5 Channel +5V/-100V PIN Diode Switch Driver

DATASHEET

MDV050N101D28A

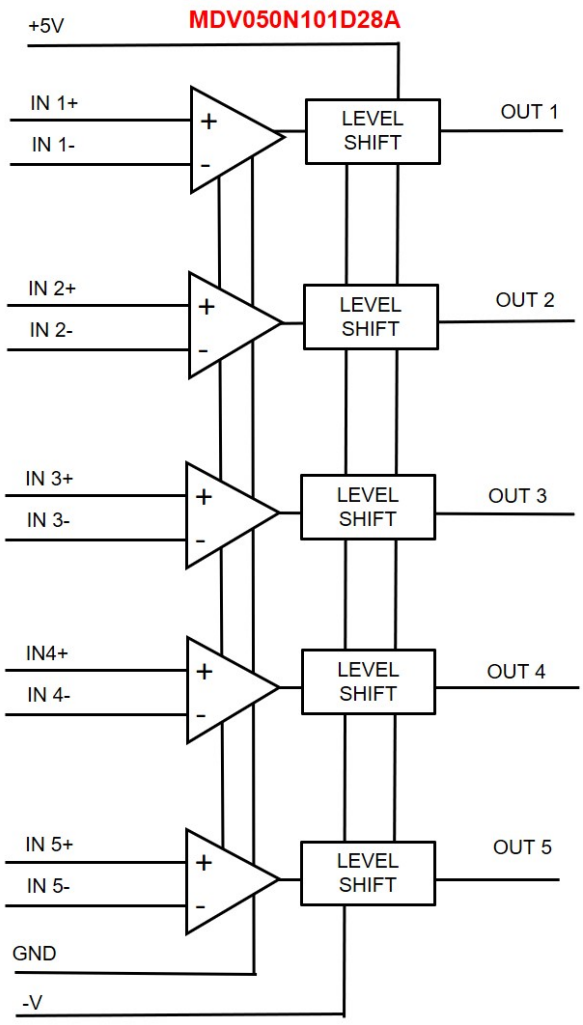
GENERAL DESCRIPTION

The MDV050N101D28A is a 5 channel driver suitable for driving PIN diode elements in loaded line phase shifter.

The MDV050N101D28A accepts standard TTL and CMOS logic, and level shifts them to +4V/ –V adjustable Voltage levels. The driver needs external current limiting for driving individual pin diodes

FEATURES
fast switching less than 250 nS

FUNCTION BLOCK DIAGRAM



MECHANICAL

The MDV050N101D28A is laminate base with discrete bipolar and FETR switching elements encapsulated creating 28 POS DFN package

ECCN Code EAR99

MDV050N101D28A is RoHS 3 (EU 2015/863) compliant.

PIN CONNECTIONS

1	Input 1+	15	NC
2	Input 1-	16	NC
3	Input 2+	17	Output 5
4	Input 2-	18	NC
5	Input 3+	19	Output 4
6	Input 3-	20	NC
7	Input 4+	21	Output 3
8	Input 4-	22	NC
9	Input 5+	23	Output 2
10	Input 5-	24	NC
11	NC	25	Output 1
12	NC	26	NC
13	NC	27	+5V
14	-V -5V to -100V	28	Ground

TRUTH TABLE

IN 1+	IN 1-	IN 2+	IN2-	IN 3+	IN3-	IN 4+	IN 4-	IN 5+	IN 5-	OUT1	OUT2	OUT3	OUT4	OUT5
1	0	1	0	1	0	1	0	1	0	+V	+V	+V	+V	+V
0	1	1	0	1	0	1	0	1	0	-V	+V	+V	+V	+V
1	0	0	1	1	0	1	0	1	0	+V	-V	+V	+V	+V
1	0	1	0	0	1	1	0	1	0	+V	+V	-V	+V	+V
1	0	1	0	1	0	0	1	1	0	+V	+V	+V	-V	+V
1	0	1	0	1	0	1	0	0	1	+V	+V	+V	+V	-V
0	1	0	1	0	1	0	1	0	1	-V	-V	-V	-V	-V

