X4 Frequency Multiplier

RKK-4-23+

50Ω Output 1280 to 2000 MHz

Generic photo used for illustration purposes only

CASE STYLE: CK1246

+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 Power	20dBm

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

Pin Connections

INPUT	2
OUTPUT	10
GROUND	1,3,4,5,6,7,8,9,11,12,13,14,15,16

Features

- broadband
- high rejection F1, 27 dBc typ; F2, 34 dBc typ; F3, 38 dBc typ; F5, 30 dBc typ.
- aqueous washable

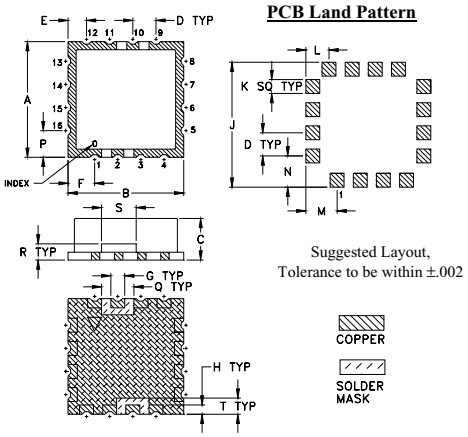
Applications

- synthesizers
- local oscillators
- satellite up and down converters

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100
13"	200, 500

Outline Drawing

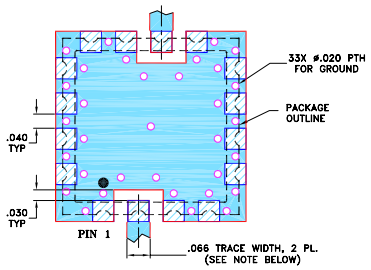


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72	1.52

L	M	N	P	Q	R	S	T	wt.
.100	.135	.135	.115	.140	.070	.150	.070	grams
2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0

Demo Board MCL P/N: TB-435+
Suggested PCB Layout (PL-267)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

Electrical Specifications

MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)							
	F1 Input	F4 Output	Min.	Max.	Typ.	Max.	F1 Typ.	F1 Min.	F2 Typ.	F2 Min.	F3 Typ.	F3 Min.	F5 Typ.	F5 Min.
4	320-500	1280-2000	11	15	24.5	30	27	21	34	20	38	23	30	24

* Harmonics of input frequency below the power level of F4, at RF in +11dBm

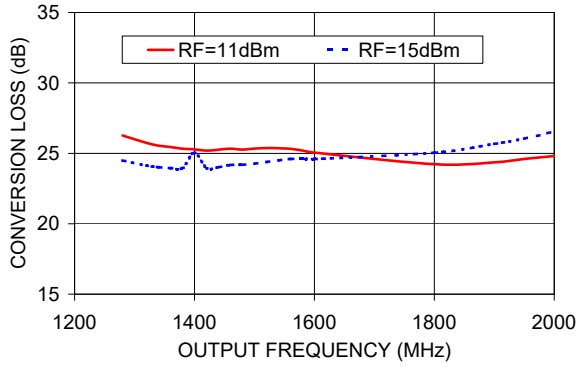
Typical Performance Data

Input Frequency (MHz)	INPUT RF= 11dBm Conversion Loss (dB)	Harmonic Output Below F4 (-dBc)				INPUT RF= 15dBm Conversion Loss (dB)	Harmonic Output Below F4 (-dBc)			
	F4	F1	F2	F3	F5	F4	F1	F2	F3	F5
320.00	26.27	28.75	35.44	46.96	39.24	24.49	32.70	36.15	53.13	29.02
330.00	25.74	29.02	35.84	45.50	38.71	24.13	32.82	36.44	58.48	30.17
335.00	25.55	29.08	35.82	44.71	37.64	24.02	32.98	36.35	65.96	30.87
340.00	25.45	29.06	35.66	44.05	36.39	23.95	32.94	36.20	61.74	31.54
345.00	25.33	29.05	35.69	42.56	34.90	23.95	32.81	36.13	49.78	31.55
350.00	25.28	29.00	35.66	39.96	32.82	25.04	31.50	34.98	43.15	29.58
355.00	25.19	29.15	35.56	37.85	31.09	23.96	32.74	35.95	41.46	30.36
360.00	25.26	29.04	35.16	37.33	30.67	24.01	32.75	35.63	39.65	30.79
365.00	25.33	28.90	34.95	37.50	30.62	24.17	32.51	35.48	38.36	31.20
370.00	25.27	28.86	34.86	38.33	30.62	24.19	32.39	35.37	37.62	31.45
375.00	25.34	28.66	34.55	38.52	30.48	24.27	32.23	35.03	37.06	31.55
380.00	25.38	28.53	34.31	38.82	30.47	24.38	32.05	34.79	36.74	31.65
385.00	25.36	28.39	34.31	39.11	30.30	24.50	31.78	34.64	36.00	31.39
390.00	25.32	28.33	34.27	39.37	29.51	24.60	31.50	34.62	35.39	30.46
395.00	25.20	28.37	34.17	39.84	29.08	24.61	31.45	34.47	34.75	29.84
400.00	25.05	28.50	34.06	40.22	28.91	24.59	31.42	34.32	34.27	29.48
450.00	24.23	28.24	31.41	39.88	28.38	25.04	29.90	32.51	36.06	26.57
475.00	24.36	27.26	28.05	46.24	28.68	25.67	28.48	31.61	35.95	26.34
487.50	24.60	26.34	25.91	44.43	28.49	26.04	27.39	30.40	32.60	26.39
500.00	24.81	25.80	23.75	38.79	28.73	26.54	26.04	28.27	30.25	27.07

