

857165

1000 MHz SAW Non Dispersive Delay Line

TriQuint 
SEMICONDUCTOR

Applications

- RADAR processing and simulation
- EW receivers
- Communication systems

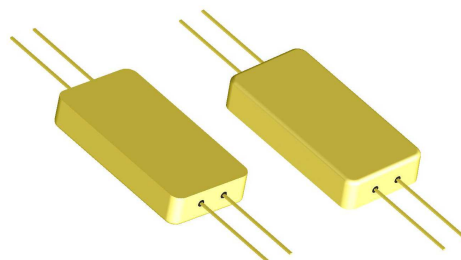
Product Features

- Usable bandwidth 600 MHz
- Low amplitude variation
- No matching required for 50 ohm environment
- Single-ended operation
- Kovar 4 pin flatpack
- Small Size
- Dimensions: 1 x 0.5 x 0.2 in.

General Description

The 857165 is a high-performance non-dispersive SAW delay line with a center frequency of 1000 MHz and a usable bandwidth of 600 MHz. It is suitable for a wide variety of applications, including RADAR and EW receivers.

It features wide bandwidth with excellent attenuation, and is designed to be used with a single ended input and output.



Functional Block Diagram

Top view



Pin Configuration

| Pin # SE | Description |
|----------|---------------|
| 1 | Input |
| 2 | Input Return |
| 3 | Output |
| 4 | Output Return |

Ordering Information

| Part No. | Description |
|----------|---------------|
| 857165 | packaged part |

Specifications

Electrical Specifications ⁽¹⁾

Specified Temperature Range: ⁽²⁾ -55 to +85 °C

| Parameter ⁽³⁾ | Conditions | Min | Typical ⁽⁴⁾ | Max | Units |
|--|-----------------|-----|------------------------|--------|-------|
| Center Frequency | | - | 1000 | - | MHz |
| Insertion Loss | 700 – 1300 MHz | - | 31 | 35 | dB |
| 3 dB Bandwidth | | 675 | 703 | - | MHz |
| Amplitude Variation ⁽⁵⁾ | 700 – 1300 MHz | - | 1 | 2.25 | dB |
| Absolute Delay | | - | 1.75 | - | μs |
| Absolute Attenuation ⁽⁶⁾ | 10 – 450 MHz | 70 | 82 | - | dB |
| | 1625 – 2000 MHz | 70 | 76 | - | dB |
| Input VSWR | 700 – 1300 MHz | - | 4.44:1 | 5.75:1 | |
| Output VSWR | 700 – 1300 MHz | - | 4.82:1 | 5.75:1 | |
| Source Impedance (single-ended) ⁽⁷⁾ | | - | 50 | - | Ω |
| Load Impedance (single-ended) ⁽⁷⁾ | | - | 50 | - | Ω |

Notes:

1. All specifications are based on the TriQuint schematic for the main reference design shown on page 3.
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature.
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances.
4. Typical values are based on average measurements at room temperature.
5. Is defined as the difference between the maximum and minimum loss within the specified frequency range.
6. Relative to 0 dB.
7. This is the optimum impedance in order to achieve the performance shown.

