

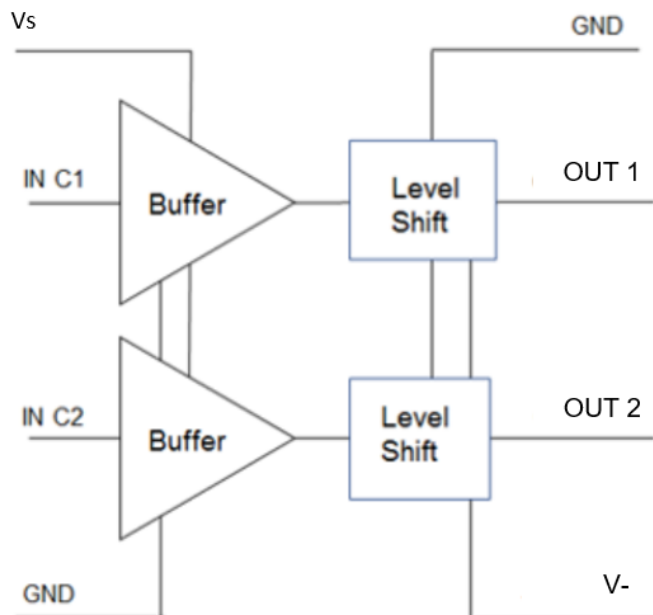
## GENERAL DESCRIPTION

The MDD000N400Q16A is a driver featuring high speed and wide negative voltage range suited for driving SP2T GaN monolithic switch. The driver is compatible with 3.3V/5.0 V CMOS logic and has 2 independent channels to supply each bias line 0V and -5V to -40V to bias the GaN FET on and off.

## FEATURES

- Ultra high speed <20ns
- Independent control for all OFF switch condition
- Drives capacitive loads fast
- Compatible with CMOS FPGA outputs
- Compatible with TGS2352-2, TGS2353-2, TGS2355, QPC1005, QPC1006

## FUNCTION BLOCK DIAGRAM

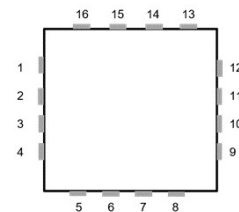


## MECHANICAL

The MDD000N400Q16A consists of multiple components mounted to a laminate substrate and encapsulated with an epoxy sealant using a transfer mold process. This forms a 4 x 4 mm 16 lead QFN SMT assembly designed for integration into an integrated microwave assembly.

ECCN Code EAR99

MDD000N400Q16A is RoHS 3 (EU 2015/863) compliant.



## PIN CONNECTIONS

Pins 2, 8, 11 (V-) are not internally connected, need connection

- |    |                  |
|----|------------------|
| 1  | OUT 1            |
| 2  | V- (-5V to -40V) |
| 3  | IN C1            |
| 4  | Ground           |
| 5  | IN C2            |
| 6  | NC               |
| 7  | NC               |
| 8  | V- (-5V to -40V) |
| 9  | NC               |
| 10 | OUT 2            |
| 11 | V- (-5V to -40V) |
| 12 | +5V              |
| 13 | NC               |
| 14 | NC               |
| 15 | NC               |
| 16 | NC               |

ESD Sensitivity HBM Class 1B

PRR	Pulse Repetition Rate	Max. IOPF load		520	KHz	
T2W <sub>fall</sub>	Switching Speed Fall	IOPF load	50		nS	
T2W <sub>rise</sub>	Switching Speed Rise	IOPF load	50		nS	
Td <sub>fall</sub>	Delay Fall		10		nS	
Td <sub>rise</sub>	Delay Rise		10		nS	
Tfall	Time Fall		3		nS	
Trise	Time Rise		3		nS	
<b>ДЛЯМАІС</b>						
IOC <sub>neg</sub>	Quiescent Current Negative	Steady State	-1		Am	
IOC <sub>pos</sub>	Quiescent Current Positive	Steady State	1		Am	
<b>СУБЪГЛ</b>						
Iobk	Current Peak Output	sink	-100		Am	
IO <sub>low</sub>	Current Out Low	resistor steady state into 1V diode load common an		-50	Am	
IO <sub>hi</sub>	Current Out High	steady state into 1V diode load		50	Am	
VO <sub>low</sub>	Voltage Out Low	open load	-38.4	-38.2	-40	V
VO <sub>hi</sub>	Voltage Out High	open load	-0.1	0	0.5	V
<b>ОУТЪУТ</b>						
VI <sub>low</sub>	Voltage Input Low	TTLCMOS	0	.8	1.5	V
VI <sub>hi</sub>	Voltage Input High	TTLCMOS	5.8	4	8.2	V
<b>ИЪУТ</b>						
ENV10	Storage Temperature		-22		120	Deg C
ENV10	Operating Temperature		-42		112	Deg C
<b>ЕНІВОНМЕНТАГ</b>						

SYMBOL PARAMETER CONDITIONS MIN TYP MAX UNITS

ELECTRICAL SPECIFICATIONS

V<sub>POS</sub> +2V, GND GND, V<sub>NEG</sub> -40V, TEMP 25C, PRR 520KHz

I	I	0V	0V
I	0	0V	-V
0	I	-V	0V
0	0	-V	-V

IN C1 IN C5 OUT 1 OUT 5

TRUTH TABLE