

## UMD013A Band 13 UMD Series Duplexer

### Features

- Low Loss with High Rejection
- Superior power handling and reliability
- Universal footprint across all UMD Series frequency bands
- Available for either PCB mounting or with various connectors including SMA, SMP-Max, and other options.



Available as direct-solder to PCB or with various connector options.

ESTIMATE Part Dimensions: 64 × 29 × 16 mm • <105 g (excl. connectors)  
Materials: Ag plated ceramic block with tin plated brass shield

### Applications

- Wireless Infrastructure applications
- High-performance carrier-grade active antennas and small-cells for 4-10W at the antenna port.
- Wide-band DAS, Repeaters, or small-cells requiring multi-channel or carrier aggregation

### Description

Ceramic duplexer supports a universal footprint across all FDD frequency bands < 1 GHz 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 duplexer technologies.

### Electrical Specifications

Parameter	Frequency (MHz)	Typical at 25°C	Spec. at 25°C	Spec. over -40°C to +85°C
Nominal Impedance	-	50 ohms	-	-
Average Input Power	-	-	-	20.0 Watt max
Peak Input Power	-	-	-	200 Watt max
Passive Intermodulation (2x 5W)	-	-	-	-106 dBm min <b>TBC</b>

#### Antenna to UL Response

Passband Insertion Loss (5 MHz avg)	777 - 787		1.9 dB max
Passband Return Loss	777 - 787		15 dB min
Attenuation:	746 - 756		75 dB min

#### DL to Antenna Response

Passband Insertion Loss (5 MHz avg)	746 - 756		1.9 dB max
Passband Return Loss	746 - 756		15 dB min
Attenuation:	777 - 787		80 dB min

#### DL to UL Response

Attenuation for UL band	777 - 787		80 dB min
Attenuation for Transition band	756 - 777		50 dB min
Attenuation for DL band	746 - 756		77 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.

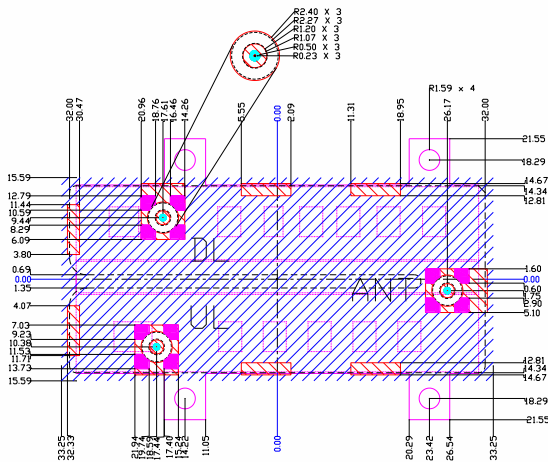
Specification Allowance	
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

**TBC** = To be confirmed

Mechanical Drawing

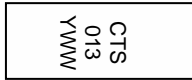
Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	64.00	Max
B	29.00	Max
C		
D		
E		
F		
G		
H		
I		
J		0.13
K		0.20

PCB Layout (Top-Down View)



- Filter Outline
- Exposed Conductor for Surface Mount
- Exposed Conductor for SMP-MAX Connector
- Pin for Pinmount
- Solder Resist Over Conductor (Keep Out Area)
- Solder Resist over Dielectric
- Via for Pin Mount

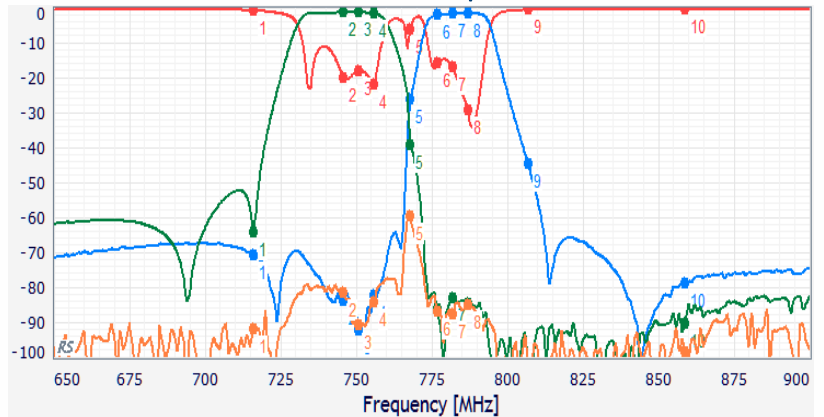
Packaging and Marking



Product is shipped in Pre-formed foam trays

The trays have xx slots each with one filter per slot. Boxes are packed with 12 Trays per box for a total of xx filters per box.

