

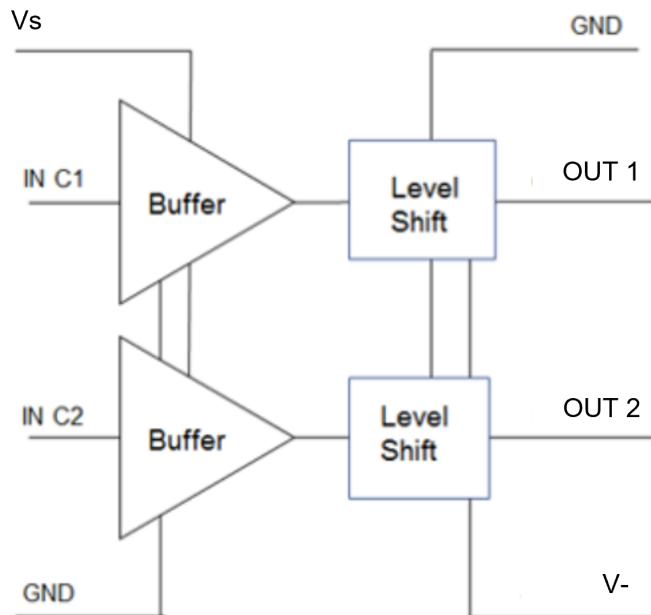
GENERAL DESCRIPTION

The MDD000N400Q16B 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

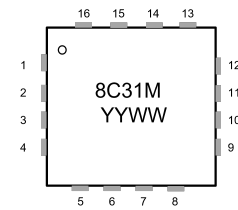


MECHANICAL

The MDD000N400Q16B 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

MDD000N400Q16B 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 | Vs (+3.3V) |
| 13 | NC |
| 14 | NC |
| 15 | NC |
| 16 | NC |

E2D Sensitivity HBM Class 1B

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS	
ELECTRICAL	V ⁻	Supply Voltage Negative	-40	-2	V		
	RRR	Reverse Rejection Rate	Max. 10pF load	220	KHz		
	T2W ⁻ fall	Switching Speed Fall	10pF load	33	nS		
	T2W ⁻ rise	Switching Speed Rise	10pF load	33	nS		
	Td ⁻ fall	Delay Fall		10	nS		
	Td ⁻ rise	Delay Rise		10	nS		
	Tfall	Time Fall		2	nS		
	Trise	Time Rise		2	nS		
DYNAMIC	IOC ⁻ neg	Quiescent Current Negative	1 nS Pulse 10% duty	-2	mA		
	IOC ⁻ pos	Quiescent Current Positive	1 nS Pulse 10% duty	3	mA		
ELECTRICAL	V ⁺	Supply Voltage Positive	5.1	3.3	4.0	V	
	IOBK	Current Peak Output	sink	-100	mA		
	IO ⁻ low	Current Output Low	resistor steady state into 1V diode load common an		-50	mA	
	IO ⁻ hi	Current Output High	steady state into 1V diode load		50	mA	
	VO ⁻ low	Voltage Output Low	open load	-38.4	-38.2	-40	V
ELECTRICAL	VO ⁻ hi	Voltage Output High	open load	-0.1	0	0.5	V
	VI ⁻ low	Voltage Input Low	TTL CMOS	0	5	1.5	V
ELECTRICAL	VI ⁻ hi	Voltage Input High	TTL CMOS	5.8	3.3	2.2	V
	ENV10	Storage Temperature		-22	120	Deg C	
ENVIRONMENTAL	ENV10	Operating Temperature		-42	112	Deg C	

ELECTRICAL SPECIFICATIONS

Vpos +3.3V, GND GND, Vneg -40V, TEMP 25C, RRR 220KHz

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

IN C1 IN C2 OUT 1 OUT 2

TRUTH TABLE