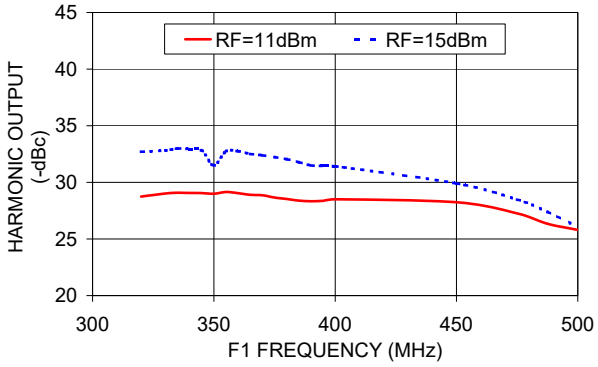
Notes

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

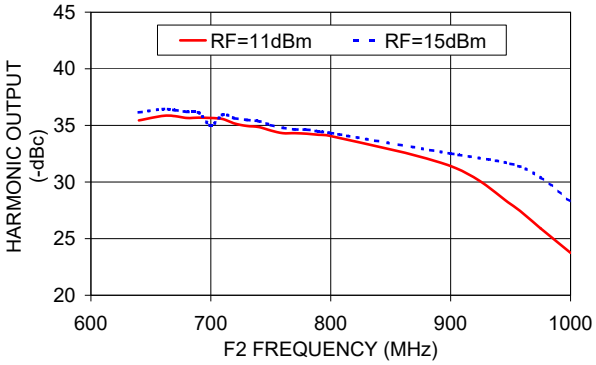
RKK-4-23+
CONVERSION LOSS



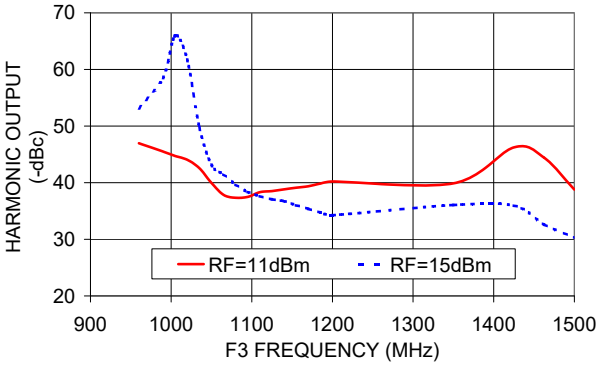
RKK-4-23+
HARMONIC OUTPUT F1



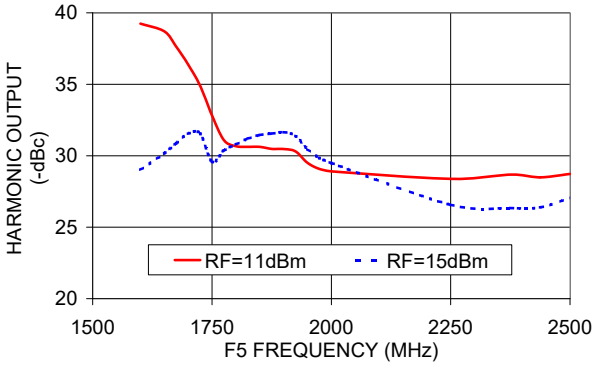
RKK-4-23+
HARMONIC OUTPUT F2



RKK-4-23+
HARMONIC OUTPUT F3



RKK-4-23+
HARMONIC OUTPUT F5



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Frequency Multiplier (Quadrupler) RKK-4-23+

