

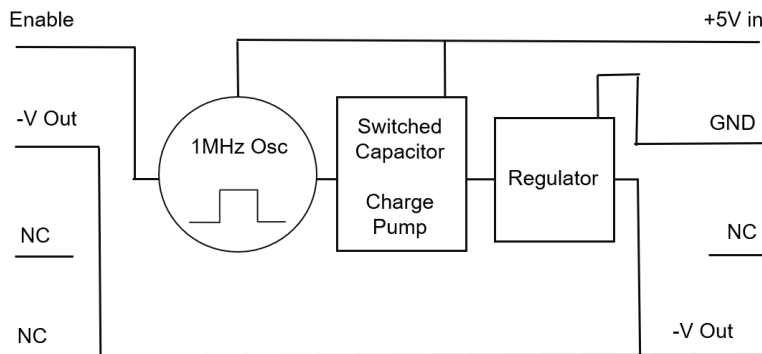
## GENERAL DESCRIPTION

The MCI050N400D08A is a inverting charge-pump multiplier featuring -40V output suited for driving SP2T GaN monolithic switch. Operating from a +5V supply voltage, the MCI050N400D08A uses 8 stages to invert and multiply the +5V into regulated -40V at 4 mA out. The charge pump has a logic enable 3.3/5.0 V Logic level to enable/disable charge-pump (active high). The charge pump will operate with input voltage as low as at 3V with an unregulated output of -24V.

## FEATURES

- 2 MHz Oscillator
- Tiny 6mm x 8mm x 1.8mm DFN
- Output -40V at 4 mA
- Compatible with: TGS2353-2, TGS2352-2, TGS2355 QPC1005, QPC1006

## FUNCTION BLOCK DIAGRAM

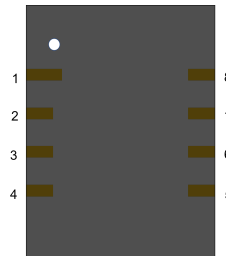


## MECHANICAL

The MCI050N400D08A consists of discrete silicon and cmos IC -bonded to a laminate substrate and sealed with a dam and fill process. This forms a 6 mm x 8 mm, 8 lead DFN SMT assembly designed for integration into an integrated microwave assembly.

ECCN Code EAR99

MCI050N400D08A is RoHS 3 (EU 2015/863) compliant.



## PIN CONNECTIONS

- |   |               |
|---|---------------|
| 1 | Enable        |
| 2 | -V OUT (-40V) |
| 3 | NC            |
| 4 | NC            |
| 5 | -V OUT (-40V) |
| 6 | NC            |
| 7 | Ground        |
| 8 | +5V           |

**TRUTH TABLE**

EN    -VOUT

1    -40v

0    High Z

**ELECTRICAL SPECIFICATIONS**    Vpos +5V

	SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
<b>ENVIRONMENTAL</b>							
	To	Operating Temperature		-45		125	Deg C
	Ts	Storage Temperature		-55		150	Deg C
<b>OUTPUT</b>							
	IO_hi_boost	Output Current			4		mA
	Npk	Noise	1 uF external Bypass Capacitor mounted <.050" from package		50		mVpk
	Eff	efficiency			60		%
<b>SUPPLY</b>							
	V+	Supply Voltage		4.5	5	5.5	V
<b>DYNAMIC</b>							
	F	Oscillator frequency		1.9	2	2.2	MHz
<b>SUPPLY</b>							
	I+	Supply Current		3	3.5	4	mA

