Product Brief

UMD020A

Band 20 UMD Series Duplexer

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

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.

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
Antenna to UL Response				
Passband Insertion Loss (5 MHz avg)	832.25 - 862	2.1 dB	2.4 dB max	2.6 dB max
Passband Return Loss	832.25 - 862			14 dB min
Attenuation: (5 MHz avg)	791 – 820.75			70 dB min
DL to Antenna Response				
Passband Insertion Loss (5 MHz avg)	791 – 820.75	2.1 dB	2.4 dB max	2.6 dB max
Passband Return Loss	791 – 820.75			14 dB min
Attenuation: (5 MHz avg)	832.25 - 862			76 dB min
DL to UL Response				
Attenuation for UL band (5 MHz avg)	832.25 - 862			78 dB min
Attenuation for Transition band	821 - 832			47 dB min
Attenuation for DL band (5 MHz avg)	791 – 820.75			74 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.

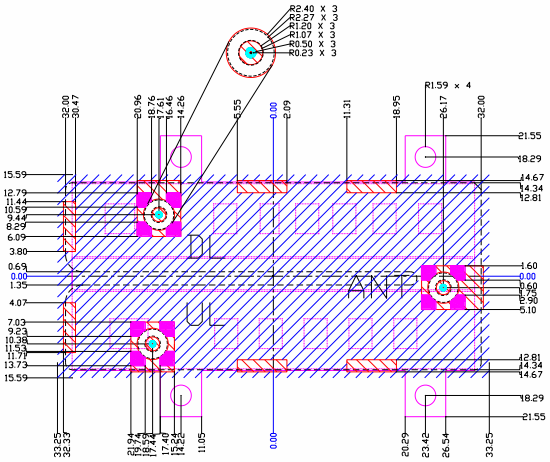
Specification Allowance	
Insertion Loss	0.1 dB
Return Loss	1.0 dB
Attenuation	1.0 dB

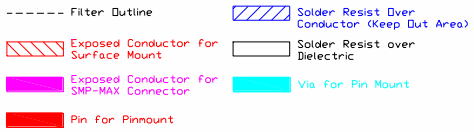
TBC = To be confirmed

Mechanical Drawing

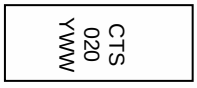
Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	64.00	Max
B	29.00	Max
C		
D		
E		
F		
G		
H		
I		
J		0.13
K		0.20

PCB Layout (Top-Down View)





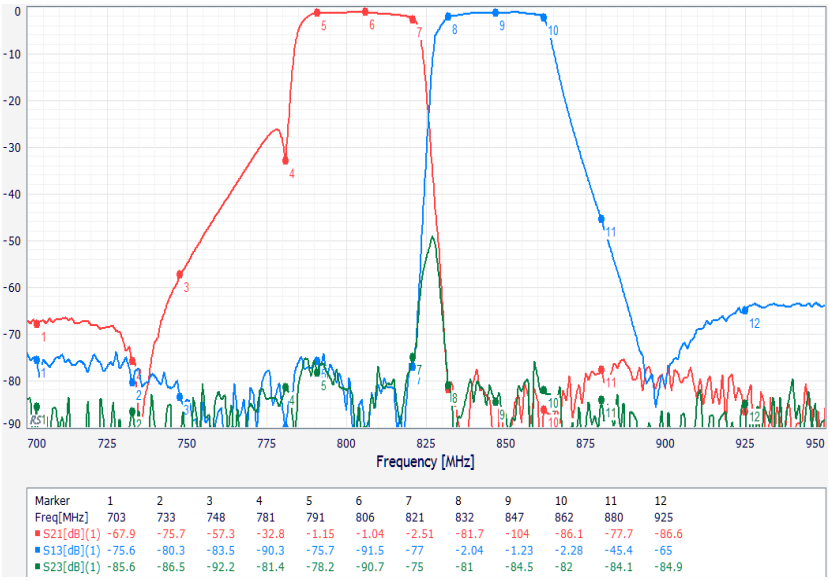
Packaging and Marking



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.

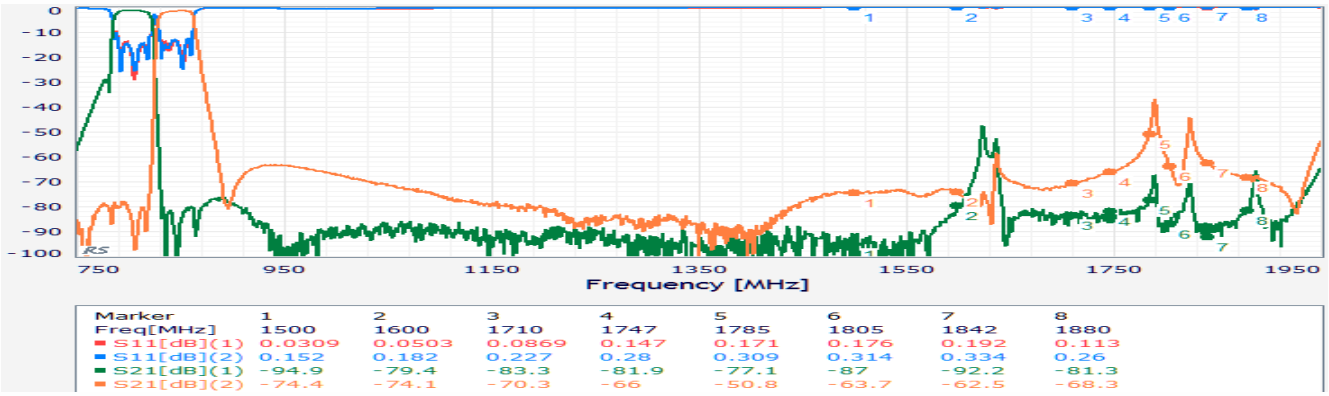
Electrical Response



Marker	1	2	3	4	5	6	7	8	9	10	11	12
Freq[MHz]	703	733	748	781	791	806	821	832	847	862	880	925
S21[dB](1)	-67.9	-75.7	-57.3	-32.8	-1.15	-1.04	-2.51	-81.7	-104	-86.1	-77.7	-86.6
S13[dB](1)	-75.6	-80.3	-83.5	-90.3	-75.7	-91.5	-77	-2.04	-1.23	-2.28	-45.4	-65
S23[dB](1)	-85.6	-86.5	-92.2	-81.4	-78.2	-90.7	-75	-81	-84.5	-82	-84.1	-84.9

Electrical Specifications – Supplemental Spectrum Specifications

Parameter	Frequency (MHz)	Typical at 25°C	Spec. at 25°C	Spec. over -40°C to +85°C
Antenna to UL Response				
Attenuation:	1 - 791			60 dB min
	880 - 925			43 dB min
	925 - 960			47 dB min
	960 - 1500			47 dB min
	1500 - 1880			22 dB min
DL to Antenna Response				
Attenuation:	1 - 703			60 dB min
	703 - 733			55 dB min
	733 - 748			42 dB min
	748 - 781			22 dB min
	880 - 1020			55 dB min
	1020 - 1500			60 dB min
	1500 - 1785			22 dB min



Ordering Options

Part Number	Code	Connector Option Description
UMD020A	[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