



## MIC5377/8 Evaluation Board

### High Performance Low Dropout 150mA LDO

## General Description

The MIC5377/8 is a low quiescent current, low dropout regulator designed for optimal performance in a small space. When the MIC5378 is disabled an internal resistive load is automatically applied to the output to discharge the output capacitor. The MIC5377/8 is capable of sourcing 150mA of output current while only consuming 29 $\mu$ A of operating current. This high performance LDO offers fast transient response and good PSRR while consuming a minimum of current.

Ideal for battery operated applications; the MIC5377/8 offers low dropout voltage 120mV typically @ 150mA. The MIC5377/8 can also be put into a zero-off-mode current state, drawing virtually no current when disabled.

An input capacitor may be required when the power supply is more than 4-inches from the device. The evaluation board includes an input capacitor of 10 $\mu$ F to compensate for long inductive test leads.

### Requirements

The MIC5377/8 evaluation board requires an input power supply of 400mA with a voltage range of 2.3V to 5.5V to the  $V_{IN}$ .

### Precautions

The evaluation board does not have reverse polarity protection. Applying a negative voltage to the  $V_{IN}$  terminal may damage the device.

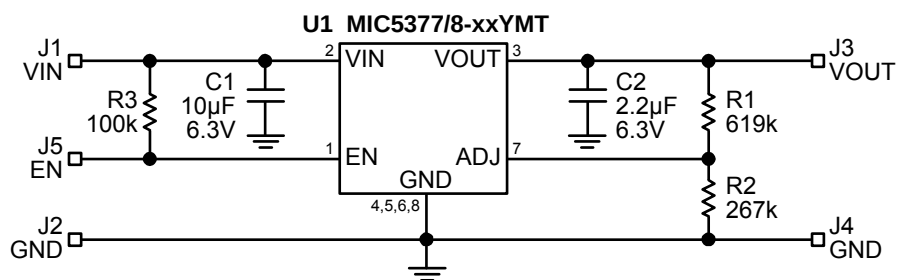
### Getting Started

1. **Connect an external supply to  $V_{IN}$ .** Apply desired input voltage to the  $V_{IN}$  (J1) and ground terminal (J2) of the evaluation board, paying careful attention to polarity and supply voltage. An ammeter may be placed between the input supply and the  $V_{IN}$  terminal to the evaluation board. Ammeter and/or power lead resistance can reduce the voltage supplied to the input.  
Ensure that the supply voltage is monitored at  $V_{IN}$  terminal. There is 1 $\mu$ F capacitor connected from  $V_{IN}$  (J1) to GND (J2).
2. **Enable/Disable the MIC5377/8.** The evaluation board is provided with 10k pull up resistors on enable pin (EN) to  $V_{IN}$ . To disable an output, simply jumper the EN terminal (J5) to the GND terminal (J2). The enable pin must be either pulled high or low. Removing the pull up resistors and leaving the pins floating will cause the regulators to operate in an indeterminate state.
3. **Connect the loads to the  $V_{OUT}$  terminal (J3) and ground terminal (J2).** The load can be either a passive (resistor) or active (electronic load). Be sure to monitor the output voltage at the  $V_{OUT}$  (J3) terminals. The evaluation board has a 1 $\mu$ F capacitor connected from  $V_{OUT}$  (J3) to GND (J2).

## Ordering Information

| Part Number | Description                                                              |
|-------------|--------------------------------------------------------------------------|
| MIC5377YMT  | High Performance Low Dropout 150mA LDO, $V_{OUT}$ = ADJ Evaluation Board |
| MIC5377YC5  | High Performance Low Dropout 150mA LDO, $V_{OUT}$ = ADJ Evaluation Board |
| MIC5378YMT  | High Performance Low Dropout 150mA LDO, $V_{OUT}$ = ADJ Evaluation Board |
| MIC5378YC5  | High Performance Low Dropout 150mA LDO, $V_{OUT}$ = ADJ Evaluation Board |

