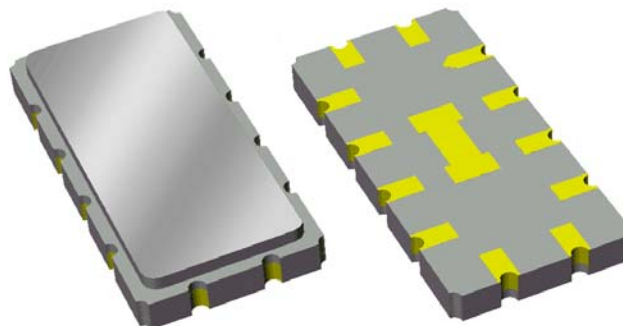


# Data Sheet

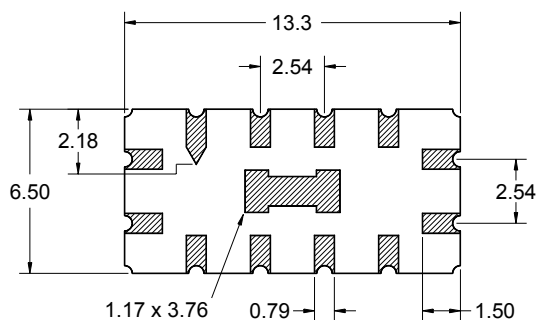
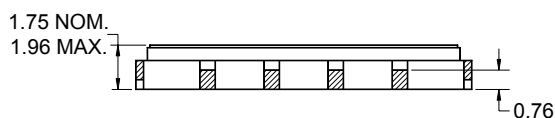
## Features

- Usable bandwidth of 6.85 MHz
- Typical 3 dB bandwidth of 7.148 MHz
- Low loss
- High attenuation
- Single-ended operation, 50Ω
- Ceramic Surface Mount Package (SMP)
- Hermetic



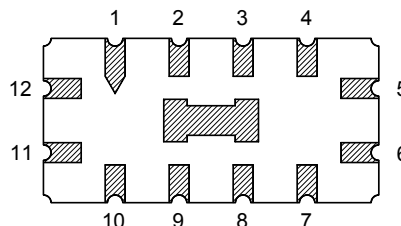
## Package

Surface Mount 13.30 x 6.50 x 1.75 mm



## Pin Configuration

Bottom View



| Pin No.  | Description |
|----------|-------------|
| 5        | Output      |
| 11       | Input       |
| 6,12     | Ground      |
| 1,2,3,4  | Case Ground |
| 7,8,9,10 | Case Ground |

Dimensions shown are nominal in millimeters  
All tolerances are  $\pm 0.15$ mm except overall  
length and width  $\pm 0.10$ mm

