## Maximum Ratings

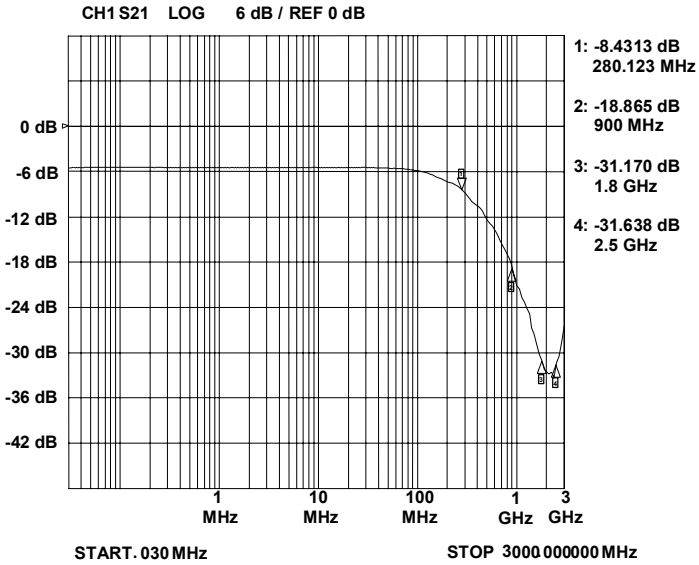
| Rating | Symbol | Value | Units |
|---|---|---|---|
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | +/- 17<br>+/- 12 | kV |
| Junction Temperature | $T_J$ | 125 | °C |
| Operating Temperature | $T_{op}$ | -40 to +85 | °C |
| Storage Temperature | $T_{STG}$ | -55 to +150 | °C |

## Electrical Characteristics

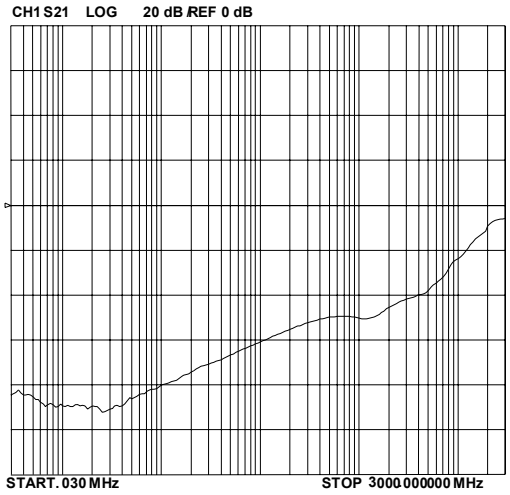
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|---|---|
| TVS Reverse Stand-Off Voltage | $V_{RWM}$ | | | | 5 | V |
| TVS Reverse Breakdown Voltage | $V_{BR}$ | $I_t$ = 1mA | 6 | 8 | 10 | V |
| TVS Reverse Leakage Current | $I_R$ | $V_{RWM}$ = 3.0V | | | 0.5 | µA |
| Total Series Resistance | R | Each Line | 85 | 100 | 115 | Ohms |
| Total Capacitance | $C_{in}$ | Input to Gnd,<br>Each Line<br>$V_R$ = 0V, f = 1MHz | | 16 | 20 | pF |
| Total Capacitance | $C_{in}$ | Input to Gnd,<br>Each Line<br>$V_R$ = 2.5V, f = 1MHz | | 12 | | pF |

## Typical Characteristics

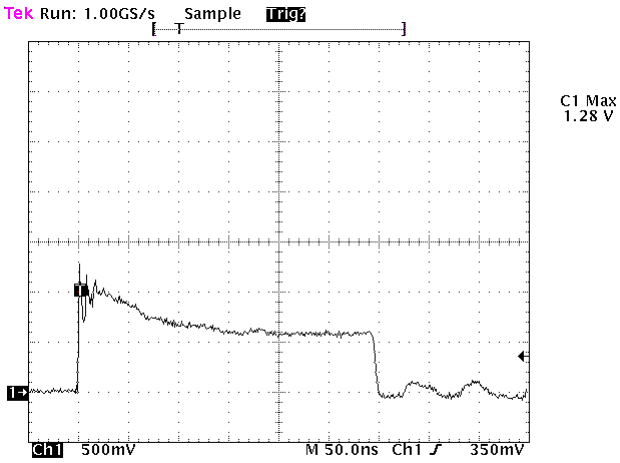
### Typical Insertion Loss S21 (Each Line)