Typical Performance Data

FREQUENCY (MHz)						RF IN=+11dBm					
						CONV. LOSS (dB)	HARMONIC OUTPUT* (-dBc)				
X 1 OUTPUT	X 2 OUTPUT	X 3 OUTPUT	X 4 OUTPUT	X 5 OUTPUT	X 6 OUTPUT	X 4 OUTPUT	X 1 OUTPUT	X 2 OUTPUT	X 3 OUTPUT	X 5 OUTPUT	X 6 OUTPUT
200	400	600	800	1000	1200	68.57	-10.07	-9.13	2.73	12.72	-30.39
210	420	630	840	1050	1260	63.42	-5.23	-3.58	7.91	10.44	-24.07
220	440	660	880	1100	1320	58.22	-0.37	2.15	13.18	10.49	-18.15
230	460	690	920	1150	1380	53.05	4.56	8.17	18.34	13.53	-11.75
240	480	720	960	1200	1440	47.65	9.69	14.60	23.23	17.62	-4.50
250	500	750	1000	1250	1500	42.48	14.65	20.42	28.79	22.41	3.34
260	520	780	1040	1300	1560	37.04	19.82	26.75	34.36	27.81	14.38
270	540	810	1080	1350	1620	32.31	24.18	31.85	39.02	33.35	22.22
280	560	840	1120	1400	1680	29.49	26.68	34.11	42.30	37.41	18.13
290	580	870	1160	1450	1740	28.35	27.42	34.51	44.06	37.13	18.59
300	600	900	1200	1500	1800	27.65	27.76	34.60	45.41	37.04	21.46
305	610	915	1220	1525	1830	27.30	27.96	34.93	46.19	37.51	22.85
310	620	930	1240	1550	1860	26.93	28.23	35.25	46.80	38.11	23.31
315	630	945	1260	1575	1890	26.65	28.41	35.29	47.13	38.82	23.23
320	640	960	1280	1600	1920	26.27	28.75	35.44	46.96	39.24	23.03
325	650	975	1300	1625	1950	25.95	28.95	35.70	46.39	39.20	22.90
330	660	990	1320	1650	1980	25.74	29.02	35.84	45.50	38.71	23.08
335	670	1005	1340	1675	2010	25.55	29.08	35.82	44.71	37.64	23.44
340	680	1020	1360	1700	2040	25.45	29.06	35.66	44.05	36.39	23.90
345	690	1035	1380	1725	2070	25.33	29.05	35.69	42.56	34.90	24.69
350	700	1050	1400	1750	2100	25.28	29.00	35.66	39.96	32.82	25.69
355	710	1065	1420	1775	2130	25.19	29.15	35.56	37.85	31.09	26.76
360	720	1080	1440	1800	2160	25.26	29.04	35.16	37.33	30.67	27.94
365	730	1095	1460	1825	2190	25.33	28.90	34.95	37.50	30.62	29.14
370	740	1110	1480	1850	2220	25.27	28.86	34.86	38.33	30.62	30.51
375	750	1125	1500	1875	2250	25.34	28.66	34.55	38.52	30.48	31.35
380	760	1140	1520	1900	2280	25.38	28.53	34.31	38.82	30.47	32.14
385	770	1155	1540	1925	2310	25.36	28.39	34.31	39.11	30.30	32.89
390	780	1170	1560	1950	2340	25.32	28.33	34.27	39.37	29.51	30.65
395	790	1185	1580	1975	2370	25.20	28.37	34.17	39.84	29.08	28.24
400	800	1200	1600	2000	2400	25.05	28.50	34.06	40.22	28.91	26.80
413	825	1238	1650	2063	2475	24.81	28.53	34.12	40.60	28.66	25.32
425	850	1275	1700	2125	2550	24.54	28.49	33.52	40.02	28.40	25.22
438	875	1313	1750	2188	2625	24.37	28.30	32.67	39.45	28.29	25.73
450	900	1350	1800	2250	2700	24.23	28.24	31.41	39.88	28.38	26.48
463	925	1388	1850	2313	2775	24.22	27.96	29.78	41.65	28.53	26.26
475	950	1425	1900	2375	2850	24.36	27.26	28.05	46.24	28.68	24.73
488	975	1463	1950	2438	2925	24.60	26.34	25.91	44.43	28.49	23.87
500	1000	1500	2000	2500	3000	24.81	25.80	23.75	38.79	28.73	25.03
513	1025	1538	2050	2563	3075	25.09	24.81	21.24	35.08	29.09	26.71
525	1050	1575	2100	2625	3150	25.49	24.47	18.25	32.07	29.03	30.24
538	1075	1613	2150	2688	3225	25.93	24.06	15.35	29.85	29.05	32.58
550	1100	1650	2200	2750	3300	26.42	23.53	12.43	28.03	29.00	30.10
563	1125	1688	2250	2813	3375	26.85	23.14	9.44	26.51	29.22	27.55
575	1150	1725	2300	2875	3450	27.34	22.63	6.54	25.03	28.71	25.71
588	1175	1763	2350	2938	3525	27.69	22.10	3.98	23.62	28.08	23.01
600	1200	1800	2400	3000	3600	28.05	21.66	1.74	22.28	27.49	21.95

*Harmonic Output below power level of X 4 Output .

