CER1140A

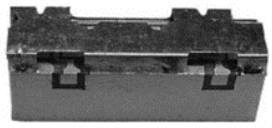
4200-4400MHz Bandpass Filter

Features

- Low Loss with High Rejection
- Low Group Delay Variation

Applications

- Primarily for Radio Altimeter applications



Part Dimensions: 15.5 × 5.5 × 4.4 mm • 1.0 g
Materials: Ag plated ceramic block with fuse tin plated brass shield

Description

Surface mount ceramic bandpass filter. Superior rejection, insertion loss, reliability, as well as both peak and average power handling compared other bandpass filter technologies.

Electrical Specifications

Parameter	Frequency (MHz)	Typical at 25°C	Spec. at 25°C	Spec. over -55°C to +85°C
Nominal Impedance	-	50 ohms	-	-
Average Input Power	-	-	-	3.0 Watt max
Peak Input Power	-	-	-	20 Watt max
Input-Output Response				
Passband Insertion Loss	4250-4350	1.6 dB	1.8 dB max	1.8 dB max
	4225-4375	1.7 dB	2.0 dB max	2.0 dB max
	4200-4400	1.9 dB	2.2 dB max	2.3 dB max
Passband Return Loss	4200-4400	14 dB	12 dB min	12 dB min
Group Delay Variation	4250-4350	0.6 ns	1.0 ns max	1.0 ns max
	4225-4375	1.3 ns	2.0 ns max	2.0 ns max
Group Delay Minimum	4225-4375	4.9 ns	4.5 ns min	4.5 ns min
Group Delay Maximum	4225-4375	6.2 ns	6.5 ns max	6.5 ns max
Attenuation:	1 - 4000	60 dB	55 dB min	55 dB min
	4050	49 dB	40 dB min	40 dB min
	4100	31 dB	30 dB min	30 dB min
	4600-5000	53 dB	50 dB min	50 dB min
	5150-5950	53 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

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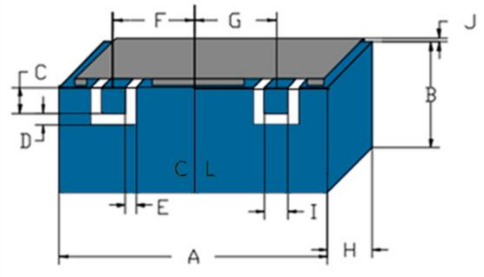
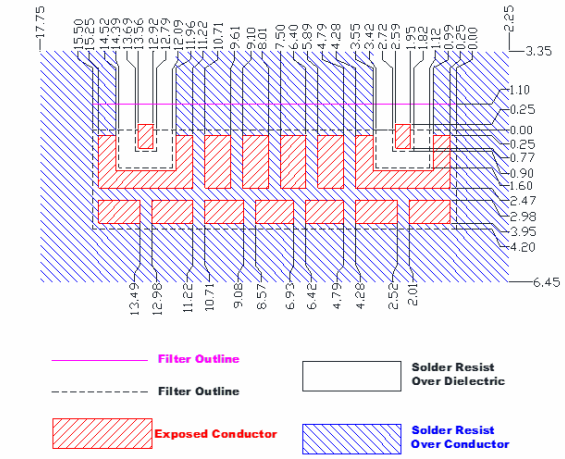
Mechanical Drawing



Dim.	Nominal (mm)	Tolerance (±mm or Max)
A	15.50	max
B	4.20	max
C	0.90	0.13
D	0.70	0.13
E	0.70	0.13
F	5.485	0.13
G	5.485	0.13
H	4.40	max
I	0.90	0.13
J	1.10	0.20

PCB Layout



IMPORTANT: Please assure >=30mils (0.75mm) thickness of dielectric beneath the I/O Pads and the surrounding clearance zone down to the required ground plane.

Please assure sufficient ground vias between the top metal ground plane and the primary ground plane.

Recommended solder: 4-6 mils of SAC305 with reflow including 120s of soak at 217°C, and up to 30 sec peak at 241°C.

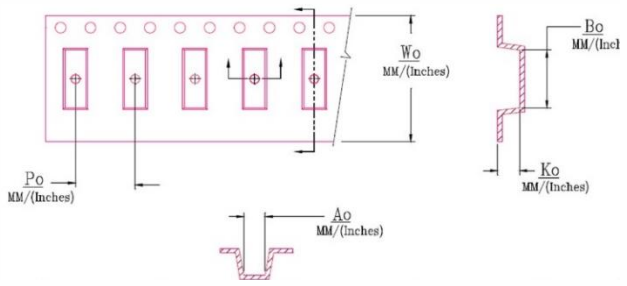
Packaging and Marking

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

Product Marking

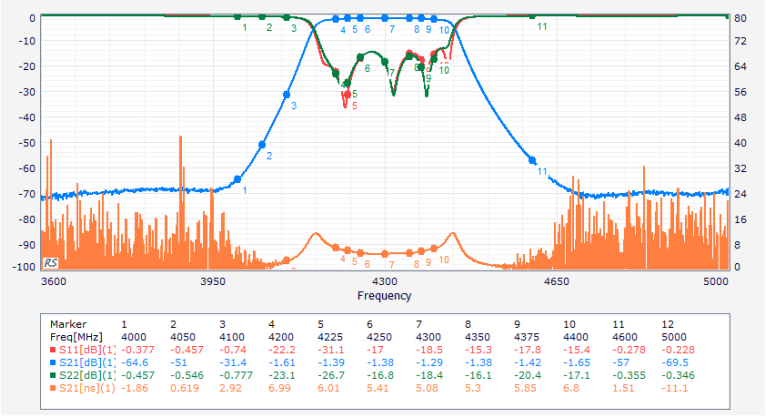
CTS
1140
YYWW

Customer Feed Direction → → →



W_o	A_o	B_o	K_o	P_o
0.945 in 24.0 mm	0.236 in 6.0 mm	0.622 in 15.8 mm	0.181 in 4.6 mm	0.472 in 12.0 mm

Electrical Response



Marker	1	2	3	4	5	6	7	8	9	10	11	12
Freq[MHz]	4000	4050	4100	4200	4225	4250	4300	4350	4375	4400	4600	5000
S11[dB](1)	-0.377	-0.457	-0.74	-22.2	-31.1	-17	-18.5	-15.3	-17.8	-15.4	-0.278	-0.228
S21[dB](1)	-64.6	-51	-31.4	-1.61	-1.39	-1.38	-1.29	-1.38	-1.42	-1.65	-57	-69.5
S22[dB](1)	-0.457	-0.546	-0.777	-23.1	-26.7	-16.8	-18.4	-16.1	-20.4	-17.1	-0.355	-0.346
S21[ns](1)	-1.86	0.619	2.92	6.99	6.01	5.41	5.08	5.3	5.85	6.8	1.51	-11.1