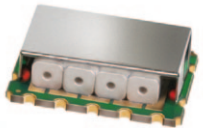
Ceramic Resonator

Bandpass Filter

CSBP-D1228+

50Ω 1203 to 1253 MHz



CASE STYLE: KS1509

The Big Deal

- Excellent Rejection
  1010 MHz, 1450 MHz: 30 dB typ.
  920 MHz, 1600 MHz: 50 dB typ.
- Low Passband Insertion Loss: 0.9 dB typ.
- Stable IL vs. Temperature: ±0.3 dB typ.

Product Overview

The Mini-Circuits CSBP-D1228+ is a ceramic-coaxial-resonator based bandpass filter offering outstanding close-in rejections low insertion loss and high power handling for use in transmitter and receiver RF chains.

Key Features

Feature	Advantages
High Selectivity	The CSBP-D1228+ filter incorporates High-Q custom ceramic resonators that enable sharp rejection near the passband while maintaining 4% passband bandwidth.
Low Passband VSWR: 1.4:1 typ.	The CSBP-D1228+ filter maintains typical VSWR over a wide passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in-band frequency ripple.
RF Power Handling: 16.5W	Tested at high level RF powers, the CSBP-D1228+ can withstand high power CW signals within the passband making this filter ideal for higher power transmitters.
Temperature Stability: ±0.3dB	The use of highly stable materials enables the CSBP-D1228+ to maintain minimal insertion loss variation over a wide temperature range over the passband and the stopband.
Rugged construction	The CSBP-D1228+ has been qualified over a wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles.
Small size: 0.88" x 0.625 x 0.225"	The use of high dielectric constant resonators enables the CSBP-D1228+ to support a large number of poles in a small footprint enabling high selectivity in a small surface mount design.

Surface Mount Ceramic Resonator

Bandpass Filter

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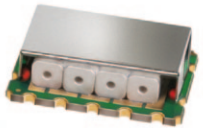


CASE STYLE: KS1509
PRICE: $29.95 ea. QTY (1-9)

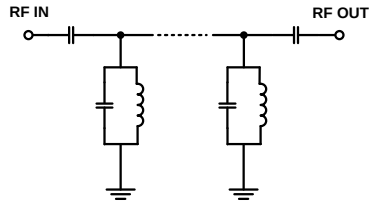
Features

- Low Insertion Loss, 0.9 dB typ.
- Minimal Insertion loss variation over operating temperature, ±0.3 dB
- High power handling, 16.5W
- Wide pass band (4%), high selectivity

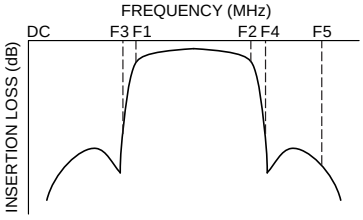
Applications

- Sub harmonic filtering
- Image Rejection
- Transmitter filtering

Functional Schematic



Typical Frequency Response



+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Electrical Specifications at 25°C

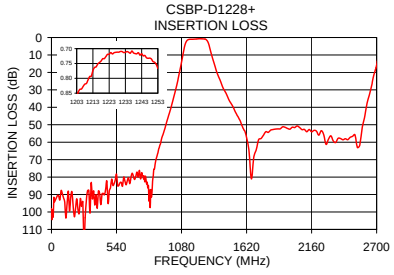
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	1228	—	MHz
	Insertion Loss	F1-F2	1203 - 1253	—	0.9	2.0	dB
	VSWR	F1-F2	1203 - 1253	—	1.4	1.7	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 1020	20	30	—	dB
	VSWR	DC-F3	DC - 1020	—	35	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	1425 - 2500	20	30	—	dB
	VSWR	F4-F5	1425 - 2500	—	27	—	:1

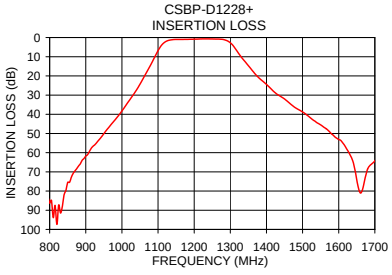
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input*	16.5W max. at 25°C

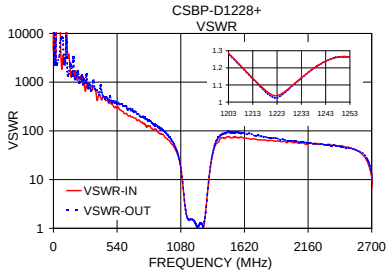
*Derate linearly to 8W at 85°C
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR-In (:1)	VSWR-Out (:1)
1	98.36	9454.68	15758.32
920	56.68	87.95	107.78
1020	32.88	47.91	55.40
1075	15.85	20.41	21.41
1110	3.94	3.94	3.91
1120	2.24	2.45	2.43
1130	1.44	1.81	1.79
1203	0.86	1.28	1.28
1228	0.71	1.08	1.08
1253	0.77	1.26	1.26
1280	1.01	1.32	1.32
1305	3.63	4.82	4.83
1370	19.26	48.36	53.11
1425	28.91	71.16	82.92
1600	53.16	72.70	90.98
2500	56.65	46.46	43.91
2580	51.70	39.07	39.25
2675	21.93	19.39	22.57



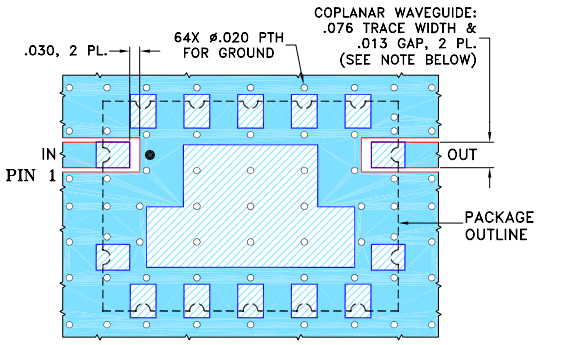




Pad Connections

INPUT	1
OUTPUT	9
GROUND	2 to 8, 10 to 14

Demo Board MCL P/N: TB-577+
Suggested PCB Layout (PL-332)

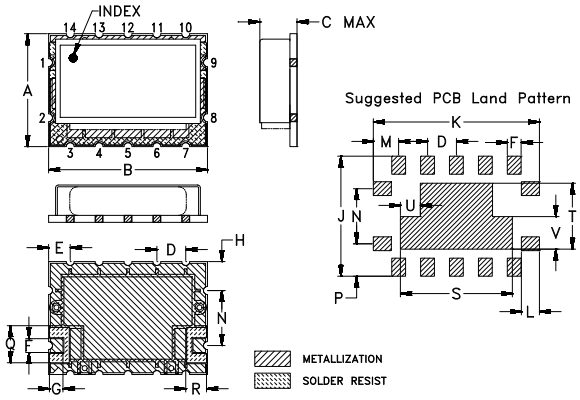


NOTE: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .060" ± .004"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L
.625	.880	.225	.160	.120	.077	.070	.160	.665	.920	.100
15.88	22.35	5.72	4.06	3.05	1.96	1.78	4.06	16.89	23.37	2.54

M	N	P	Q	R	S	T	U	V	wt
.140	.305	.180	.205	.115	.620	.365	.110	.180	grams
3.56	7.75	4.57	5.21	2.92	15.75	9.27	2.79	4.57	4.4