## Evaluation Board Schematic



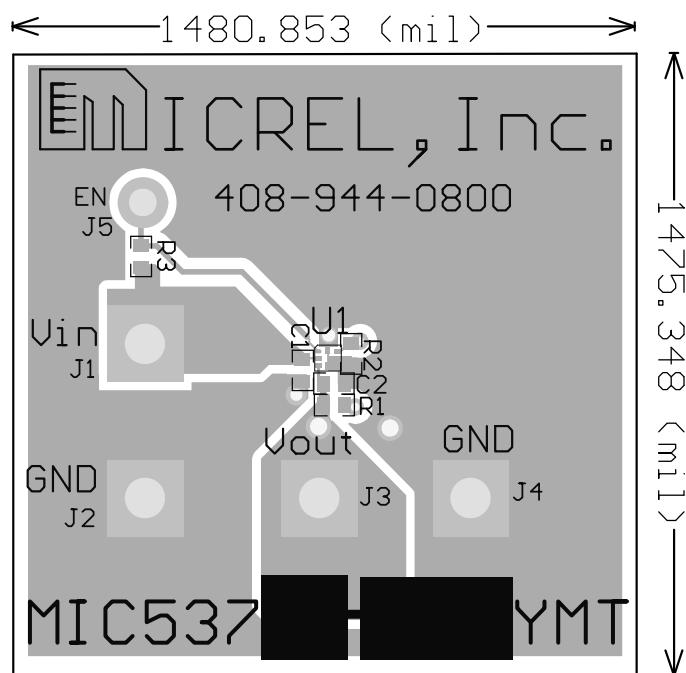
## Bill of Materials

| Item | Part Number        | Manufacturer                | Description                                               | Qty. |
|------|--------------------|-----------------------------|-----------------------------------------------------------|------|
| C2   | JMK105BJ225MV-F    | Taiyo Yuden <sup>(1)</sup>  | Capacitor, 2.2µF, 6.3V, X5R, Size 0402                    | 2    |
|      | GRM155R60G225ME15D | Murata <sup>(2)</sup>       |                                                           |      |
|      | CV05X5R225K10AB    | AVX/Kyocera <sup>(3)</sup>  |                                                           |      |
| C1   | C1608Y5V0J106Z     | TDK <sup>(1)</sup>          | Capacitor, 10µF, 6.3V, X5R, Size 0603                     |      |
| R1   | CRCW0402619KFKEA   | Vishay <sup>(4)</sup>       | Resistor, 619kΩ, 1%, 1/16W, Size 0402                     | 1    |
| R2   | CRCW04022673KFKEA  | Vishay <sup>(4)</sup>       | Resistor, 267kΩ, 1%, 1/16W, Size 0402                     | 1    |
| R3   | CRCW04021003KFKEA  | Vishay <sup>(4)</sup>       | Resistor, 100kΩ, 1%, 1/16W, Size 0402                     | 1    |
| U1   | MIC5377/8-xxYMT    | Micrel, Inc. <sup>(5)</sup> | High Performance 150mA LDO, 8-Pin 1.2mm x 1.2mm Thin MLF® | 1    |

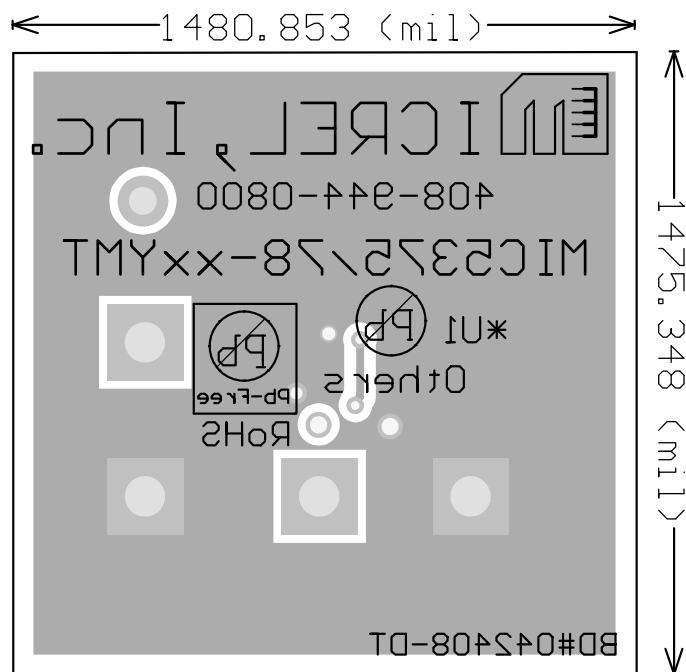
### Notes:

1. Taiyo Yuden:
2. Murata: [www.murata.com](http://www.murata.com)
3. AVX/Kyocera: [www.avx.com](http://www.avx.com)
4. Vishay: [www.vishay.com](http://www.vishay.com)
5. Micrel, Inc.: [www.micrel.com](http://www.micrel.com)