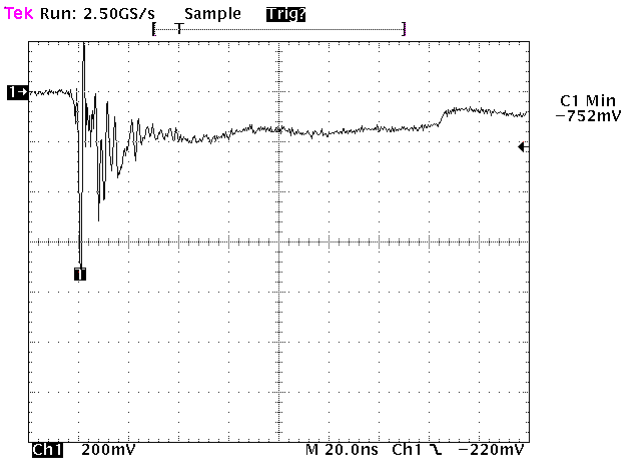

### Analog Crosstalk (Each Line)



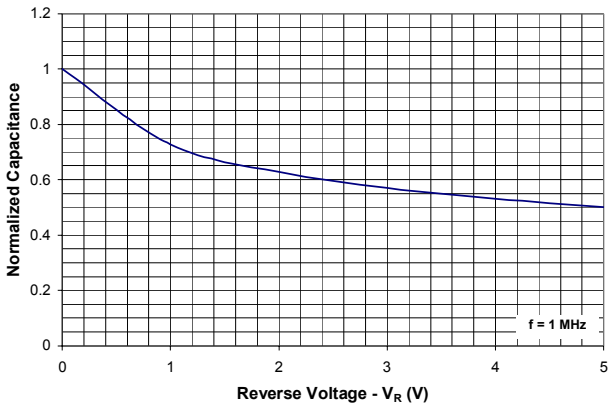

### ESD Clamping (+8kV Contact)



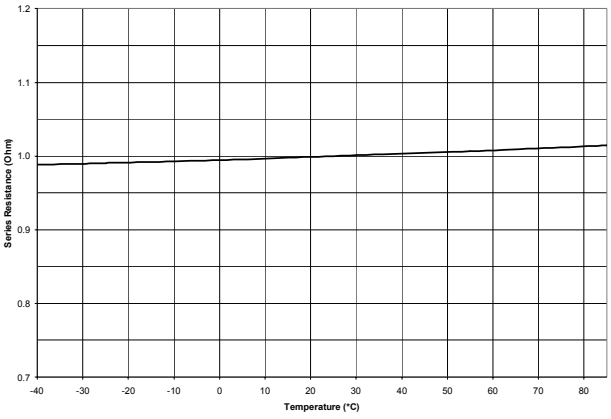

### ESD Clamping (-8kV Contact)




### Capacitance vs. Reverse Voltage (Normalized to 0 volts)




### Series Resistance vs. Temperature (Normalized to 25 Degrees Celcius)



## Applications Information

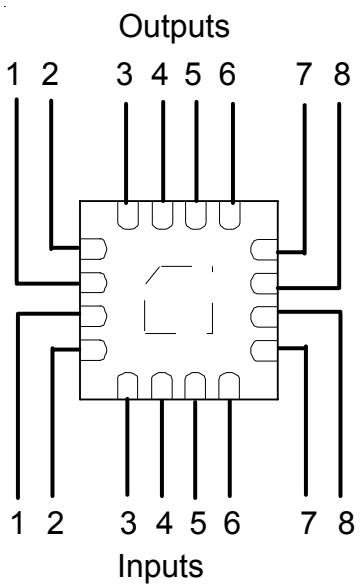
### Device Connection

The EClamp2342N is comprised of eight identical circuits each consisting of a low pass filter for EMI/RFI suppression and dual TVS diodes for ESD protection. The device is housed in a 16-pin Quad Flat No-Lead (QFN) package. Electrical connection is made via 16 pins located at the bottom of the device. A center tab serves as the ground connection. Pin connections are noted in the table to the right. The device is symmetrical and designed for easy PCB routing as shown in the layout example below. All path lengths should be kept as short as possible to minimize the effects of parasitic inductance in the board traces.

