

## GENERAL DESCRIPTION

The MDD300N050Q12A is a driver featuring high speed suited for driving high speed PIN diode switches.

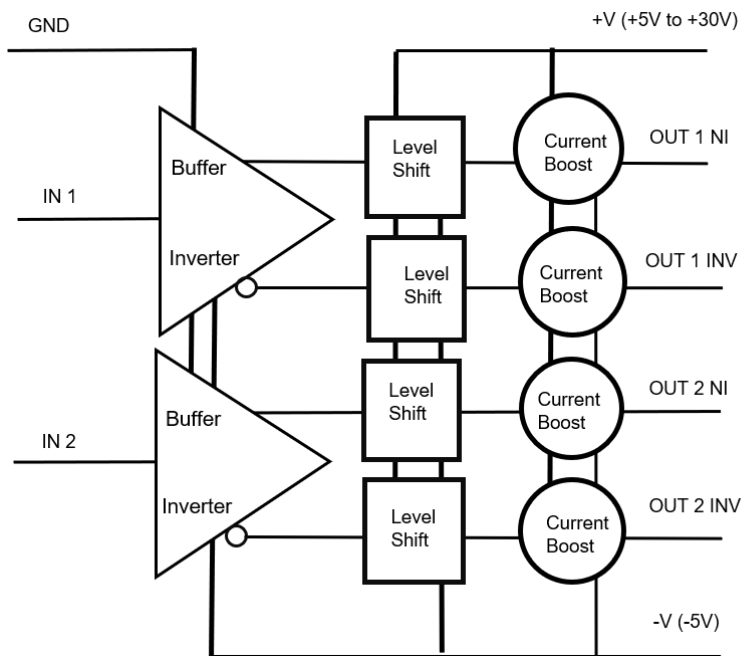
The driver is compatible with TTL logic and has 2 independent channels with complementary outputs to supply output high and low up to -120 mA at -5V and +1 mA at +30V for driving VPIN switches and PIN diode series shunt switches.

External current limiting resistors are required to set current.

## FEATURES

- high speed <20 nS
- Inverting and Non-Inverting outputs
- 6mm QFN-12 Package
- Compatible with industry standard switches: TGS4302, TGS-4304

## FUNCTION BLOCK DIAGRAM

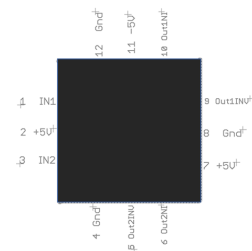


## MECHANICAL

The MDD300N050Q12A consists of multiple components mounted and encapsulated with an epoxy sealant. This forms a 6mm x 6mm 12 POS QFN assembly designed for integration into an Integrated Microwave Assembly .

ECCN Code EAR99

MDD300N050Q12A is RoHS 3 (EU 2015/863) compliant.



## PIN CONNECTIONS

Recommend bypassing Vpos and Vneg with .1 uf capacitor minimum.

- 1 Input 1
- 2 +V (+5V to +30V)
- 3 Input 2
- 4 Ground
- 5 Output 2 Inverting
- 6 Output 2 Noninverting
- 7 +5V to+30V
- 8 Ground
- 9 Output 1 Inverting
- 10 Output 1 Noninverting
- 11 -V (-5V)
- 12 Ground

