

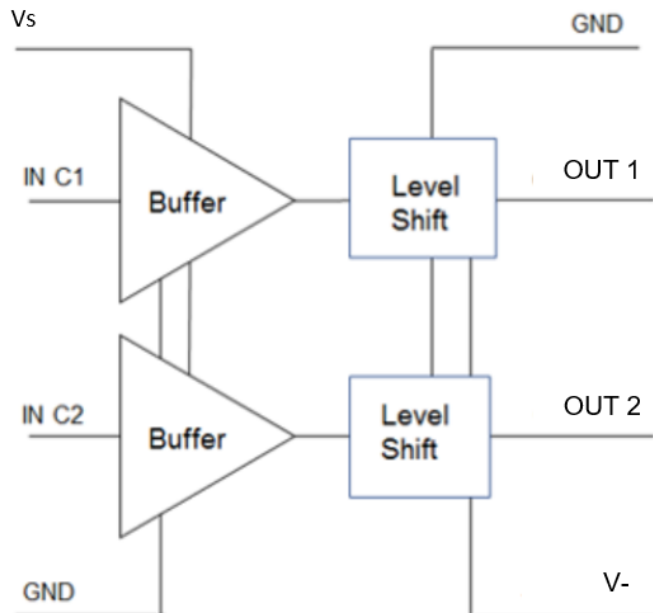
GENERAL DESCRIPTION

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

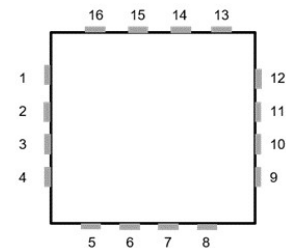


MECHANICAL

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 | Vs (+3.3V/+5V) |
| 13 | NC |
| 14 | NC |
| 15 | NC |
| 16 | NC |

ESD Sensitivity HBM Class 1B

PARAMETER	DESCRIPTION	CONDITIONS	MIN	TYP	MAX	UNITS
PRR	Pulse Rejection Rate	Max. IOPF load			50	KHz
T2W _{fall}	Switching Speed Fall	IOPF load		50		nS
T2W _{rise}	Switching Speed Rise	IOPF load		50		nS
Td _{fall}	Delay Fall			10		nS
Td _{rise}	Delay Rise			10		nS
Tfall	Time Fall			3		nS
Trise	Time Rise			3		nS
DYNAMIC						
IOC _{neg}	Quiescent Current Negative	Steady State		-1		Am
IOC _{pos}	Quiescent Current Positive	Steady State		1		Am
SUPPLY						
Iobk	Current Peak Output	sink		-100		Am
IO _{low}	Current Out Low	resistor steady state into 1V diode load common anm			-50	Am
IO _{hi}	Current Out High	steady state into 1V diode load			50	Am
VO _{low}	Voltage Out Low	open load	-38.4	-38.2	-40	V
VO _{hi}	Voltage Out High	open load	-1.0	0	2.0	V
OUTPUT						
VI _{low}	Voltage Input Low	TTL/CMOS	0	.8	1.5	V
VI _{hi}	Voltage Input High	TTL/CMOS	2.8	4	5.2	V
INPUT						

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
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ELECTRICAL SPECIFICATIONS

V_{POS} +2V, GND GND, V_{NEG} -40V, TEMP 25C, PRR 520KHz

1	1	0V	0V
1	0	0V	-V
0	1	-V	0V
0	0	-V	-V

IN C1 IN C5 OUT 1 OUT 5

TRUTH TABLE