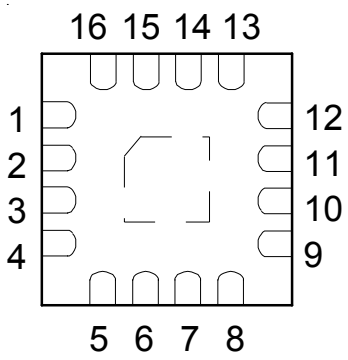
### Matte Tin Lead Finish

Matte tin has become the industry standard lead-free replacement for SnPb lead finishes. A matte tin finish is composed of 100% tin solder with large grains. Since the solder volume on the leads is small compared to the solder paste volume that is placed on the land pattern of the PCB, the reflow profile will be determined by the requirements of the solder paste. Therefore, these devices are compatible with both lead-free and SnPb assembly techniques. In addition, unlike other lead-free compositions, matte tin does not have any added alloys that can cause degradation of the solder joint.

### Layout Example (Top Side View)

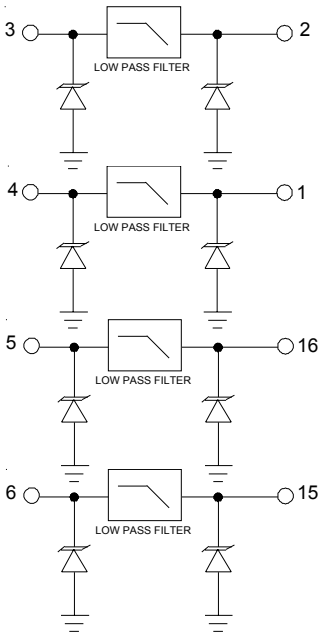



### Pin Identification and Configuration (Top Side View)

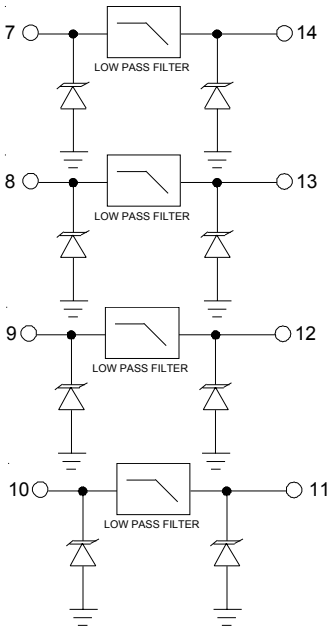



| Pin | Identification |
|---|---|
| 3 - 10 | Input, Lines 1, 2, 3, 4, 5, 6, 7, 8 |
| 1, 2, 11 - 16 | Output Lines 1, 2, 3, 4, 5,6, 7, 8 |
| Center Tab | Ground |

