THE DATASHEET OF

KSX2-442+

X2 Frequency Multiplier

KSX2-442+

50Ω Output 1200 to 4400 MHz

Generic photo used for illustration purposes only

CASE STYLE: HV1195

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input, 25°C	100 mW

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

INPUT	4
OUTPUT	8
50Ω TERMINATE EXT.	2
GROUND	1,3,5,6,7

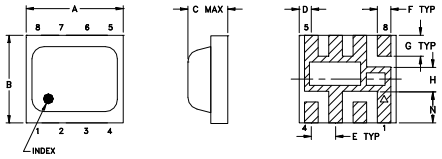
Features

- low conversion loss, 11.0 dB typ.
- high fundamental & harmonic suppression, F1, 24 dBc typ.; F3, 30 dBc typ.; F4, 20 dBc typ.
- LTCC design
- low profile, 0.085”
- aqueous washable

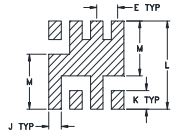
Applications

- synthesizers
- local oscillators

Outline Drawing



PCB Metal Land Pattern



Suggested Layout,
Tolerance to be within±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.200	.180	.087	.025	.050	.028	.043
5.08	4.57	2.2098	0.64	1.27	0.71	1.09

H	J	K	L	M	N	wt
.050	.030	.043	.204	.127	0.065	grams
1.27	0.76	1.09	5.18	3.23	1.65	0.08

Electrical Specifications

MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1	F2					F1		F3		F4	
	Input	Output	Min.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.
2	600-1200	1200-2400	7	13	11	14	26	18	35	22	16	11
	1200-2200	2400-4400	10	15	11	14.5	18	11	36	22	25	14

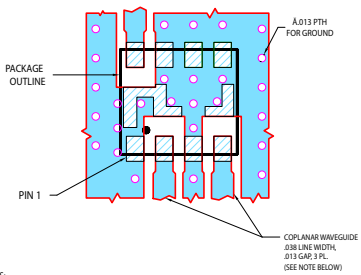
* Harmonics of input frequency below the power level of F2

Typical Performance Data

Input Frequency (MHz)	INPUT RF= 7dBm Conversion Loss (dB)	Harmonic Output Below F2 (-dBc) F1	F3	F4	INPUT RF= 13dBm Conversion Loss (dB)	Harmonic Output Below F2 (-dBc) F1	F3	F4
600.00	11.07	37.78	38.89	19.27	11.42	36.83	37.22	17.78
700.00	10.62	35.69	33.05	20.55	11.38	30.55	43.10	15.17
725.00	10.96	33.61	32.98	18.42	11.82	29.27	46.76	14.44
750.00	10.81	31.77	34.21	16.56	11.53	28.24	54.28	13.86
775.00	11.11	30.55	34.97	15.48	11.73	27.98	51.80	13.59
800.00	10.80	29.63	36.19	14.47	11.25	27.69	48.85	13.72
825.00	10.56	29.39	36.48	14.11	11.05	27.58	45.69	14.42
850.00	10.45	29.55	36.57	14.68	11.26	27.56	44.52	15.79
875.00	10.06	29.91	37.08	15.22	11.19	27.21	43.53	17.71
900.00	10.20	29.93	37.43	15.88	11.71	26.98	44.51	18.04
950.00	10.39	29.32	37.16	16.42	11.85	25.83	41.50	19.39
1000.00	10.82	28.26	33.82	16.84	12.03	24.49	42.41	17.55
1100.00	11.80	27.05	29.27	19.07	11.45	23.40	42.59	25.36
1150.00	11.86	27.42	28.19	20.03	11.17	22.65	36.52	23.32
1200.00	12.57	26.52	29.22	20.14	11.57	22.07	34.21	19.68