Body:  $Al_2O_3$  ceramic

Lid: Kovar, Ni plated

Terminations: Au plating 0.5 - 1.0μm,  
over a 2 - 6μm Ni plating

# Data Sheet

## Electrical Specifications <sup>(1)</sup>

Operating Temperature: <sup>(2)</sup> +25 °C

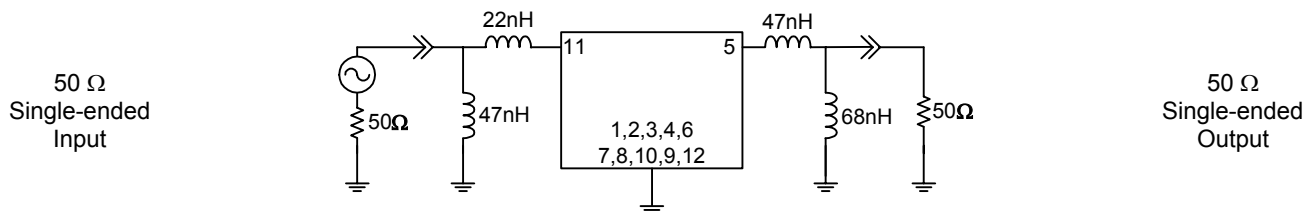
| Parameter                                  | Minimum | Typical | Maximum | Unit   |
|--------------------------------------------|---------|---------|---------|--------|
| Center Frequency                           | 139.6   | 140     | 140.4   | MHz    |
| Insertion Loss at F <sub>0</sub>           | -       | 5.5     | 7.5     | dB     |
| 1 dB Bandwidth                             | 5.8     | 6.1     | -       | MHz    |
| 3 dB Bandwidth                             | 6.85    | 7.148   | -       | MHz    |
| 40 dB Bandwidth                            | -       | 10.58   | 11.1    | MHz    |
| Passband Ripple<br>137.6 - 142.4 MHz       | -       | 0.67    | 1       | dB     |
