

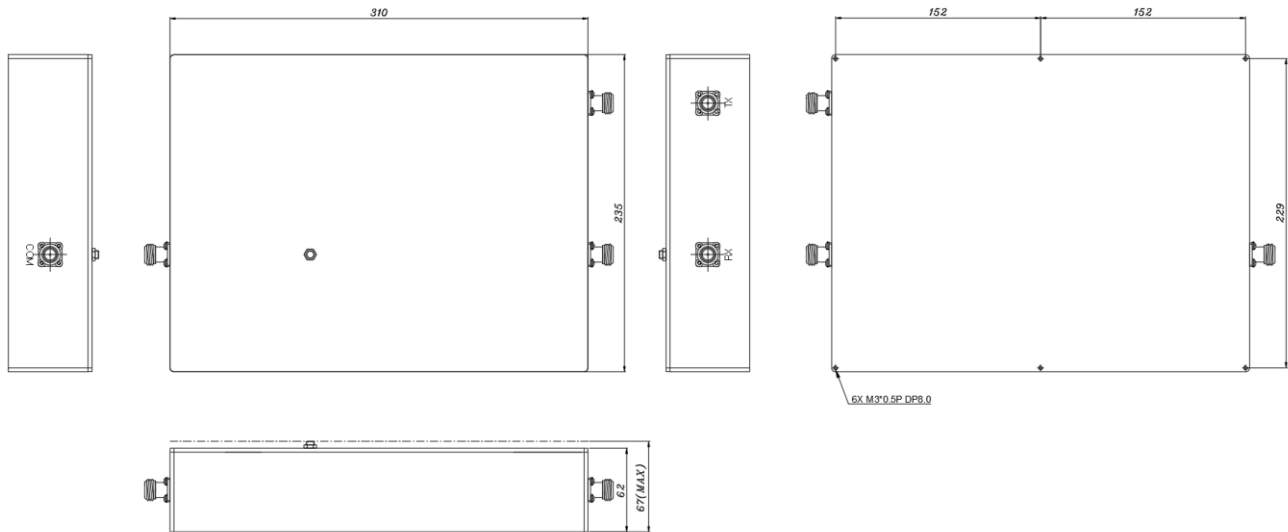
PRODUCT SPECIFICATION FOR INFORMATION

PRELIMINARY SPECIFICATION

Product Name : Cavity Duplexer
Part No : MDI-C402.5-C419_2M-2MN-C-R1

.	Rev. No.	Description	Date	Author	Final Approver
1	R0	First Draft	2025.04.11	Jeffrey Chung	Michael Jeon
2	R1	Change rejection & size	2025.05.07	Jeffrey Chung	Michael Jeon

■ Mechanical Drawing



■ Electrical Specification

Item	Specification		Remark
	CH1	CH2	
1. Center Frequency	402.5 MHz	419 MHz	OK
2. Pass Band Frequency	$f_o \pm 1[401.5 \sim 403.5] \text{MHz}$	$f_o \pm 1[418 \sim 420] \text{MHz}$	OK
3. Insertion Loss	1.0dB(Typ.) 1.15dB(Max.)	1.0dB(Typ.) 1.15dB(Max.)	OK
4. Ripple	0.2 dB		OK
5. Return Loss	17.0dB Min.		OK
6. Rejection	55dB min. @ 20~88MHz	55dB min. @ 20~88MHz	OK
	55dB min. @150~204MHz	55dB min. @150~204MHz	OK
	70dB min. @220~396MHz	70dB min. @220~400MHz	OK
	80dB min. @418~420MHz	80dB min. @402~ 412.5 MHz	OK
	85dB min. @420~450MHz	75dB min. @426~450MHz	OK
	85dB min. @450~1000MHz	85dB min. @450~1000MHz	OK
7. In/Out Impedance	50 Ω		OK
8. Input Power	CW 75 W Max.		OK
9. Operation Temperature Range	-10°C ~ +85°C		OK
10. Dimension [WxDxH]	310.0 x 235.0 x 67.0 [mm]		Proposal
11. Connector	N(f)		OK
12. Random Vibration	MIL-STD-810F method 541.5 Procedure C1. 3axes, 20min.per each axis.		OK
13. Dust	MIL-STD-810F method 514.4 Procedure 3 settling dust		OK
14. Finish	Black Painting		Proposal