**TRUTH TABLE**

IN1	IN2	OUT1 NI	OUT1 INV	OUT2 NI	OUT2 INV
0	0	-V	+V	-V	+V
1	1	+V	-V	+V	-V

**ELECTRICAL SPECIFICATIONS**

Vpos +30V, Vneg -5V, TEMP 25C, PRR 500KHz

	SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>INPUT</b>							
	VI_hi	Voltage Input High	TTL/CMOS	2.8	4.5	5.0	V
	VI_low	Voltage Input Low	TTL/CMOS	0	.2	.5	V
<b>OUTPUT</b>							
	VO_hi	Voltage Out High	open load	29.5	29.8	30	V
	VO_low	Voltage Out Low	open load	-4.5	-4.8	-5.0	V
	IO_hi	Current Out High	steady state into 1V diode load		50		mA
	IO_low	Current Out Low	steady state into 1V diode load		50		mA
	lopk	Current Peak Output	sink and source	+/-300			mA
<b>SUPPLY</b>							
	IQC_pos	Quiescent Current Positive	per driver		.1		mA
	IQC_neg	Quiescent Current Negative	per driver		-.1		mA
<b>DYNAMIC</b>							
	TSW_rise	Switching Speed Rise	opposed 1N4148 diode load		15	20	nS
	TSW_fall	Switching Speed Fall	opposed 1N4148 diode load		15	18	nS
	PRR	Pulse Repetition Rate	Max, 10pF load		.5	1	MHz

