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Sales & Customer Support: sales@markimicrowave.com
Tech Support: support@markimicrowave.com

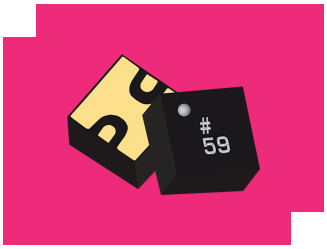
MFLP-00028CSP1

Passive GaAs MMIC 10.7 GHz Lowpass Filter

DEVICE OVERVIEW

General Description

The MFLP-00028CSP1 MMIC surface mount lowpass filter is an ideal solution for extremely small form factor, high rejection filtering. The MFLP-00028CSP1 features a 10.7 GHz 3 dBc cutoff and 24 dB passband return loss. Passive GaAs MMIC technology allows production of smaller filter constructions that replace larger form factor circuit board constructions. Tight fabrication tolerances allow for less unit-to-unit variation than traditional filter technologies. The MFLP-00028CSP1 is available as a 1.5x1.5 mm CSP. Low unit to unit variation allows for accurate simulations using the provided S2P file.



Download s-parameters here

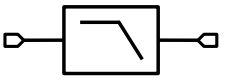
Features

- Low Passband Insertion Loss with Fast Roll-off
- 24 dB Return Loss
- High Stop Band Suppression
- This product embodies Marki Microwave's U.S. Pat. 11,869,858.

Applications

- SATCOM
- Radar

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MFLP-00028CSP1	Passive GaAs MMIC 10.7 GHz Lowpass Filter	CSP1	RoHS REACH	Released	EAR99
EVB-MFLP-00028	Evaluation Board, Passive GaAs MMIC 10.7 GHz Lowpass Filter	EVB	RoHS REACH	Released	EAR99

Table Of Contents

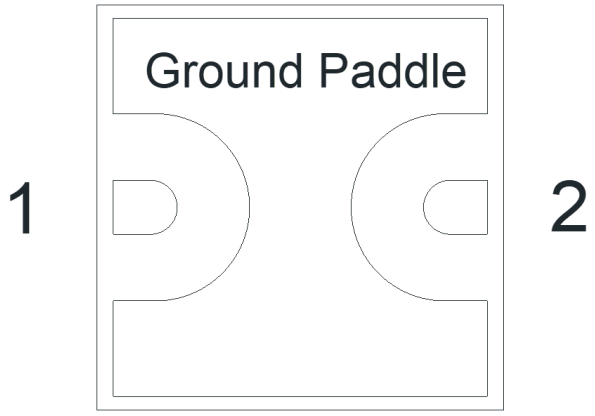
Revision History

Revision Code	Revision Date	Comment
-	2025-09-30	Initial Release

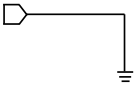
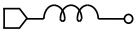
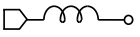
Port Configuration and Functions

Port Diagram

A top-down x-ray view of the MFLP-00028CSP1 package outline drawing is shown below.



Port Functions

Port	Function	Description	DC Equivalent Circuit
Ground Paddle	Ground	CSP package ground path is provided through the ground paddle and should be connected to RF ground.	
Pin 1	Input	Pin 1 is DC short to Pin 2.	
Pin 2	Output	Pin 2 is DC short to Pin 1.	

Specifications

Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. If these limits are exceeded, the device may be inoperable or have a reduced lifetime.

Parameter	Maximum Rating	Unit
Maximum Operating Temperature	100	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-55	°C
Minimum Storage Temperature	-65	°C
Port 1 DC Current	80	mA
Port 2 DC Current	80	mA

Package Information

Parameter	Details	Rating
ESD	250 to < 500 Volts	HBM Class 1A
Weight	Package name: CSP1	0.04g
Dimensions	-	1.50 x 1.50 mm
Moisture Sensitivity Level	-	MSL 3