Input Frequency (MHz)	INPUT RF= 10dBm Conversion Loss (dB)	Harmonic Output Below F2 (-dBc) F1	F3	F4	INPUT RF= 15dBm Conversion Loss (dB)	Harmonic Output Below F2 (-dBc) F1	F3	F4
1200.00	11.62	24.39	34.69	18.76	11.98	20.99	32.59	22.26
1300.00	11.46	24.74	36.51	17.80	11.66	20.99	34.74	19.84
1400.00	11.53	21.40	32.39	15.23	11.19	18.65	35.06	17.29
1500.00	10.85	20.20	27.53	18.33	10.89	17.25	34.00	21.23
1600.00	10.28	20.96	28.80	23.83	10.47	17.46	49.70	20.69
1700.00	10.54	21.05	27.62	25.30	10.45	16.88	31.19	28.07
1800.00	10.48	21.09	30.11	44.00	10.93	16.93	25.40	46.31
1850.00	10.88	20.35	33.46	35.37	11.45	17.22	24.89	37.47
1900.00	11.08	19.22	52.15	31.03	11.37	17.27	28.09	33.16
1950.00	11.51	17.74	34.22	44.11	11.16	16.02	35.11	50.14
2000.00	11.71	17.28	28.56	39.52	11.37	14.87	44.49	45.20
2050.00	11.94	16.57	28.40	37.40	11.59	14.04	42.35	38.11
2100.00	12.09	16.42	30.20	39.12	11.78	13.87	39.30	38.07
2150.00	12.19	16.62	29.11	34.90	11.76	14.22	37.34	29.99
2200.00	12.36	16.51	30.27	36.11	11.50	14.00	36.61	29.03

Demo Board MCL P/N: TB-473+
Suggested PCB Layout (PL-287)



NOTES:
1. TRACE WIDTH AND GAP ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020"±.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP 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).

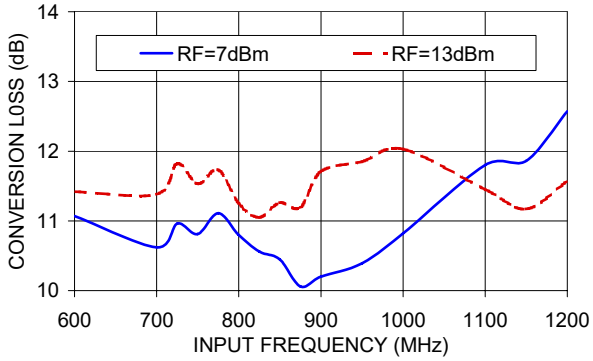
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

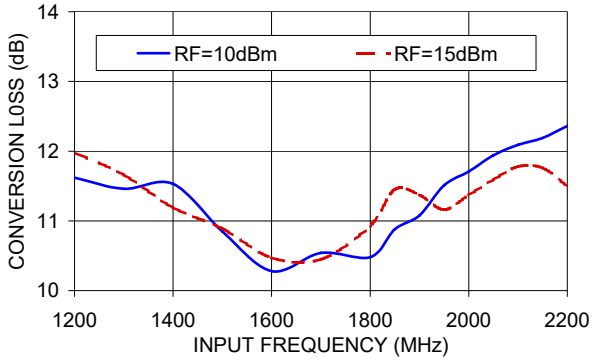
REV. C
ECO-001731
KSX2-442+
ED-13386/1
DJ/CP/AM
200212