## PCB Layout Recommendations (1.2mm x 1.2mm 8-Pin Thin MLF<sup>®</sup>) Adjustable

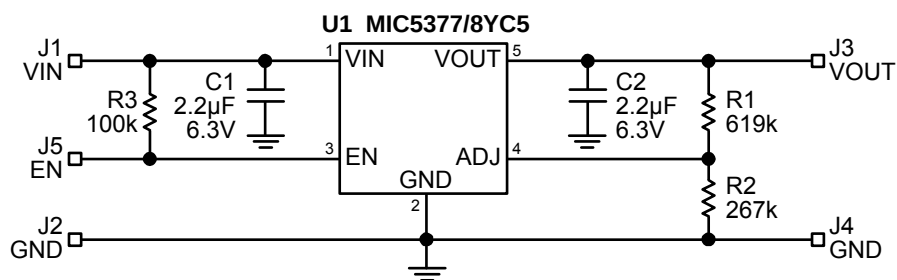


### Top Layer



### Bottom Layer

## Evaluation Board Schematic



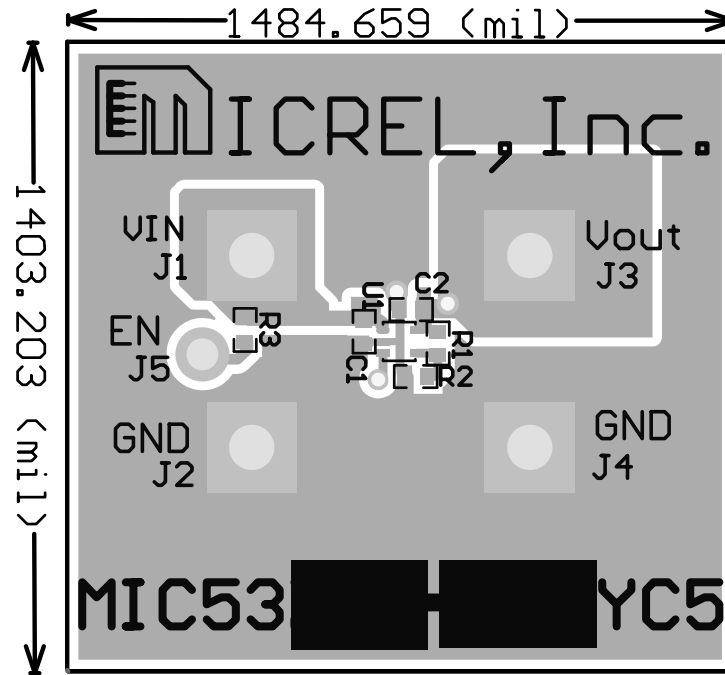
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|--------|--------------------|-----------------------------|-----------------------------------------|------|
| C1, C2 | JMK105BJ225MV-F    | Taiyo Yuden <sup>(1)</sup>  | Capacitor, 2.2µF, 6.3V, X5R, Size 0402  | 2    |
|        | GRM155R60G225ME15D | Murata <sup>(2)</sup>       |                                         |      |
|        | CV05X5R225K10AB    | AVX/Kyocera <sup>(3)</sup>  |                                         |      |
| R1     | CRCW0402619KFKEA   | Vishay <sup>(4)</sup>       | Resistor, 619kΩ, 1%, 1/16W, Size 0402   | 1    |
| R2     | CRCW04022673KFKEA  | Vishay <sup>(4)</sup>       | Resistor, 267kΩ, 1%, 1/16W, Size 0402   | 1    |
| R3     | CRCW04021003KFKEA  | Vishay <sup>(4)</sup>       | Resistor, 100kΩ, 1%, 1/16W, Size 0402   | 1    |
| U1     | MIC5377/8YC5       | Micrel, Inc. <sup>(5)</sup> | High Performance 150mA LDO, 5-Pin SC-70 | 1    |

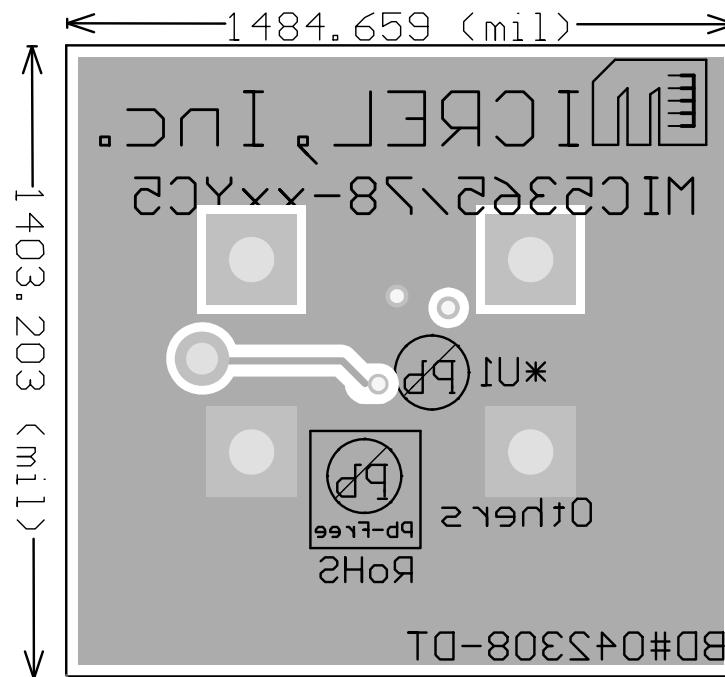
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4. Vishay: [www.vishay.com](http://www.vishay.com)
5. Micrel, Inc.: [www.micrel.com](http://www.micrel.com)

## PCB Layout Recommendations (SC-70-5)



Top Layer



Bottom Layer

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