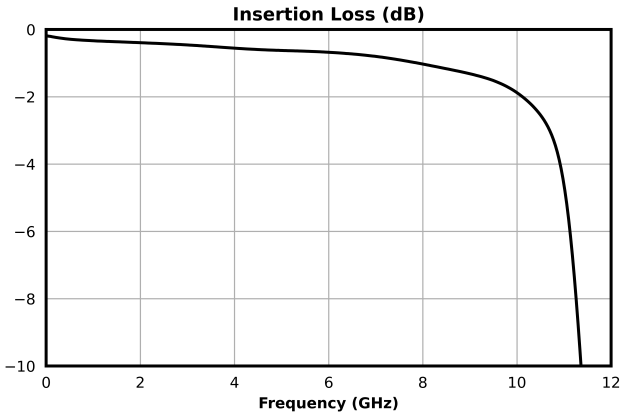
Electrical Specifications

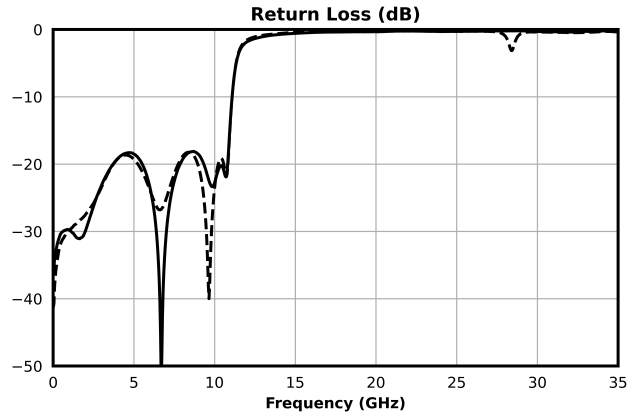
The electrical specifications apply at TA=+25°C in a 50Ω system. Min and Max limits are guaranteed at TA=+25°C.

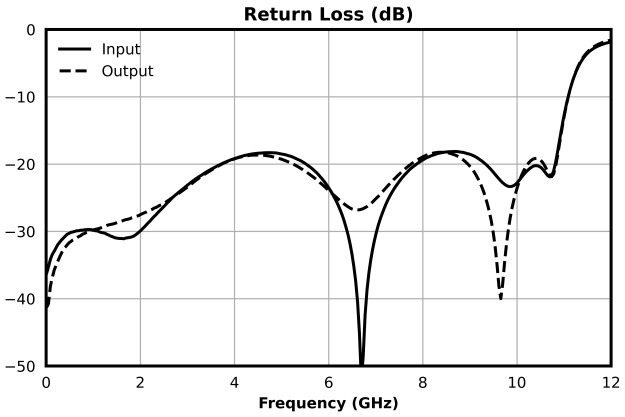
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1 dBc Passband	Configuration A, Temp = 25°C	-	8.54	-	-	-	GHz
3 dBc Passband	Configuration A, Temp = 25°C	-	10.74	-	-	-	GHz
30 dBc Rejection Point	Configuration A, Temp = 25°C	-	12.1	-	-	-	GHz
Passband Return Loss	Configuration A, Temp = 25°C	-	-	-	24	-	dB
Group Delay	Configuration A, Temp = 25°C	-	-	-	96	-	ps

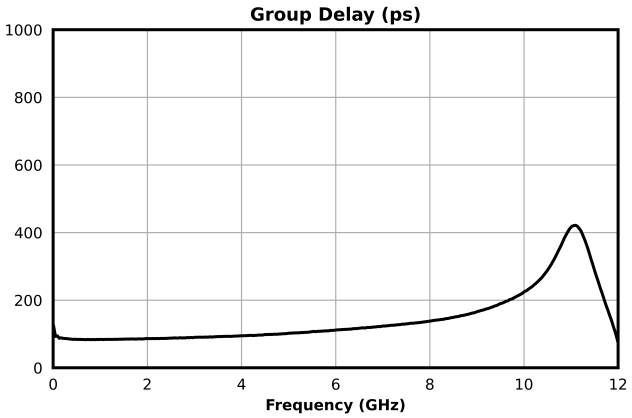
Typical performance is de-embedded from evaluation board using automatic fixture removal (AFR).