Mini-Circuits®
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

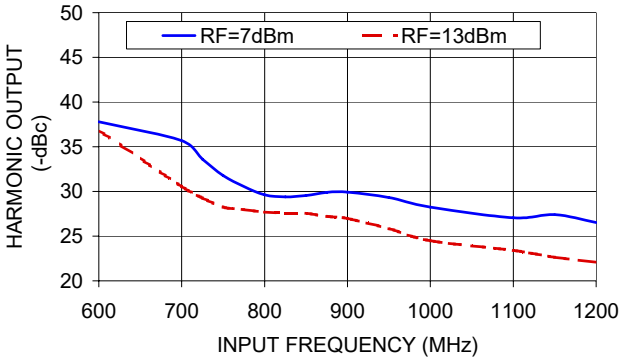
KSX2-442+
CONVERSION LOSS



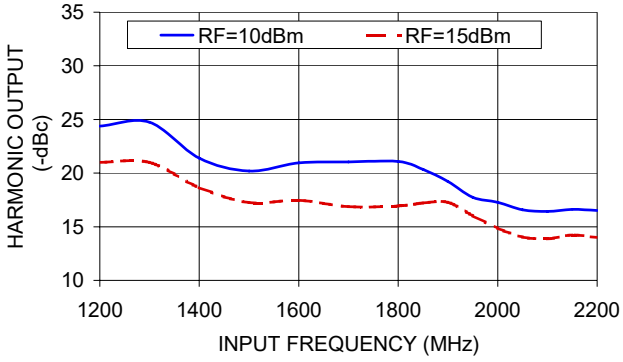
KSX2-442+
CONVERSION LOSS



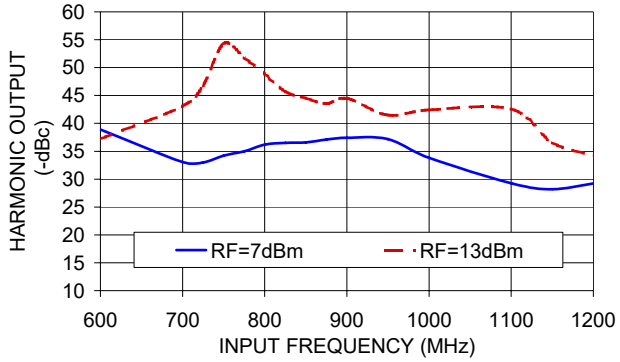
KSX2-442+
HARMONIC OUTPUT F1



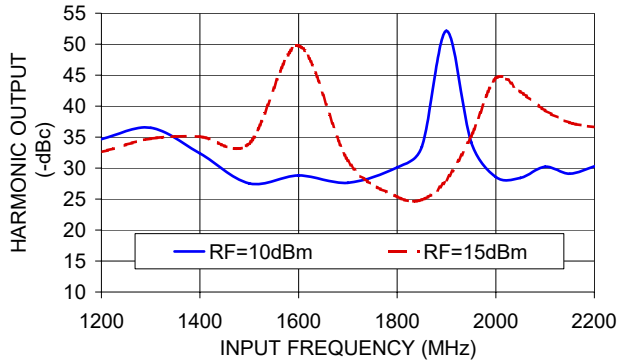
KSX2-442+
HARMONIC OUTPUT F1



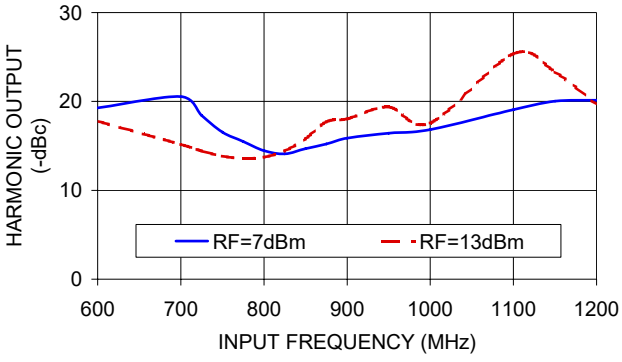
KSX2-442+
HARMONIC OUTPUT F3



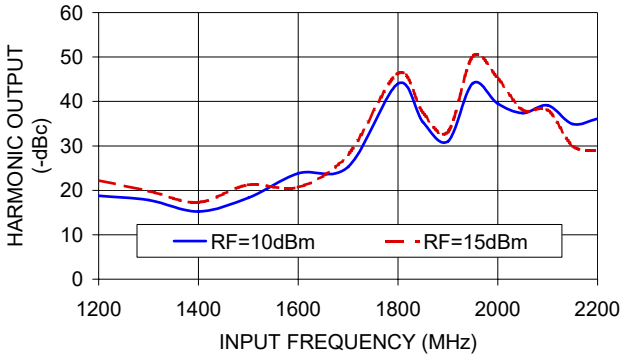
KSX2-442+
HARMONIC OUTPUT F3



KSX2-442+
HARMONIC OUTPUT F4



KSX2-442+
HARMONIC OUTPUT F4



Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- View KSX2-442+ on WIN SOURCE
- Mini-Circuits Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- Global Sourcing Solution
- Obsolete Management
- Cost Control Management
- Shortage Management
- Alternative Solution
- Excess Inventory Management