

GENERAL DESCRIPTION

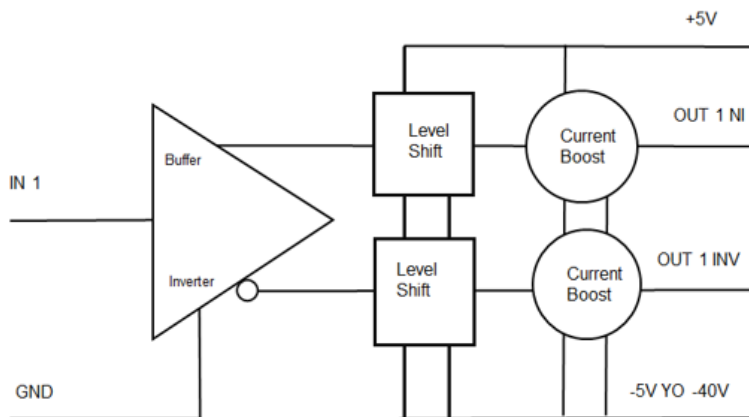
The MDU050N400Q16A is a driver featuring high speed and wide negative voltage range suited for driving SP2T PIN diode monolithic switch.

The driver is compatible with 3.3/5.0 V CMOS logic and has single channel and complementary outputs to supply each bias line in SP2T switch with +5V and -5 to -40V to bias the PIN diodes on and off

FEATURES

- Ultra high speed <20nS
- Drives capacitive loads fast
- Compatible with CMOS FPGA outputs
- Compatible with MASW-010646 MASW-011036 MASW-011098 MASW-011094

FUNCTION BLOCK DIAGRAM

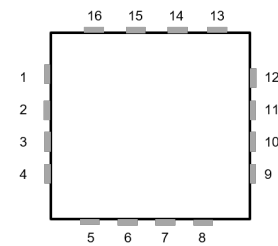


MECHANICAL

The MDU050N400Q16A consists of discrete FET and passive components mounted to a laminate substrate and sealed with a dam and fill process. This forms a 4 x 4 mm 16 lead QFN SMT assembly designed for integration into an integrated microwave assembly.

ECCN Code EAR99

MDU050N400Q16A is RoHS 3 (EU 2015/863) compliant.



PIN CONNECTIONS

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

- | | |
|----|-----------------------|
| 1 | Output 1 Noninverting |
| 2 | -5V to-40V |
| 3 | Input |
| 4 | Ground |
| 5 | NC |
| 6 | NC |
| 7 | NC |
| 8 | -5V to-40V |
| 9 | NC |
| 10 | Output 1 Inverting |
| 11 | -5V to-40V |
| 12 | +5V |
| 13 | NC |
| 14 | NC |
| 15 | NC |
| 16 | NC |

TRUTH TABLE

IN 1	OUT 1 INV	OUT 1 NI
0	+V	-V
1	-V	+V

ELECTRICAL SPECIFICATIONS

Vpos +5V, Vneg -40V, TEMP 25C, PRR 0.5MHz

NOTE: Tie all unused inputs high or low, but not floating.

	SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
INPUT							
	VI_hi	Voltage Input High	3.3V LOGIC	1.8	3.0	3.5	V
	VI_low	Voltage Input Low	3.3V LOGIC	0	.8	1.0	V
OUTPUT							
	VO_hi	Voltage Out High	open load	-0.1	0	0.2	V
	VO_low	Voltage Out Low	open load	-39.6	-39.8	-40	V
	IO_hi	Current Out High	steady state into 1V diode load		100		mA
	IO_low	Current Out Low	steady state into 1V diode load common arm resistor		-100		mA
	lopk	Current Peak Output	sink		-800		mA
SUPPLY							
	IQC_pos	Quiescent Current Positive	0.5MHz 50% duty cycle		1		mA
	IQC_neg	Quiescent Current Negative	0.5MHz 50% duty cycle		-1		mA
DYNAMIC							
	Trise	Time Rise			3		nS
	Tfall	Time Fall			3		nS
	Td_rise	Delay Rise			10		nS
	Td_fall	Delay Fall			10		nS
	TSW_rise	Switching Speed Rise	100 pF bypass & cathode grounded diode load		15		nS
	TSW_fall	Switching Speed Fall	100 pF bypass & cathode grounded diode load		15		nS
	PRR	Pulse Repetition Rate	Max, 10pF load		1.5		MHz