| Phase Linearity<br>137.6 - 142.4 MHz       | -       | 6       | 14      | deg    |
| Group Delay Variation<br>137.6 - 142.4 MHz | -       | 96      | 200     | nsec   |
| Absolute Delay                             | -       | 1.1     | -       | μsec   |
| Temperature Coefficient                    | -       | -94     | -       | ppm/°C |
| Source Impedance <sup>(3)</sup>            | -       | 50      | -       | Ω      |
| Load Impedance <sup>(3)</sup>              | -       | 50      | -       | Ω      |

### Notes:

1. All specifications are based on the test circuit shown below
2. All specifications are tested at room temperature only
3. This is the optimum impedance in order to achieve the performance shown

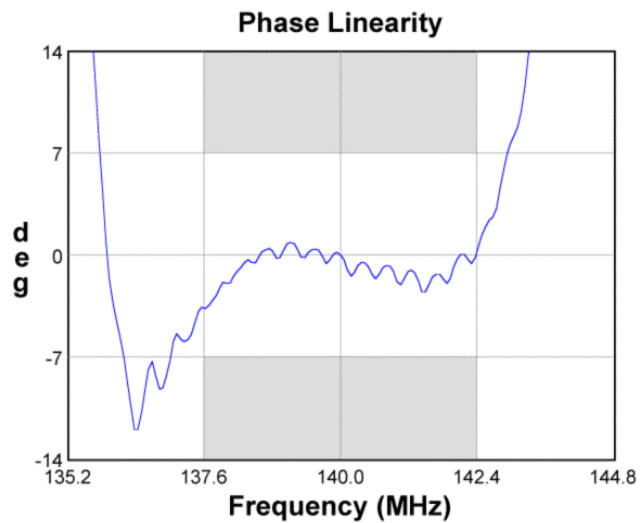
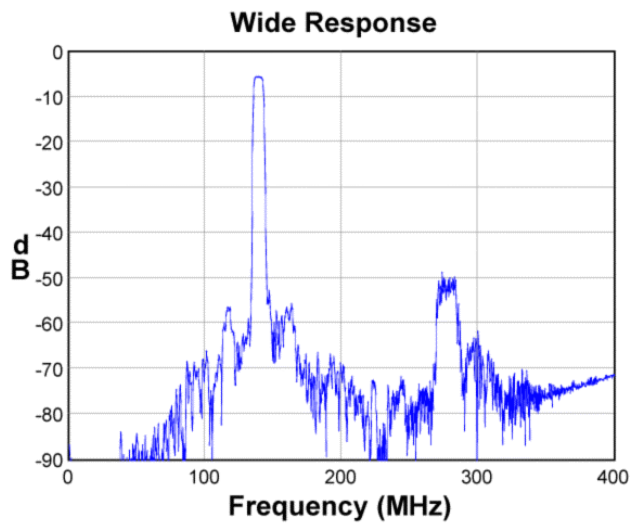
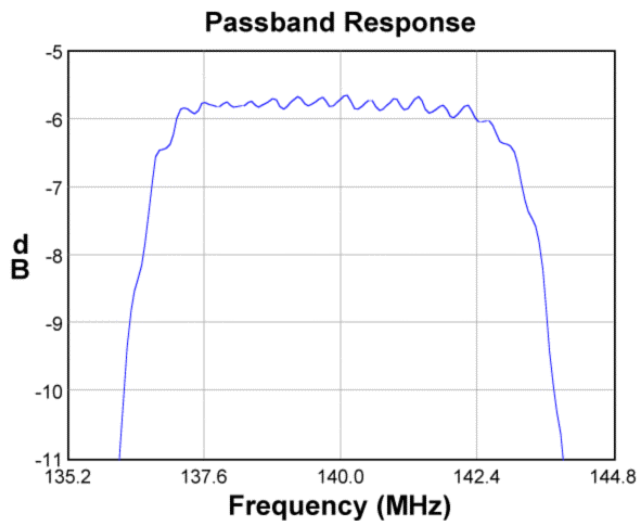
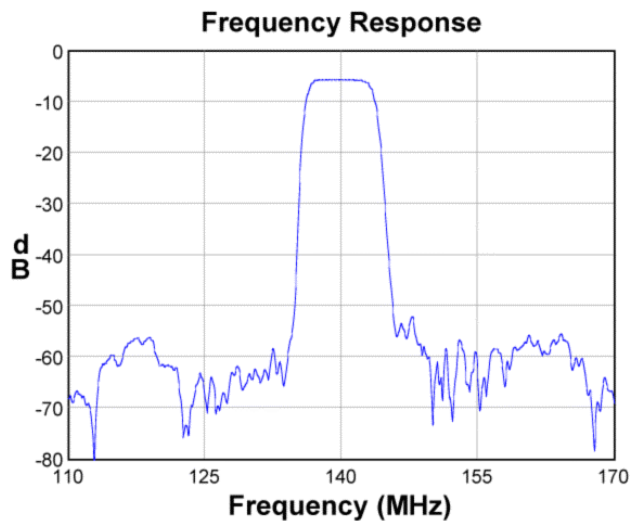
### Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