ESD Sensitivity HBM Class 1B

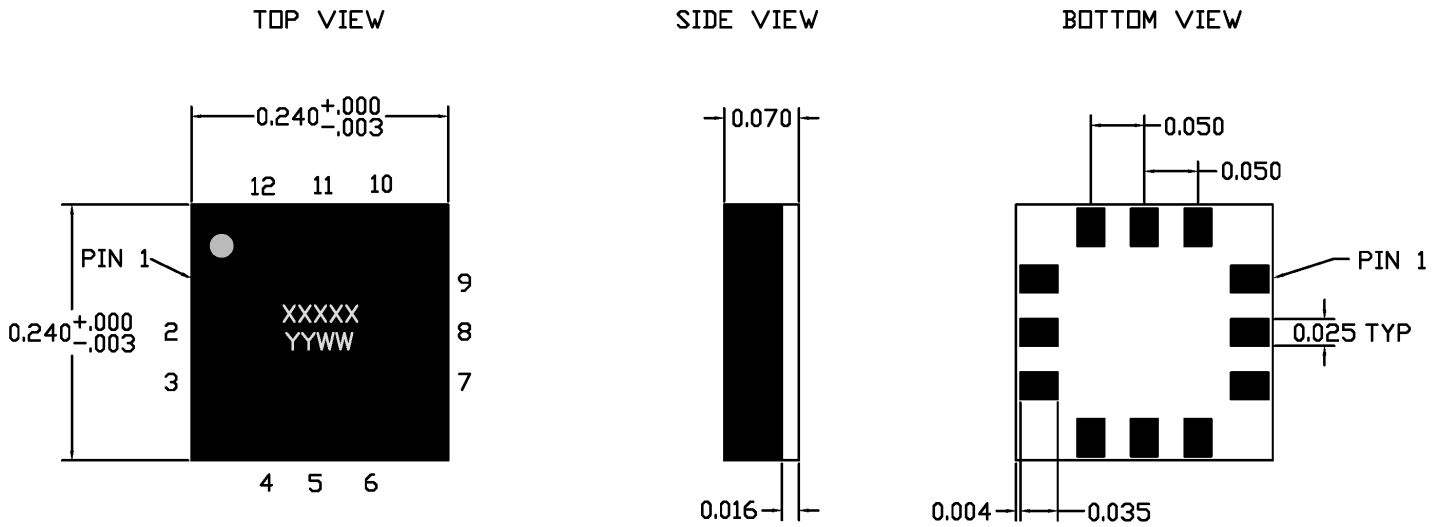
**MECHANICAL SPECIFICATIONS**

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

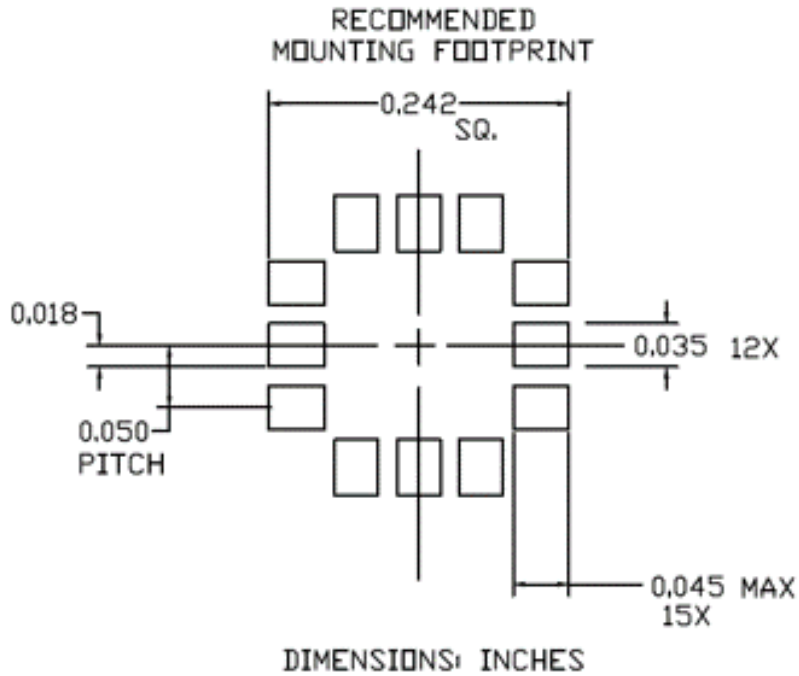
MSL RATING 4 (refer to JEDEC STD 033B)  
 Shipping Packaging  
 Waffle Packs/trays  
 Type: Board  
 Length .240 in NOM; Width .240 in NOM; Height .070 in MAX

**MARKING SPECIFICATIONS**

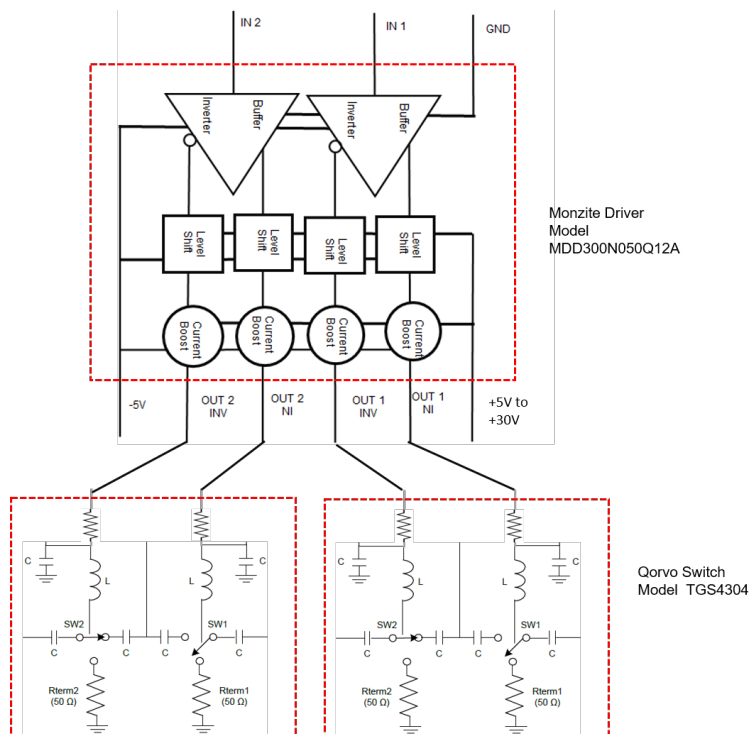
Part Number: 0D96L  
 Date Code: YYWW



FOOTPRINT

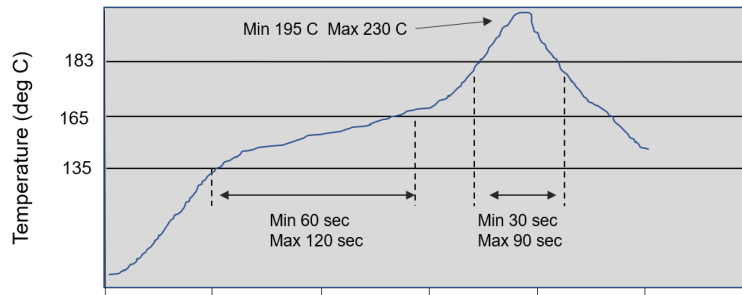


TYPICAL APPLICATION



**SOLDER PROFILE**

SnPb Temperature Profile example



Pb-Free Temperature Profile example