Frequency Multiplier (Quadrupler) RKK-4-23+

Typical Performance Data

FREQUENCY (MHz)						RF IN=+13dBm					
						CONV. LOSS (dB)	HARMONIC OUTPUT* (-dBc)				
X 1 OUTPUT	X 2 OUTPUT	X 3 OUTPUT	X 4 OUTPUT	X 5 OUTPUT	X 6 OUTPUT	X 4 OUTPUT	X 1 OUTPUT	X 2 OUTPUT	X 3 OUTPUT	X 5 OUTPUT	X 6 OUTPUT
200	400	600	800	1000	1200	66.99	-7.17	-7.68	9.58	9.80	-28.94
210	420	630	840	1050	1260	61.62	-2.12	-1.82	14.80	9.73	-22.04
220	440	660	880	1100	1320	56.43	2.74	3.81	19.70	9.62	-15.80
230	460	690	920	1150	1380	51.31	7.62	9.69	24.45	12.09	-9.00
240	480	720	960	1200	1440	45.89	12.87	15.99	28.86	15.63	-1.51
250	500	750	1000	1250	1500	41.03	17.42	21.31	33.59	19.95	7.17
260	520	780	1040	1300	1560	36.02	22.15	26.97	38.48	24.64	17.51
270	540	810	1080	1350	1620	31.56	26.27	31.58	42.69	29.03	18.84
280	560	840	1120	1400	1680	28.57	28.90	33.97	45.27	32.27	20.63
290	580	870	1160	1450	1740	27.02	30.10	34.92	46.90	32.77	23.44
300	600	900	1200	1500	1800	26.33	30.41	35.12	48.05	31.91	27.02
305	610	915	1220	1525	1830	26.03	30.55	35.42	48.97	31.65	26.61
310	620	930	1240	1550	1860	25.66	30.82	35.72	50.03	31.68	25.10
315	630	945	1260	1575	1890	25.36	31.00	35.86	51.11	32.23	23.79
320	640	960	1280	1600	1920	25.04	31.21	36.00	51.99	32.57	23.06
325	650	975	1300	1625	1950	24.75	31.42	36.26	52.26	32.98	22.77
330	660	990	1320	1650	1980	24.54	31.56	36.42	51.52	33.09	22.83
335	670	1005	1340	1675	2010	24.33	31.66	36.46	49.64	33.16	23.10
340	680	1020	1360	1700	2040	24.28	31.60	36.31	47.74	33.09	23.53
345	690	1035	1380	1725	2070	24.22	31.55	36.30	45.39	32.43	24.22
350	700	1050	1400	1750	2100	24.16	31.48	36.27	42.13	31.27	24.97
355	710	1065	1420	1775	2130	24.18	31.44	36.10	39.38	30.68	25.67
360	720	1080	1440	1800	2160	24.18	31.50	35.88	39.34	31.10	26.50
365	730	1095	1460	1825	2190	24.25	31.35	35.68	40.12	31.35	27.16
370	740	1110	1480	1850	2220	24.29	31.19	35.51	40.42	31.29	27.71
375	750	1125	1500	1875	2250	24.30	31.08	35.23	40.08	31.23	28.12
380	760	1140	1520	1900	2280	24.32	30.95	35.05	39.46	31.19	28.53
385	770	1155	1540	1925	2310	24.41	30.73	35.00	38.71	30.94	29.03
390	780	1170	1560	1950	2340	24.38	30.63	34.87	38.10	30.13	27.99
395	790	1185	1580	1975	2370	24.33	30.55	34.77	37.85	29.57	26.47
400	800	1200	1600	2000	2400	24.28	30.58	34.63	37.55	29.32	25.46
413	825	1238	1650	2063	2475	24.17	30.45	34.54	36.83	28.75	24.27
425	850	1275	1700	2125	2550	24.13	30.16	33.92	36.43	28.35	24.22
438	875	1313	1750	2188	2625	24.14	29.86	33.19	36.48	27.94	25.88
450	900	1350	1800	2250	2700	24.26	29.61	32.20	37.25	27.54	29.39
463	925	1388	1850	2313	2775	24.53	28.96	31.07	38.93	27.29	32.62
475	950	1425	1900	2375	2850	24.87	28.16	29.87	40.97	27.08	31.88
488	975	1463	1950	2438	2925	25.24	27.12	28.30	37.95	26.60	30.65
500	1000	1500	2000	2500	3000	25.68	25.96	26.12	34.15	26.76	30.08
513	1025	1538	2050	2563	3075	26.18	24.88	23.28	31.39	27.13	29.42
525	1050	1575	2100	2625	3150	26.78	24.47	20.16	29.06	27.55	29.21
538	1075	1613	2150	2688	3225	27.36	23.86	17.21	27.36	27.85	28.82
550	1100	1650	2200	2750	3300	28.08	23.11	14.15	25.82	27.69	26.52
563	1125	1688	2250	2813	3375	28.70	22.58	10.72	24.47	27.27	23.96
575	1150	1725	2300	2875	3450	29.37	21.95	7.13	23.15	25.92	20.51
588	1175	1763	2350	2938	3525	29.90	21.22	3.91	21.85	24.78	18.19
600	1200	1800	2400	3000	3600	30.46	20.63	1.13	20.48	23.74	17.32

*Harmonic Output below power level of X 4 Output .