■ Simulation Data

[RX] Insertion loss

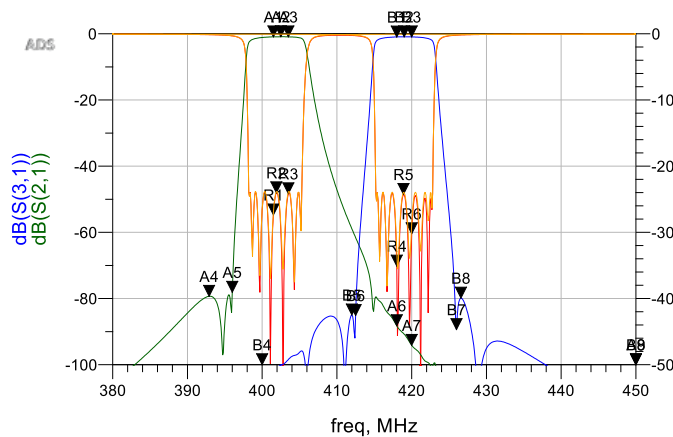
IL_RX	Ripple_TX
-0.94	-0.03

[TX] Insertion loss

IL_TX	Ripple_TX
-0.95	-0.03

Insertion loss

A1 freq=401.50MHz dB(S(2,1))=-0.9344	A2 freq=402.50MHz dB(S(2,1))=-0.9008	A3 freq=403.50MHz dB(S(2,1))=-0.9377	B1 freq=418.00MHz dB(S(3,1))=-0.9532	B2 freq=419.00MHz dB(S(3,1))=-0.9325	B3 freq=420.00MHz dB(S(3,1))=-0.9465
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Rejection

A4 freq=392.90MHz dB(S(2,1))=-79.3376	B4 freq=400.00MHz dB(S(3,1))=-104.2771
A5 freq=396.00MHz dB(S(2,1))=-78.1088	B5 freq=412.00MHz dB(S(3,1))=-84.9857
A6 freq=418.00MHz dB(S(2,1))=-88.2215	B6 freq=412.50MHz dB(S(3,1))=-85.1318
A7 freq=420.00MHz dB(S(2,1))=-94.1541	B7 freq=426.00MHz dB(S(3,1))=-89.3938
A8 freq=450.00MHz dB(S(2,1))=-133.7102	B8 freq=426.60MHz dB(S(3,1))=-79.8924
	B9 freq=450.00MHz dB(S(3,1))=-114.4825

Return loss

R1 freq=401.50MHz dB(S(1,1))=-27.3597	R2 freq=401.90MHz dB(S(1,1))=-24.0179	R3 freq=403.50MHz dB(S(1,1))=-24.1595	R4 freq=418.00MHz dB(S(1,1))=-35.1010	R5 freq=418.90MHz dB(S(1,1))=-24.2746	R6 freq=420.00MHz dB(S(1,1))=-30.2207
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[RX] Insertion loss

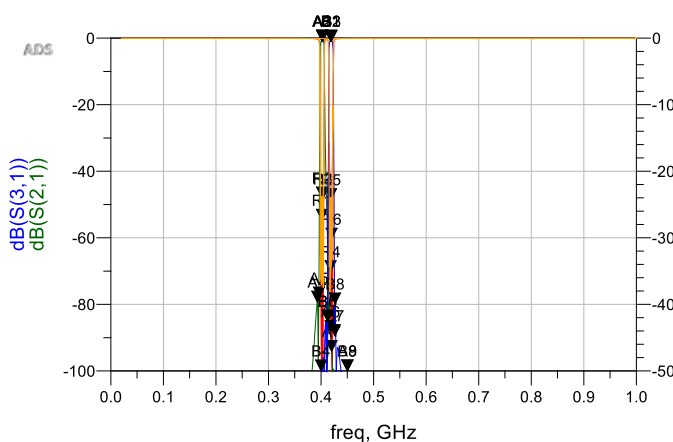
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[TX] Insertion loss

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