ELECTRICAL SPECIFICATIONS

Vpos1 +5V, Vneg -100V, TEMP 25C, PRR 1KHz

NOTE: Tie unused inputs NI low, INV high

	SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
ABSOLUTE MAXIMUMS							
	Vpos	Logic Supply Positive		0		+7	V
	Vneg	Supply Voltage Negative		-7		0	V
	To	Operating Temperature		-54		+105	Deg C
	Ts	Storage Temperature		-65		+150	Deg C
INPUT							
	VI_hi	Voltage Input High	TTL/CMOS	2.8	4.5	5.5	V
	VI_low	Voltage Input Low	TTL/CMOS	0	.5	1.8	V
OUTPUT							
	VO_hi	Voltage Out High	open load	3.7	4.0	5	V
	VO_low	Voltage Out Low	open load	-98.7	-99	-100	V
	IO_hi	Current Out High	steady state into 1V diode load		100	125	mA
	IO_low	Current Out Low	-5V into 1V diode load		-.01	.1	mA
	Iopk	Current Peak Output	sink		1		A
SUPPLY							
	IQC_pos	Quiescent Current Positive	10KHz 50% duty cycle		40		mA
	IQC_neg	Quiescent Current Negative	100KHz 50% duty cycle		5		mA
DYNAMIC							
	Trise	Time Rise	resistive 1V load		20		nS
	Tfall	Time Fall	resistive 1V load		20		nS
	Td_rise	Delay Rise	resistive 1V load		100		nS
	Td_fall	Delay Fall	resistive 1V load		100		nS
	TSW_rise	Switching Speed Rise	resistive 1V load		150		nS
	TSW_fall	Switching Speed Fall	resistive 1V load		150		nS
	PRR	Pulse Repetition Rate	47pF +200mA resistive and cathode GND PIN diode array		50	75	KHz