Frequency Multiplier (Quadrupler) RKK-4-23+

Typical Performance Data

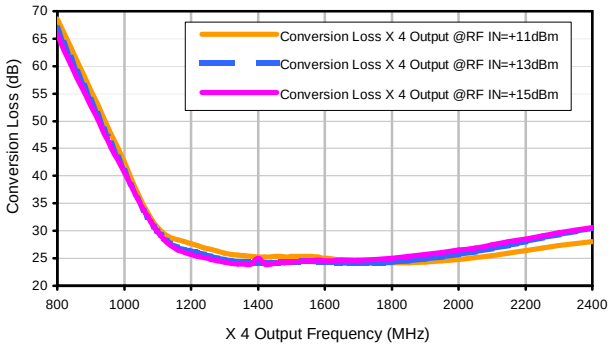
FREQUENCY (MHz)						RF IN=+15dBm					
						CONV. LOSS (dB)	HARMONIC OUTPUT* (-dBc)				
X 1 OUTPUT	X 2 OUTPUT	X 3 OUTPUT	X 4 OUTPUT	X 5 OUTPUT	X 6 OUTPUT	X 4 OUTPUT	X 1 OUTPUT	X 2 OUTPUT	X 3 OUTPUT	X 5 OUTPUT	X 6 OUTPUT
200	400	600	800	1000	1200	65.75	-4.92	-5.78	11.54	25.56	-26.89
210	420	630	840	1050	1260	60.32	0.21	0.08	17.87	13.76	-19.73
220	440	660	880	1100	1320	55.30	4.84	5.29	23.65	18.94	-12.98
230	460	690	920	1150	1380	50.37	9.55	10.79	29.35	10.60	-4.78
240	480	720	960	1200	1440	45.19	14.54	16.91	34.36	13.10	5.62
250	500	750	1000	1250	1500	40.67	18.80	22.07	38.87	17.30	17.89
260	520	780	1040	1300	1560	36.01	23.17	27.12	42.91	22.45	19.55
270	540	810	1080	1350	1620	31.62	27.24	31.41	45.16	28.51	23.56
280	560	840	1120	1400	1680	28.34	30.20	34.00	46.68	31.73	24.75
290	580	870	1160	1450	1740	26.58	31.54	35.13	47.95	30.98	26.62
300	600	900	1200	1500	1800	25.69	32.09	35.42	48.83	29.87	37.63
305	610	915	1220	1525	1830	25.39	32.23	35.75	49.74	29.03	38.81
310	620	930	1240	1550	1860	25.07	32.36	35.97	50.64	28.58	31.40
315	630	945	1260	1575	1890	24.78	32.45	36.04	51.71	28.72	28.13
320	640	960	1280	1600	1920	24.49	32.70	36.15	53.13	29.02	26.27
325	650	975	1300	1625	1950	24.29	32.77	36.32	55.10	29.62	25.36
330	660	990	1320	1650	1980	24.13	32.82	36.44	58.48	30.17	25.03
335	670	1005	1340	1675	2010	24.02	32.98	36.35	65.96	30.87	25.07
340	680	1020	1360	1700	2040	23.95	32.94	36.20	61.74	31.54	25.25
345	690	1035	1380	1725	2070	23.95	32.81	36.13	49.78	31.55	25.79
350	700	1050	1400	1750	2100	25.04	31.50	34.98	43.15	29.58	25.30
355	710	1065	1420	1775	2130	23.96	32.74	35.95	41.46	30.36	27.20
360	720	1080	1440	1800	2160	24.01	32.75	35.63	39.65	30.79	28.01
365	730	1095	1460	1825	2190	24.17	32.51	35.48	38.36	31.20	28.67
370	740	1110	1480	1850	2220	24.19	32.39	35.37	37.62	31.45	29.17
375	750	1125	1500	1875	2250	24.27	32.23	35.03	37.06	31.55	29.16
380	760	1140	1520	1900	2280	24.38	32.05	34.79	36.74	31.65	29.13
385	770	1155	1540	1925	2310	24.50	31.78	34.64	36.00	31.39	29.40
390	780	1170	1560	1950	2340	24.60	31.50	34.62	35.39	30.46	28.03
395	790	1185	1580	1975	2370	24.61	31.45	34.47	34.75	29.84	26.40
400	800	1200	1600	2000	2400	24.59	31.42	34.32	34.27	29.48	25.26
413	825	1238	1650	2063	2475	24.62	31.20	34.20	33.90	28.58	23.59
425	850	1275	1700	2125	2550	24.72	30.64	33.59	34.33	27.77	23.32
438	875	1313	1750	2188	2625	24.81	30.20	33.15	35.09	27.18	24.92
450	900	1350	1800	2250	2700	25.04	29.90	32.51	36.06	26.57	28.27
463	925	1388	1850	2313	2775	25.33	29.28	32.13	36.73	26.29	32.76
475	950	1425	1900	2375	2850	25.67	28.48	31.61	35.95	26.34	36.63
488	975	1463	1950	2438	2925	26.04	27.39	30.40	32.60	26.39	33.37
500	1000	1500	2000	2500	3000	26.54	26.04	28.27	30.25	27.07	30.14
513	1025	1538	2050	2563	3075	26.87	25.14	25.58	28.22	28.54	28.32
525	1050	1575	2100	2625	3150	27.44	24.56	22.29	27.44	29.90	27.77
538	1075	1613	2150	2688	3225	27.99	24.10	19.50	25.25	30.72	28.25
550	1100	1650	2200	2750	3300	28.53	23.56	16.55	24.20	30.57	27.37
563	1125	1688	2250	2813	3375	29.07	23.19	12.80	23.49	29.04	24.62
575	1150	1725	2300	2875	3450	29.66	22.73	8.69	22.55	26.70	21.24
588	1175	1763	2350	2938	3525	30.15	22.13	5.17	21.66	25.18	19.22
600	1200	1800	2400	3000	3600	30.57	21.69	2.34	20.75	24.34	18.41

*Harmonic Output below power level of X 4 Output .

