Number: NS840A5  
Date Code: YYWW