ESD Sensitivity HBM Class 1B

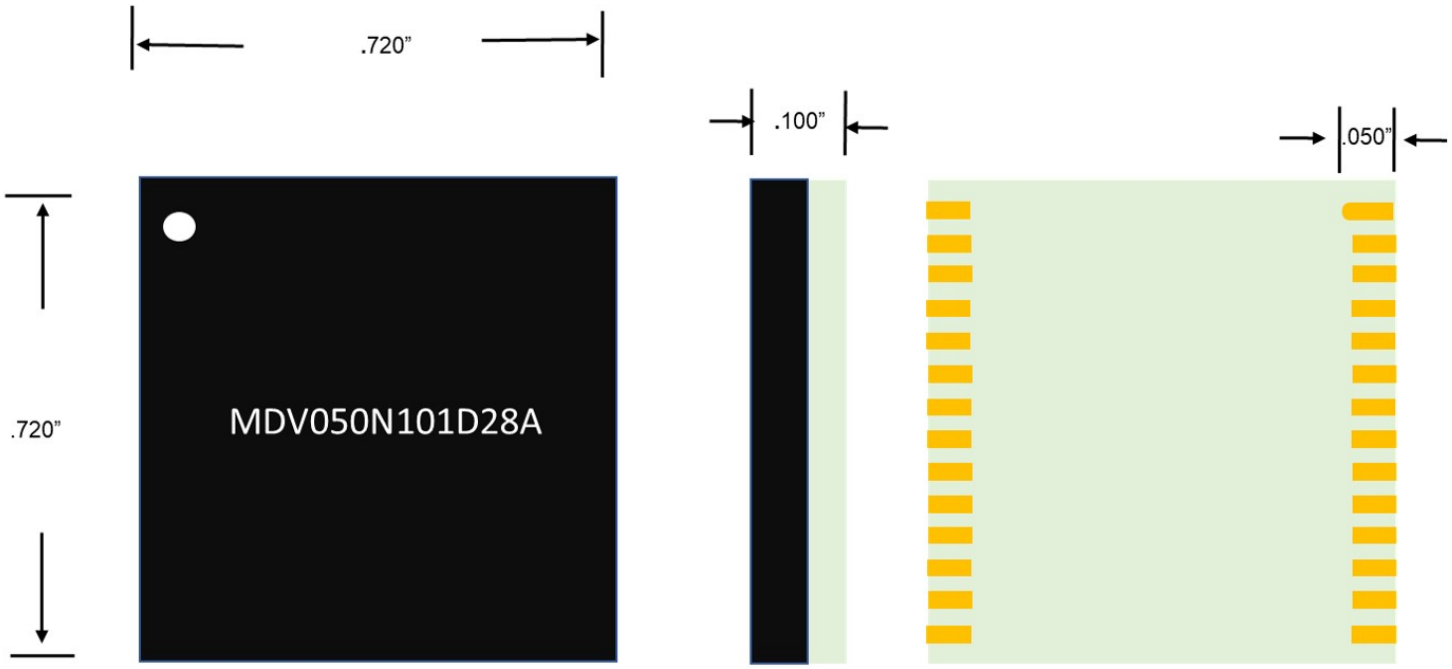
MECHANICAL SPECIFICATIONS

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

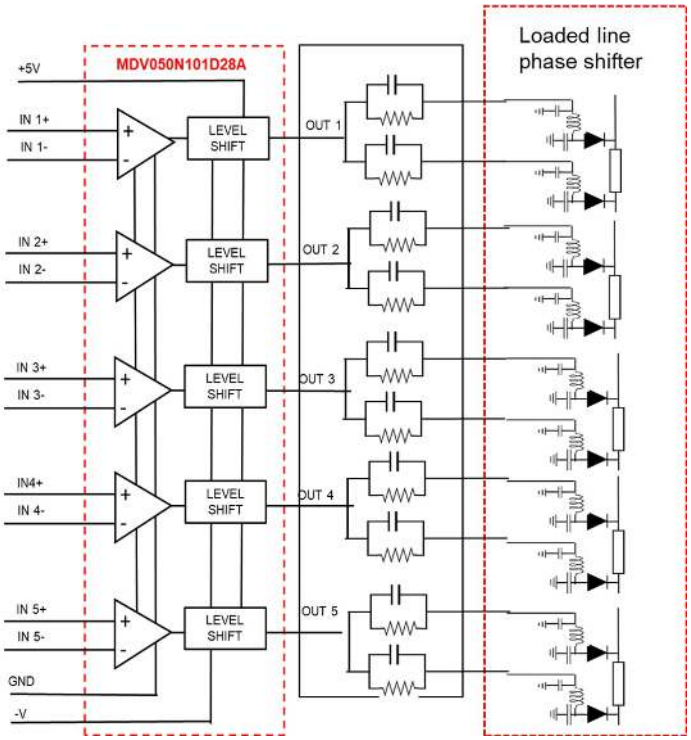
MSL RATING 4 (refer to JEDEC STD 033B)
Shipping Packaging
Waffle Packs/trays

MARKING SPECIFICATIONS

Logo: Impellimax
Part Number: MDV050N101D28A
Date Code: YYWW

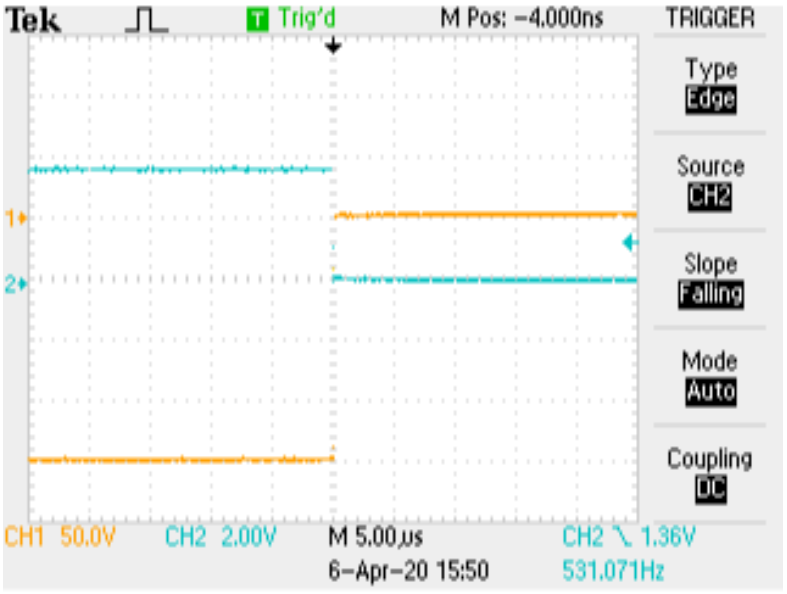


TYPICAL APPLICATION



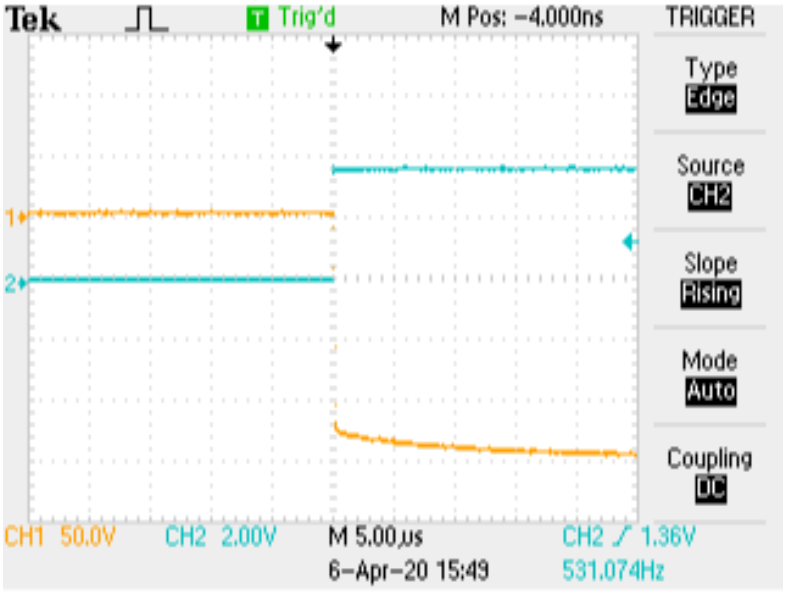
TYPICAL SWITCHING SPEED

WAVEFORM



9848 switching speed rise-1

TYPICAL SWITCHING SPEED



9848 switching speed fall