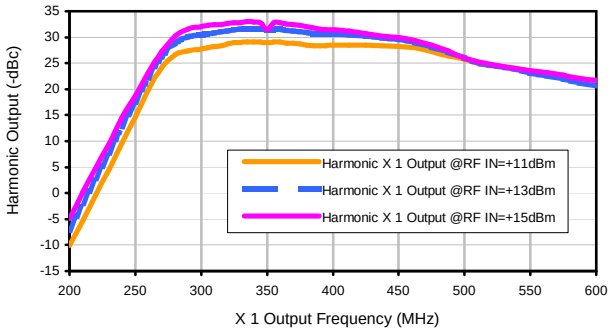
Frequency Multiplier (Quadrupler) RKK-4-23+

Typical Performance Curves

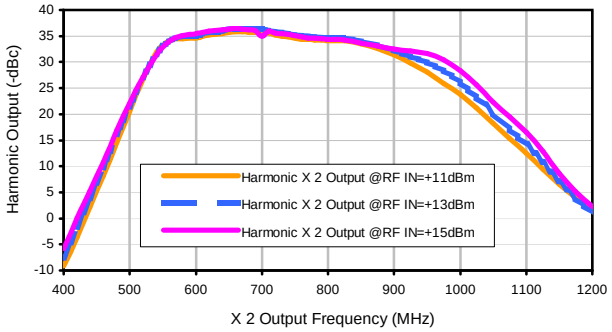
Conversion Loss X 4 Output



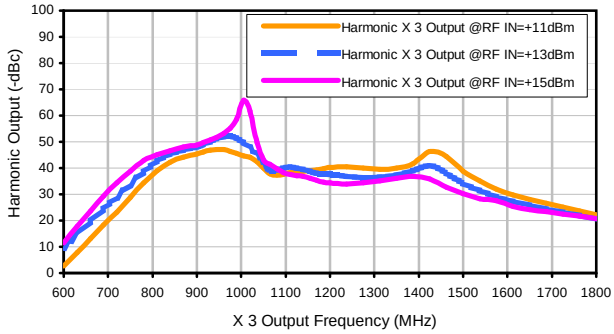
Harmonic X 1 Output



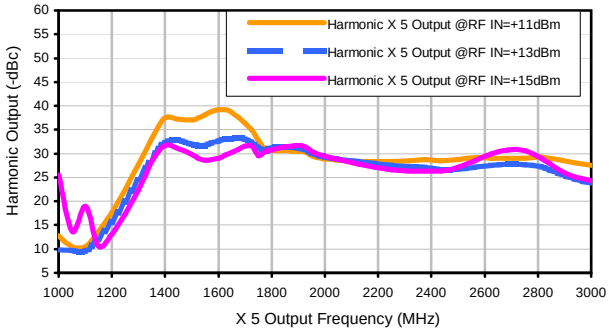
Harmonic X 2 Output



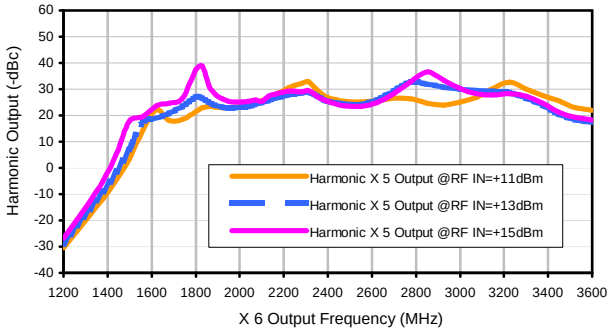
Harmonic X 3 Output



Harmonic X 5 Output



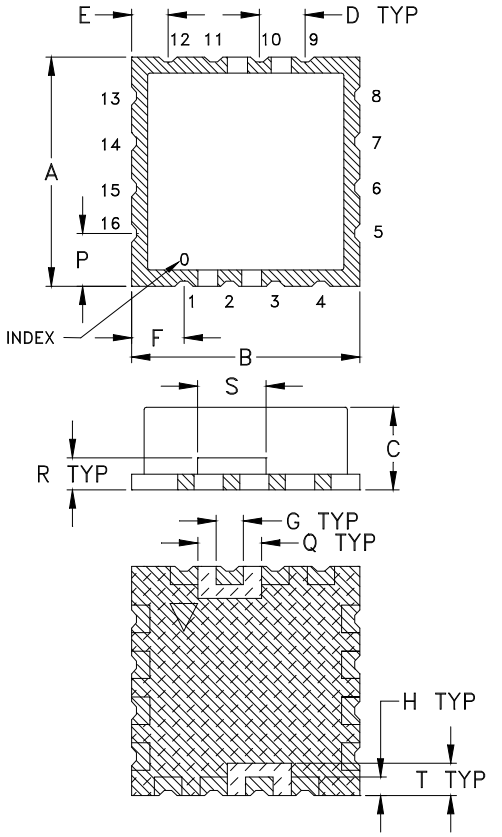
Harmonic X 6 Output



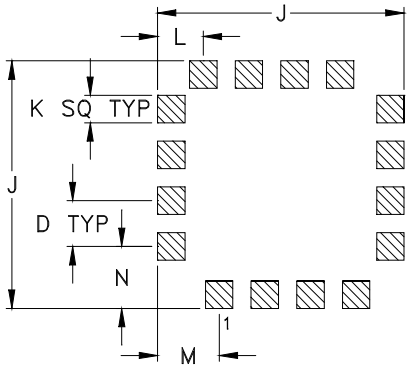
Case Style CK

CK1246

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

METALLIZATION

SOLDER RESIST

CASE #	A	B	C	D	E	F	G	H	J	K
CK1246	.500 (12.70)	.500 (12.70)	.180 (4.57)	.100 (2.54)	.080 (2.03)	.115 (2.92)	.060 (1.52)	.040 (1.02)	.540 (13.72)	.060 (1.52)