Typical Performance Plot









MFLP-00028CSP1

Passive GaAs MMIC 10.7 GHz Lowpass Filter

Mechanical Data

Outline Drawing

Download : Outline 2D Drawing | Outline 3D Drawing | Outline 3D STP

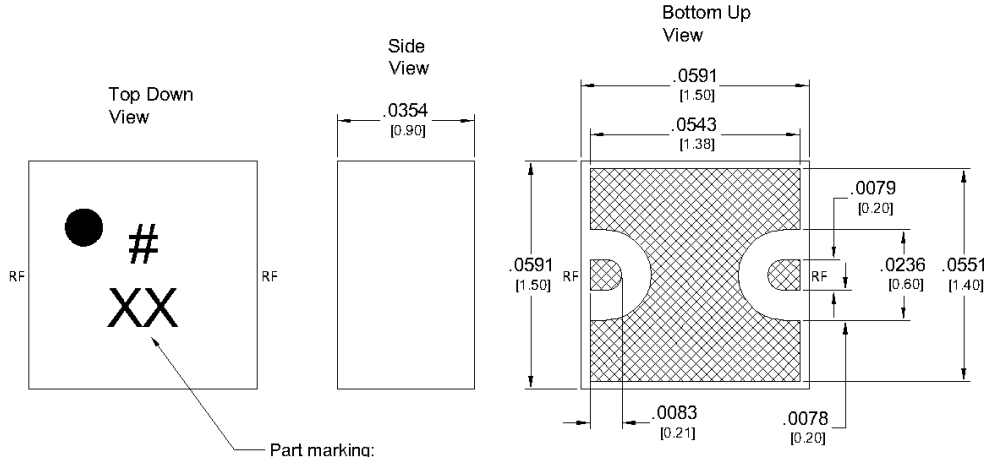
*All measurements are typical
units in inch +/-.004" [millimeter +/-0.1]

PROJECTION: INCH [MM]

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVALS
A	Initial Release	7/31/25	AJN

DFN 1.5mm by 1.5mm date code

Code	Year	QTR
A	2021	Q1
B	2021	Q2
C	2021	Q3
D	2021	Q4
E	2022	Q1
F	2022	Q2
G	2022	Q3
H	2022	Q4
I	2023	Q1
J	2023	Q2
K	2023	Q3
L	2023	Q4
M	2024	Q1
N	2024	Q2
O	2024	Q3
P	2024	Q4
Q	2025	Q1
R	2025	Q2
S	2025	Q3
T	2025	Q4
U	2026	Q1
V	2026	Q2
W	2026	Q3
X	2026	Q4
Y	2027	Q1
Z	2027	Q2
0	2027	Q3
1	2027	Q4
2	2028	Q1
3	2028	Q2
4	2028	Q3
5	2028	Q4
6	2029	Q1
7	2029	Q2
8	2029	Q3
9	2029	Q4



XX	MFLP-#####CSP1	EVB-MFLP-#####
53	MFLP-00022CSP1	EVB-MFLP-00022
54	MFLP-00023CSP1	EVB-MFLP-00023
55	MFLP-00024CSP1	EVB-MFLP-00024
56	MFLP-00025CSP1	EVB-MFLP-00025
57	MFLP-00026CSP1	EVB-MFLP-00026
59	MFLP-00028CSP1	EVB-MFLP-00028
60	MFLP-00029CSP1	EVB-MFLP-00029
62	MFLP-00031CSP1	EVB-MFLP-00031

Notes: (Unless otherwise specified)

1. Shaded areas are metalized.
2. Finish: Ni: 0.5 - 2.5 µm
   Pd: 0.02 - 0.15 µm
   Au: 0.003 - 0.015 µm

NOTES:

DRAWN BY	DATE
LCG	4/23/25
SP	7/24/25
AVC	7/30/25

MATERIAL:

FINISH: Note 2

DO NOT SCALE DRAWING

Marki microwave www.markimicrowave.com

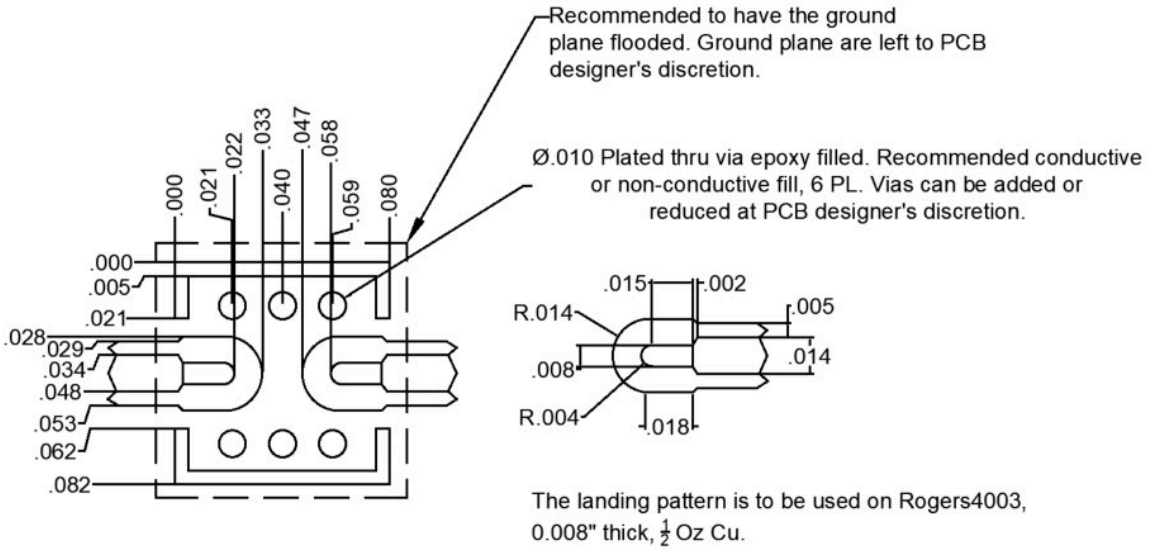
Outline
CSP1 Low Pass Filter

SIZE	CAGE CODE	DWG. NO.
A	0UC32	MFLP-#####CSP1

SHEET 1 OF 1

Footprint Image

Download : Footprint Drawing

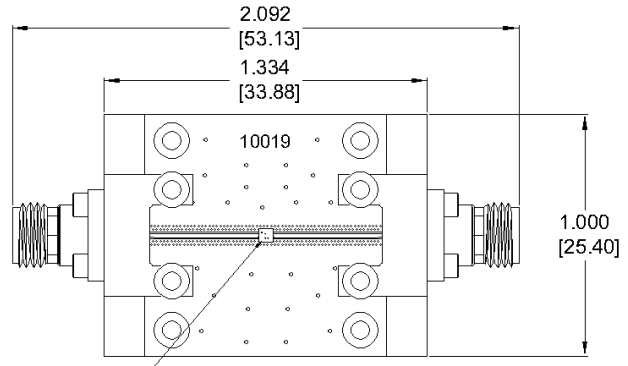


Evaluation Board - Outline Drawing

All measurements are typical

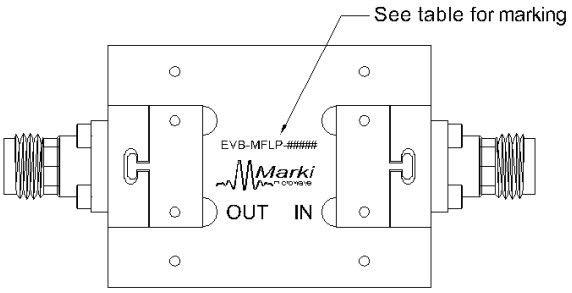
PROJECTION: INCH [MM]

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVALS
A	Initial Release	7/31/25	AJN



Top View

Part marking:
#: Date code
XX: See table



Bottom-up View

XX	MFLP-#####CSP1	EVB-MFLP-#####
53	MFLP-00022CSP1	EVB-MFLP-00022
54	MFLP-00023CSP1	EVB-MFLP-00023
55	MFLP-00024CSP1	EVB-MFLP-00024
56	MFLP-00025CSP1	EVB-MFLP-00025
57	MFLP-00026CSP1	EVB-MFLP-00026
59	MFLP-00028CSP1	EVB-MFLP-00028
60	MFLP-00029CSP1	EVB-MFLP-00029
62	MFLP-00031CSP1	EVB-MFLP-00031

Port	Connector Type
1, 2	2.92mm Female
Note: Connectors are not removeable.	

RoHS Compliant (SN96.5/AG3.5) Components/Assembly

NOTES:

DRAWN BY	DATE
LCG	5/14/25
SP	7/24/25
AVC	7/30/25

MATERIAL:

FINISH:

DO NOT SCALE DRAWING

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Outline
MFLP Eval Board CSP1

SIZE	CAGE CODE	DWG. NO.
A	0UC32	EVB-MFLP-######

SHEET 1 OF 1

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