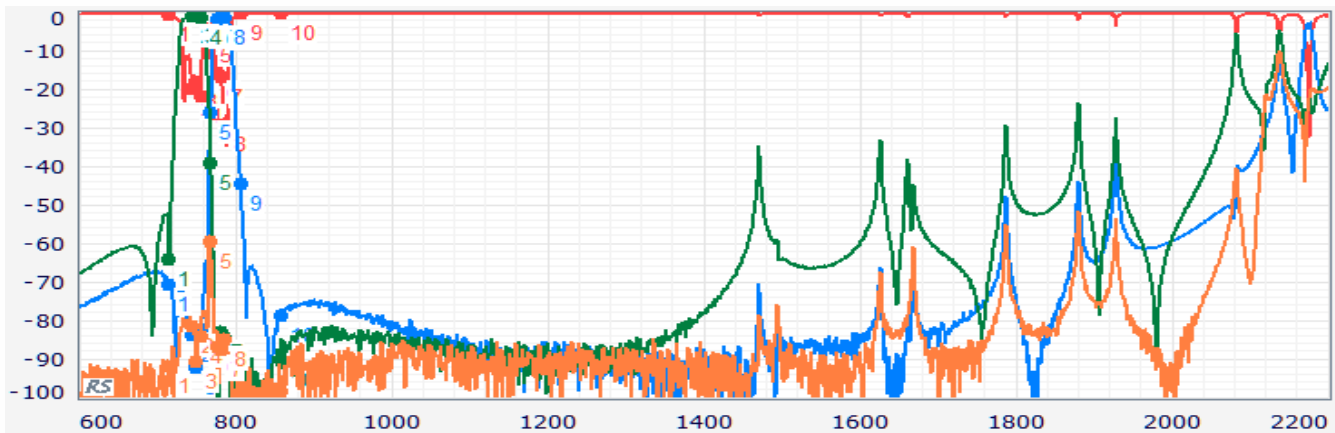
Electrical Response



Marker	1	2	3	4	5	6	7	8	9
Freq[MHz]	716	746	751	756	768	777	782	787	807
S11[dB](1)	-0.523	-19.7	-17.7	-21.9	-5.97	-15.6	-16.9	-29.1	-0.315
S21[dB](1)	-70.7	-83.5	-92	-82	-26	-1.85	-1.47	-1.32	-44.5
S13[dB](1)	-63.9	-1.01	-1.08	-1.38	-39.2	-86.1	-82.8	-84.4	-102
S23[dB](1)	-91.7	-81.5	-90.7	-84.2	-59.6	-86.8	-87.5	-84.7	-103

### Electrical Specifications – Supplemental Spectrum Specifications

Parameter	Frequency (MHz)	Typical at 25°C	Spec. at 25°C	Spec. over -40°C to +85°C
<b>Antenna to UL Response</b>				
Attenuation:	1 - 698			>60 dB min
	728-746			>47 dB min
	757-768			15 dB min
	807			15 dB min
	859 - 894			>47 dB min
<b>DL to Antenna Response</b>				
Attenuation:	1 - 716			>50 dB min
	788-798			>50 dB min
	798-1400			>60 dB min



### Ordering Options

Part Number	Code	Connector Option Description
UMD013A	[blank]	No pins or connectors
	-C3	3 SMP-Com Male with limited detent
	-CF2	SMP-Com Male with limited detent antenna port + 2 SMP female cables
	-M3	3 SMP-Max Slide-type Male
	-NS2	N-type antenna port + 2 SMA Male (CMD only)
	-P3	3 thru-hole pins for soldering to PCB (UMD only)
	-S3	3 SMA Female