CASE #	L	M	N	P	Q	R	S	T	WT. GRAM
CK1246	.100 (2.54)	.135 (3.43)	.135 (3.43)	.115 (2.92)	.140 (3.56)	.070 (1.78)	.150 (3.81)	.070 (1.78)	1.0

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3Pl. ± .015

Notes:

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:
   For RoHS Case Styles: 3-5 µ inch (.08-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate. All models, (+) suffix.

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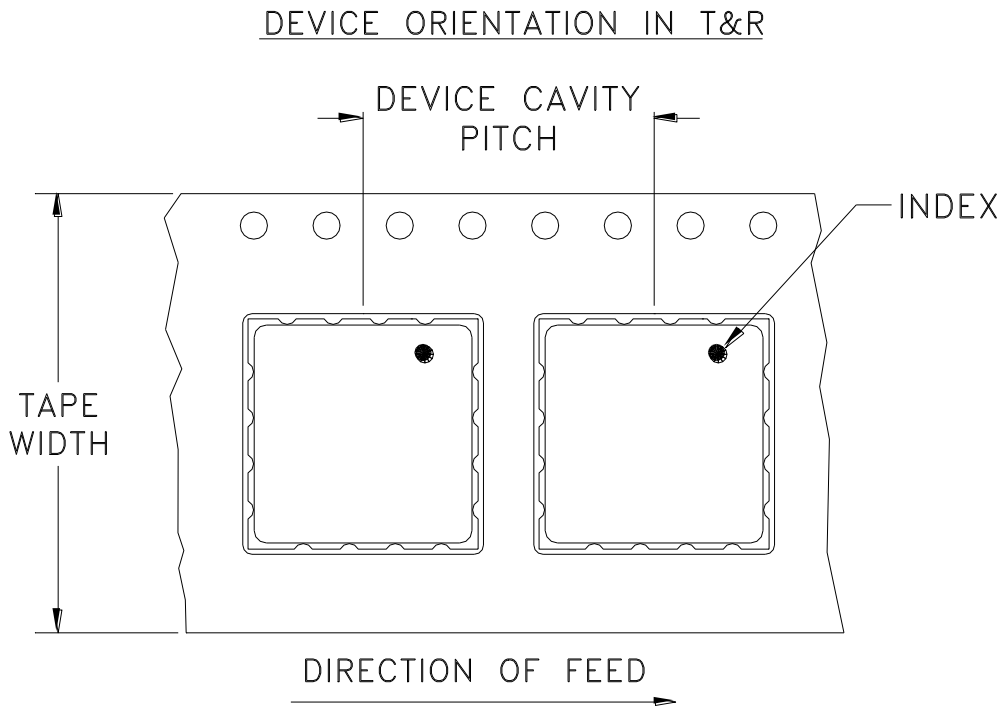
Tape & Reel Packaging TR-F37



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
24	16	7	Small quantity standards (see note)	10
				20
				50
				100
		13	Standard	200
				500