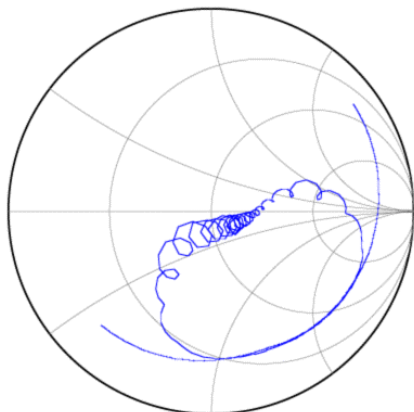


# Data Sheet

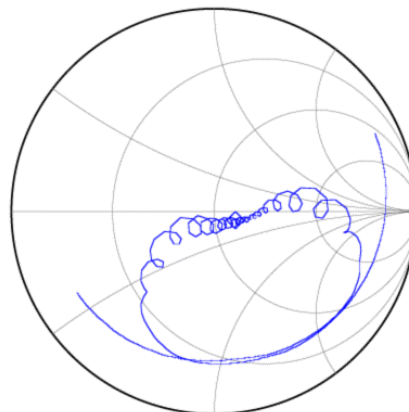
## Typical Performance (at +25°C)



**Input Smith Chart**



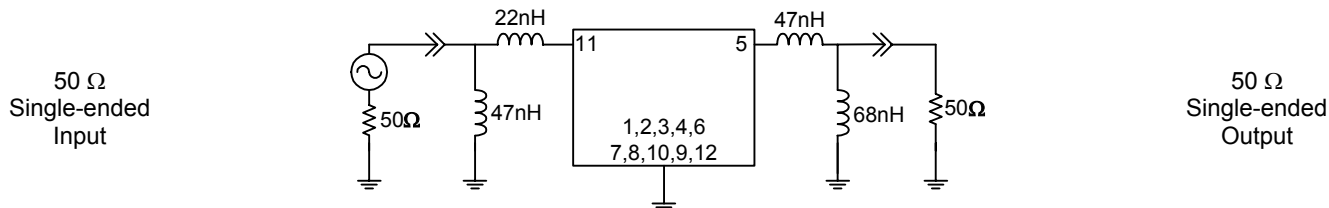
**Output Smith Chart**



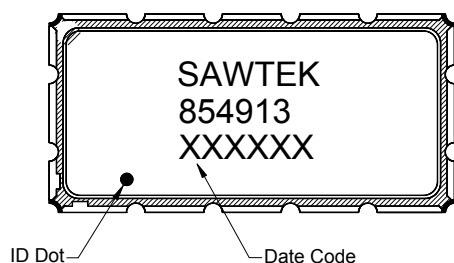
# Data Sheet

## Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

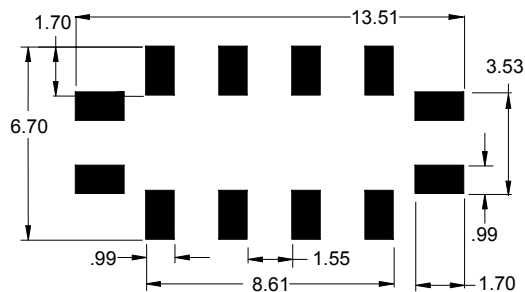


## Marking



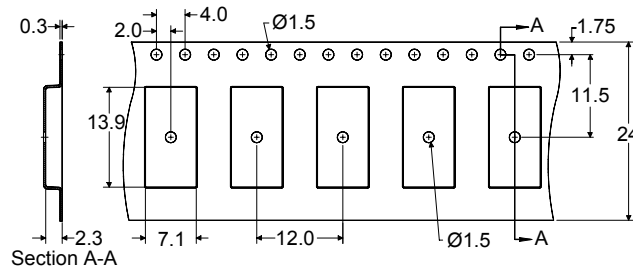
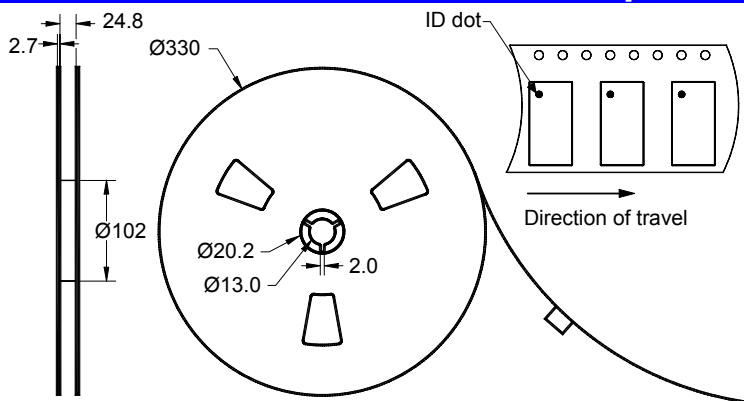
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

## PCB Footprint



This footprint represents a recommendation only  
Dimensions shown are nominal in millimeters

## Tape and Reel



Dimensions shown are nominal in millimeters  
Packaging quantity: 2000 units/reel

## Data Sheet

### Maximum Ratings

| Parameter                 | Symbol           | Minimum | Maximum | Unit |
|---------------------------|------------------|---------|---------|------|
| Storage Temperature Range | T <sub>stg</sub> | -40     | +85     | ° C  |

### Warnings

- Electrostatic Sensitive Device (ESD)
- Avoid ultrasonic exposure



### Material Content

- Does not contain lead (Pb) or other RoHS restricted materials

### Links to Additional Technical Information

[PCB Layout Tips](#)[Qualification Flowchart](#)[Soldering Profile](#)[S-Parameters](#)[Other Technical Information](#)

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