ESD Sensitivity HBM Class 1B

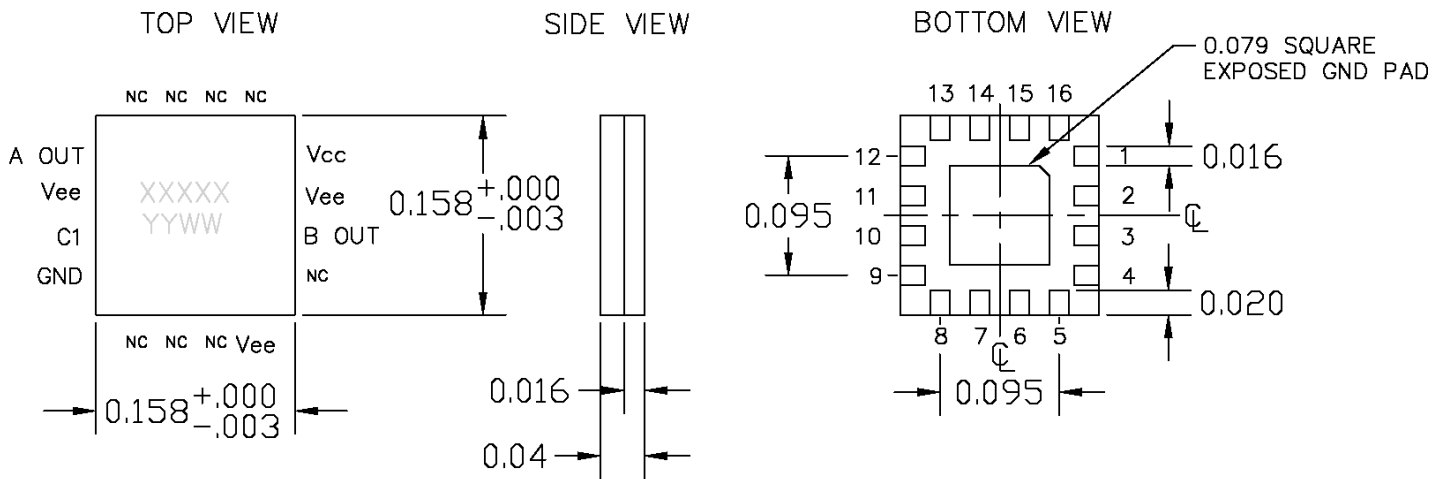
MECHANICAL SPECIFICATIONS

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 .158 in NOM; Width .158 in NOM; Height .040 in MAX

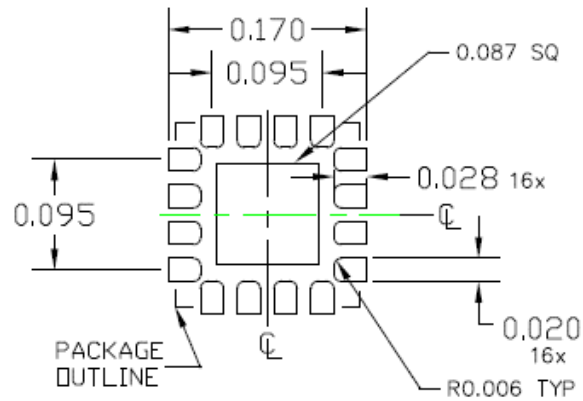
MARKING SPECIFICATIONS

Part Number: UT1P7
 Date Code: YYWW



FOOTPRINT

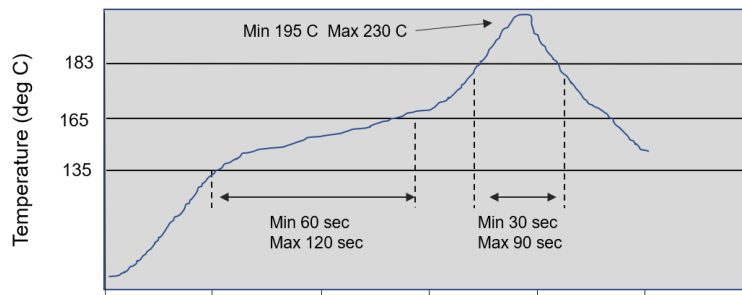
RECOMMENDED
MOUNTING FOOTPRINT



DIMENSIONS: INCHES

SOLDER PROFILE

SnPb Temperature Profile example



Pb-Free Temperature Profile example

