# USB041B - PRELIMINARY
## Band 41 USB Series TDD Bandpass Filter

## Features

- Low Loss with High Rejection
- Low ripple
- Universal footprint across family for all TDD bands

## Applications

- Support for close-in WiFi rejection
- Wireless Infrastructure applications
- High-performance carrier-grade single-band TDD Pico-cell basestations for up to 5.0W at the antenna port.

Part Dimensions: 25.9 × 7.6 × 6.7 mm • 3.7 g
Materials: Ag plated ceramic block with tin plated brass shield

## Description

Surface mount ceramic bandpass filter supports a universal footprint across all TDD frequency bands enabling the use of a common system PCB.  Provides superior rejection, insertion loss, reliability, as well as both peak and average power handling compared to other bandpass filter technologies.

## Electrical Specifications

| Parameter | Frequency (MHz) | Typical at 25⁰C | Spec. at 25⁰C | Spec. over -40⁰C to +85⁰C |
|---|---|---|---|---|
| Nominal Impedance | - | 50 ohms | - | - |
| Average Input Power | - | - | - | 8.0 Watt max |
| Peak Input Power | - | - | - | 80 Watt max |
| **Input-Output Response** | | | | |
| Passband Insertion Loss (20 MHz avg) | 2496-2690 | 1.9 dB | 2.1 dB max | 2.3 dB max |
| Passband Return Loss | 2496-2700 | 14 dB | 12 dB min | 12 dB min |
| Attenuation: | 1-2365 | 63 dB | 60 dB min | 60 dB min |
| | 2402-2467 | 32 dB | 30 dB min | 30 dB min |
| | 3300-4200 | 52 dB | 50 dB min | 50 dB min |

Note:  CTS tests each unit to the critical specifications above. Subsequent audits may deviate due to repeatability among different test systems which shall not exceed these allowances.
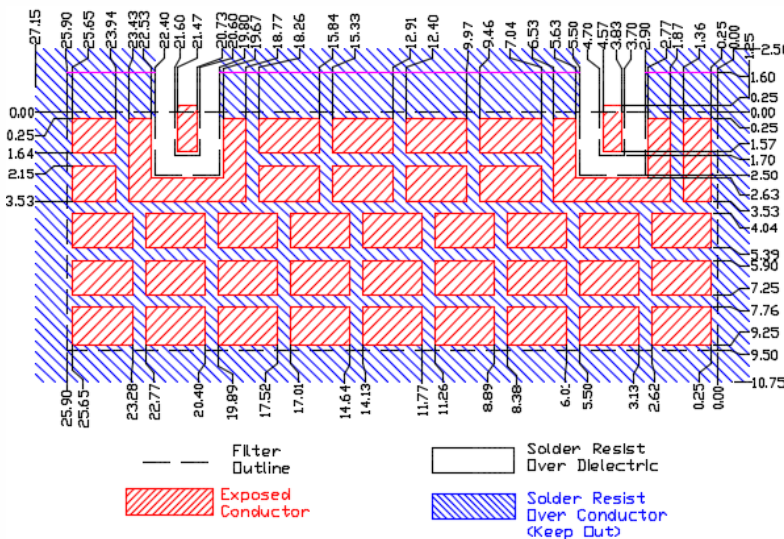
Specification Allowance
Insertion Loss     0.1 dB
Return Loss        1.0 dB
Attenuation        1.0 dB

## Mechanical Drawing
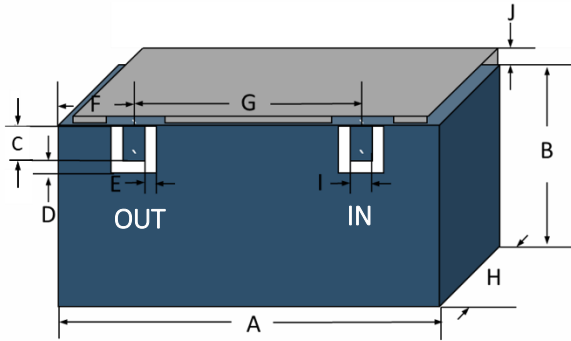


| Dim. | Nominal (mm) | Tolerance (±mm or Max) |
|---|---|---|
| A | 25.90 | max |
| B | 6.00 | max |
| C | 1.70 | 0.13 |
| D | 0.80 | 0.13 |
| E | 0.80 | 0.13 |
| F | 4.20 | 0.13 |
| G | 16.90 | 0.13 |
| H | 6.70 | max |
| I | 1.00 | 0.13 |
| J | 1.60 | max |

## PCB Layout



Filter Outline

Solder Resist Over Dielectric
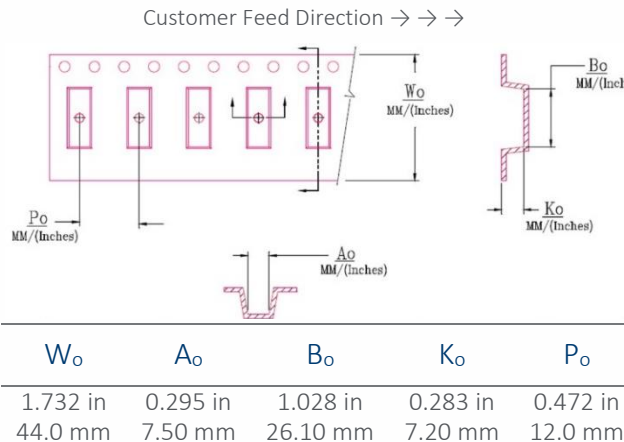
Exposed Conductor

Solder Resist Over Conductor (Keep Out)

NOTE: The width of 9.50mm is necessary to support frequencies as low as 1885MHz for Band 39. If only higher frequency TDD bands are supported, then a smaller space can be allocated on the layout.

## Packaging and Marking

| Dimension | Units | Spec. |
|---|---|---|
| Reel Diameter | mm | 330 |
| Reel Weight | kg | 5.5 |
| Reel Quantity | ea. | 500 |

Product Marking

CTS
41B
YWW

Customer Feed Direction → → →



| W₀ | A₀ | B₀ | K₀ | P₀ |
|---|---|---|---|---|
| 1.732 in | 0.295 in | 1.028 in | 0.283 in | 0.472 in |
| 44.0 mm | 7.50 mm | 26.10 mm | 7.20 mm | 12.0 mm |

## Electrical Response



| Marker | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Freq[MHz] | 2365 | 2467 | 2496 | 2690 |
| S11[dB](1) | -0.334 | -0.91 | -13.7 | -14.4 |
| S21[dB](1) | -78 | -34.7 | -2.31 | -1.05 |