### Pin Configuration and Schematic

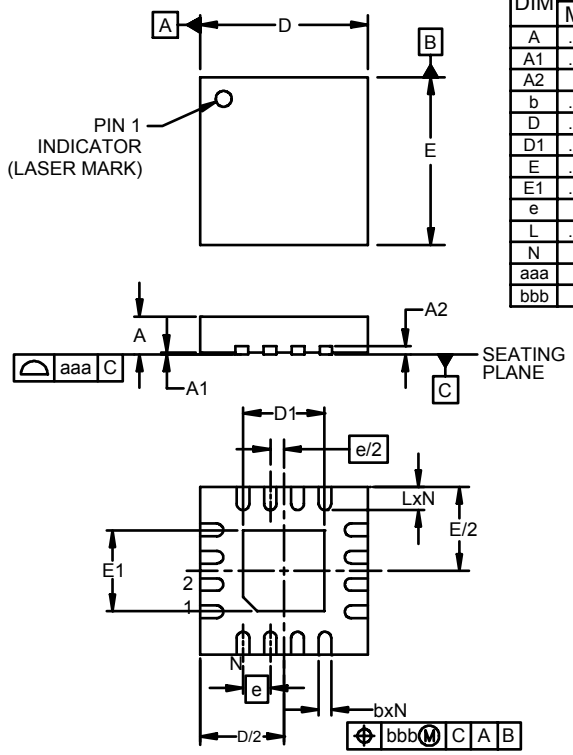



I/O Lines 1 - 4




I/O Lines 5 - 8

## Outline Drawing - 16L QFN

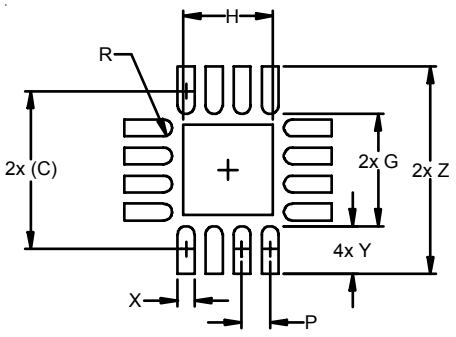



| DIM | INCHES | | | MILLIMETERS | | |
|---|---|---|---|---|---|---|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | .031 | - | .040 | 0.80 | - | 1.00 |
| A1 | .000 | - | .002 | 0.00 | - | 0.05 |
| A2 | - | (.008) | - | - | (0.20) | - |
| b | .007 | .010 | .012 | 0.18 | 0.25 | 0.30 |
| D | .114 | .118 | .122 | 2.90 | 3.00 | 3.10 |
| D1 | .051 | .057 | .061 | 1.30 | 1.45 | 1.55 |
| E | .114 | .118 | .122 | 2.90 | 3.00 | 3.10 |
| E1 | .051 | .057 | .061 | 1.30 | 1.45 | 1.55 |
| e | .020 BSC | | | 0.50 BSC | | |
| L | .012 | .016 | .020 | 0.30 | 0.40 | 0.50 |
| N | 16 | | | 16 | | |
| aaa | .003 | | | 0.08 | | |
| bbb | .004 | | | 0.10 | | |

NOTES:

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.

## Land Pattern - 16L QFN

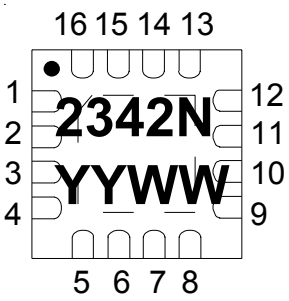



| DIMENSIONS | | |
|---|---|---|
| DIM | INCHES | MILLIMETERS |
| C | (.112) | (2.85) |
| G | .079 | 2.00 |
| H | .063 | 1.60 |
| R | .006 | 0.15 |
| P | .020 | 0.50 |
| X | .012 | 0.30 |
| Y | .033 | 0.85 |
| Z | .146 | 3.70 |

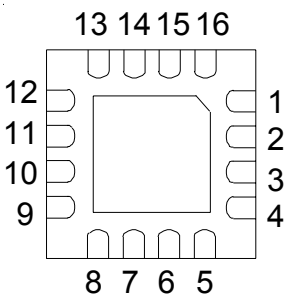
NOTES:

1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

## Marking




**Top View Showing Device Marking**




**Bottom View Showing Pin 1 Identifier**

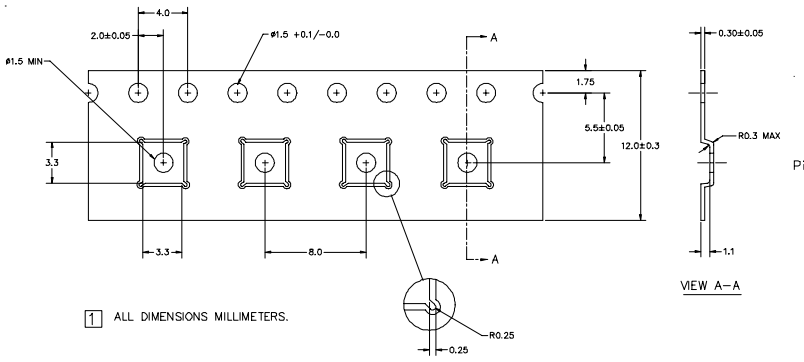
Notes:
1) YYWW = Date Code (example: 0410 = 2004 year Week 10
2) Pin 1 indicated by bevel on the ground pad

## Ordering Information

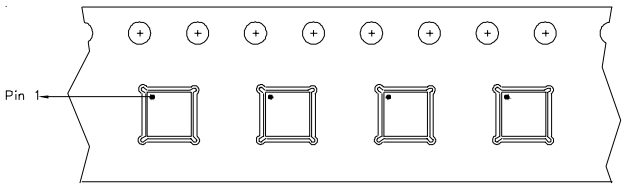
| Part Number | Qty per Reel | Reel Size |
|---|---|---|
| EClamp2342N.TCT | 3000 | 7 Inch |

EMIClamp and EClamp are marks of Semtech Corporation

## Tape and Reel Specification




**Tape Specifications**




**Device Orientation in Tape**

## Contact Information

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