ESD Sensitivity HBM Class1B

**MECHANICAL SPECIFICATIONS**

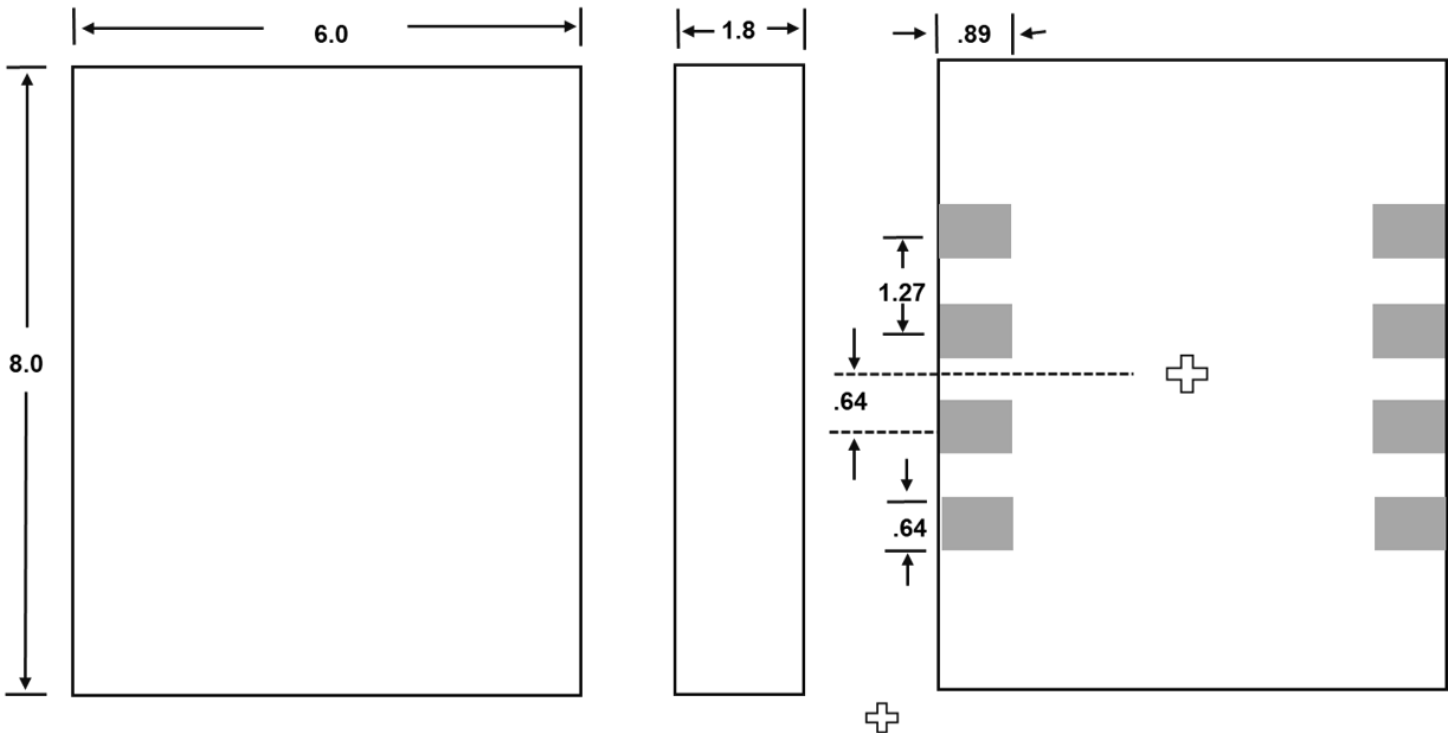
DRAWING NOT TO SCALE. DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.

MSL RATING 4 (refer to JEDEC STD 033B)  
Shipping Packaging  
4" Waffle Packs/trays

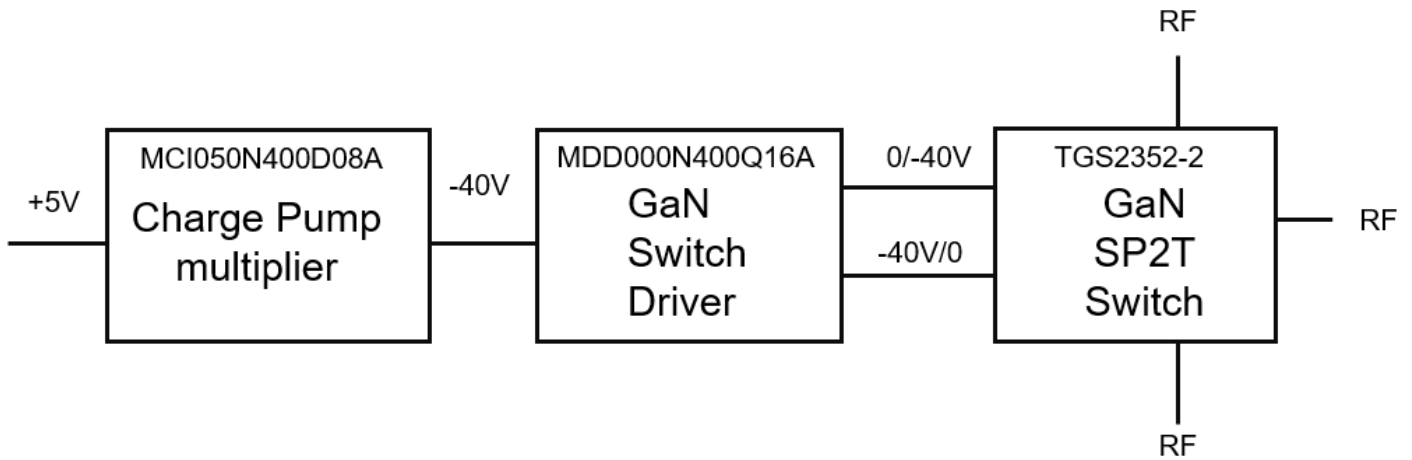
Lead Finish: Gold  
Length 6mm; Width 8mm; Height 1.8mm

**MARKING SPECIFICATIONS**

Part Number: MCI050N400D08A  
Date Code: YYWW

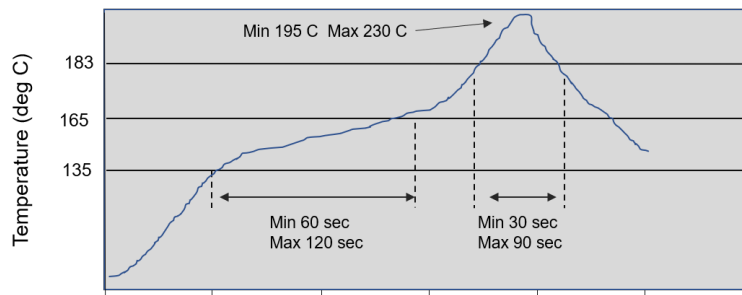


**TYPICAL APPLICATION**



**SOLDER PROFILE**

SnPb Temperature Profile example



Pb-Free Temperature Profile example