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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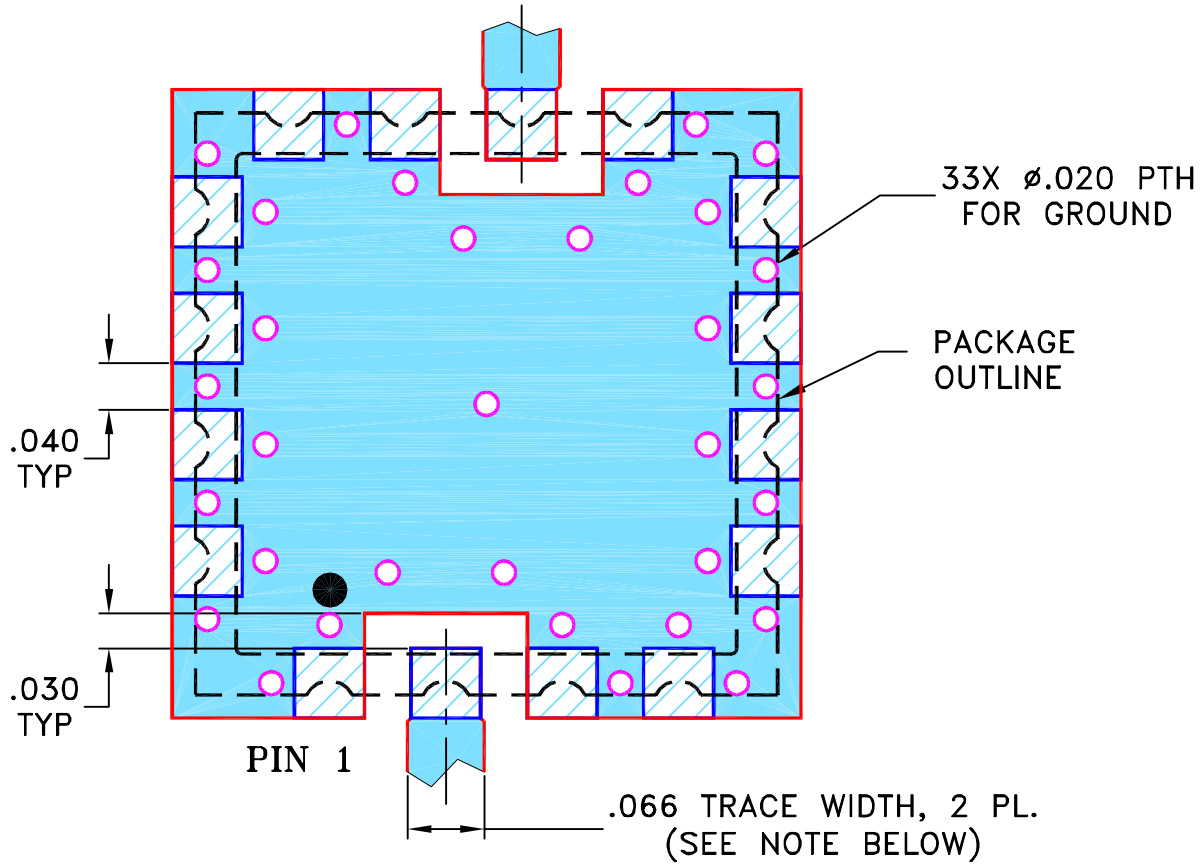
THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M109402	NEW RELEASE	01/24/07	PW	DJ

SUGGESTED MOUNTING CONFIGURATION FOR CK1246 CASE STYLE, "rz" PIN CONNECTION



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	PW	01/19/07
TOLERANCES ON:	CHECKED	IL	01/24/07
2 PL DECIMALS ±	APPROVED	DJ	01/24/07
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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ASHEETA1.DWG REV:A DATE:01/12/95

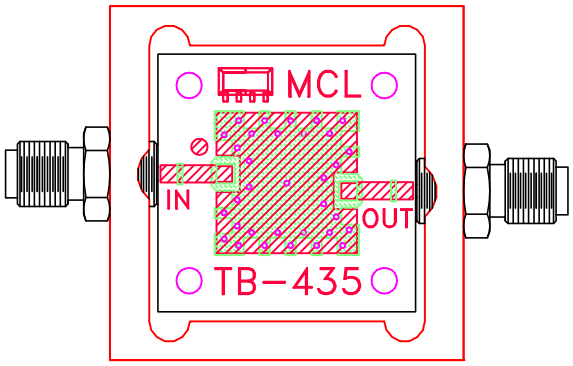
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, rz, CK1246, RKK, TB-435+

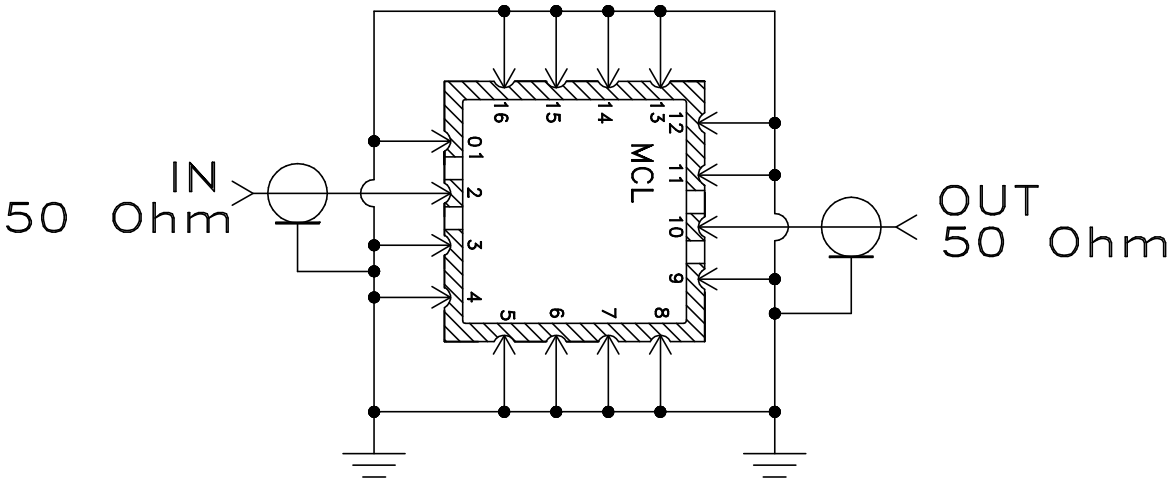
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-267	OR

FILE:	SCALE:	SHEET:
98PL267	6:1	1 OF 1

Evaluation Board and Circuit



TB-435+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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Environmental Specifications ENV03T2

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process, 245°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 20-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-883, Method 2007.3, Condition A
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215

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