Absolute Maximum Ratings

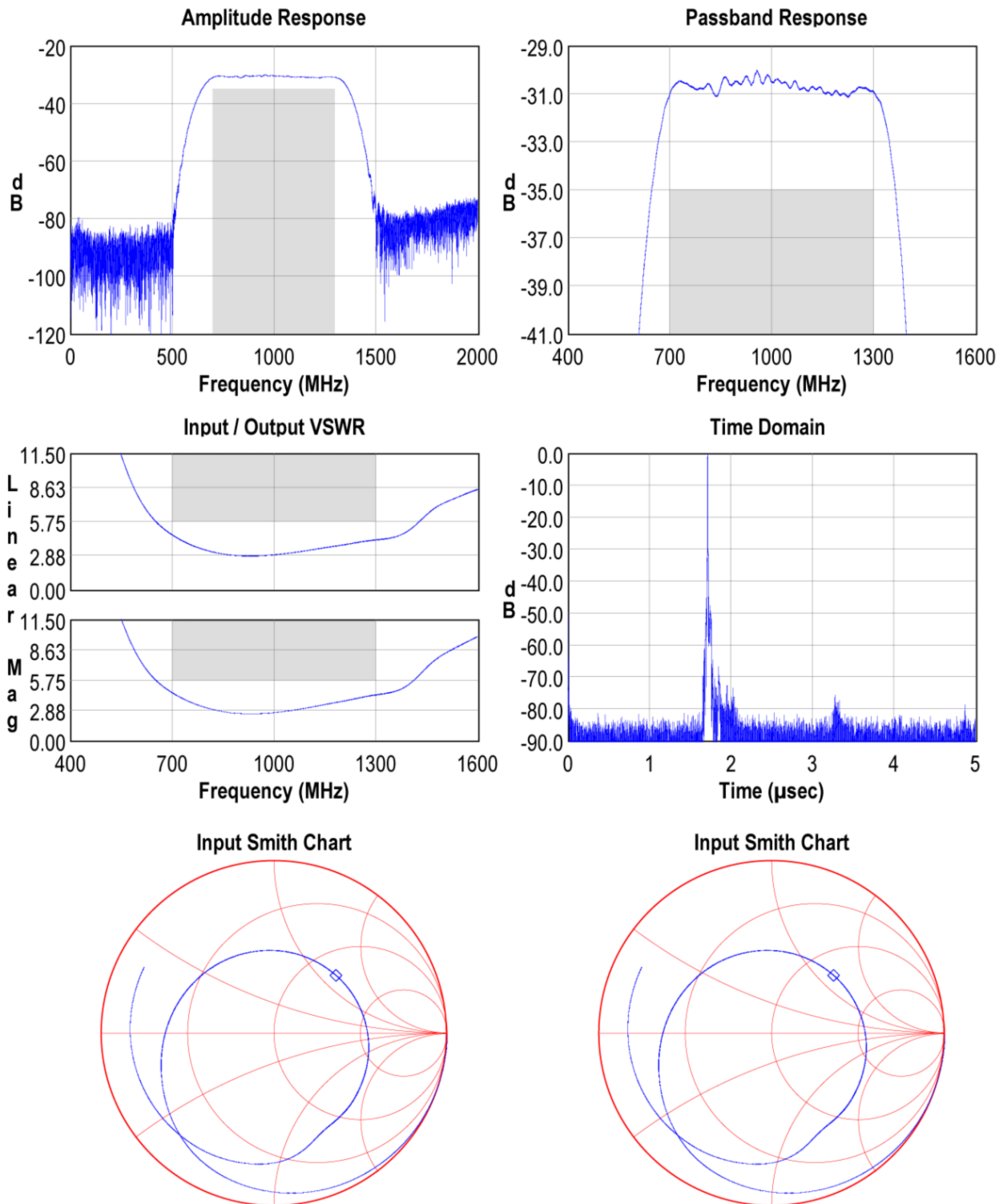
| Parameter | Rating |
|-----------------------|----------------|
| Operating Temperature | -55 to +85 °C |
| Storage Temperature | -55 to +105 °C |

Operation of this device outside the parameter ranges given above may cause permanent damage.

857165

1000 MHz SAW Non Dispersive Delay Line

Typical Performance (at room temperature)

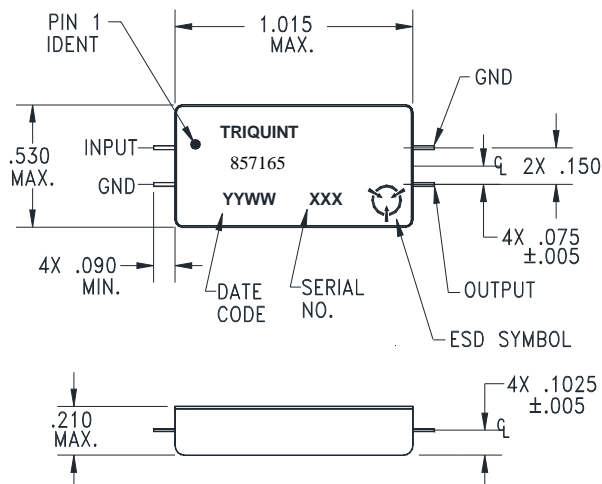


857165

1000 MHz SAW Non Dispersive Delay Line

Mechanical Information

Package Information, Dimensions and Marking



Package Style: 4-Pin FlatPack
Dimensions: 1 x 0.5 x 0.2 in. typical

Package and Leads: Au over Ni over Kovar

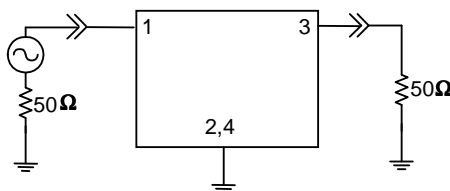
All dimensions shown are nominal in inches

The date code consists of:
last 2 digits of the year (2 digit) and
work week (2 digits)

Reference Design – 50 Ω SE Input, 50 Ω SE Output

Schematic

50 Ω
Single-ended
Input



50 Ω
Single-ended
Output

857165

1000 MHz SAW Non Dispersive Delay Line



Product Compliance Information

ESD Information



Caution! ESD-Sensitive Device

ESD Rating: TBD

Test: Human Body Model (HBM)

Standard: JEDEC Standard JESD22-A114

ESD Rating: TBD

Test: Machine Model (MM)

Standard: JEDEC Standard JESD22-A115

Solderability

Compatible with SN63 solder.

MSL Rating

Devices are Hermetic, therefore MSL is not applicable.

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations, and information about TriQuint:

Web: www.triquint.com
Email: info-sales@tqs.com

Tel: +1.407.886.8860
Fax: +1.407.886.7061

For technical questions and application information:

Email: applications.engineering@tqs.com

Important Notice

The information contained herein is believed to be reliable. TriQuint makes no warranties regarding the information contained herein. TriQuint assumes no responsibility or liability whatsoever for any of the information contained herein. TriQuint assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for TriQuint products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

TriQuint products are not warranted or authorized for use as critical components in medical, life-saving, or life-sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.