



SME900-17

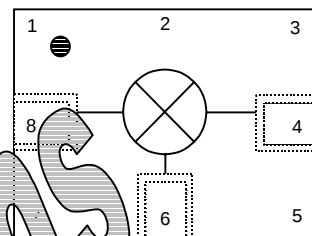
Low Cost Surface Mount Mixer

The Communications Edge™

Product Features

- RF 820 to 960 MHz
- LO 720 to 940 MHz
- IF 20 to 100 MHz
- High 3IIP: + 29 dBm (Typical)
- LO Drive: +17 dBm
- No Internal Solder Connections

Functional Diagram



Function	Pin No.
Ground	1-3
RF	4
Ground	5
IF	6
Ground	7
LO	8

Specifications

Parameters	Units	Typical	Guaranteed
		25°C	-40° to +70°C
SSB Conversion Loss (Max)	dB	6.2	7.7
Port-to-Port Isolation (Min)	dB	24	28
L-R	dB	26	21
L-I	dB	32	
R-I	dB	29	
3 rd Order Intercept Point (Min)	dBm	29	
VSWR	dBm	1.6:1	
R-P		1.6:1	
L-P		1.1:1	
I-Port		1.1:1	
1 dB Compression	dBm	+14	

1. Measured in a 50-ohm system with nominal LO drive of +17 dBm, low side LO, and downconverter application only, unless otherwise specified.
 2. Measured at RF = 280 MHz, LO = 750 MHz, IF = 70 MHz, unless otherwise specified.

Absolute Maximum Ratings

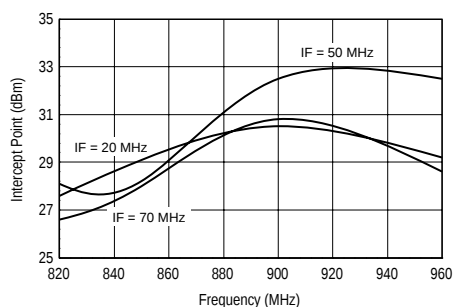
Parameters	Rating
Operating Temperature	-40 to +70 °C
Storage Temperature	-65 to +100 °C
RF Input Power	+27 dBm at +25°C

Ordering Information

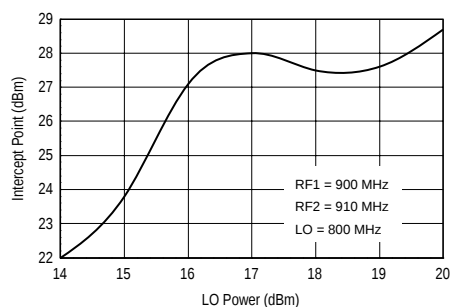
Part No.	Description
SME900-17	Mixer (Available in tape and reel)
SME900-17-PCB	Fully Assembled App. Ckt.

Performance Charts

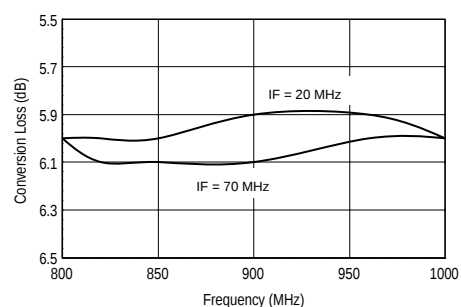
IIP3 vs. Frequency



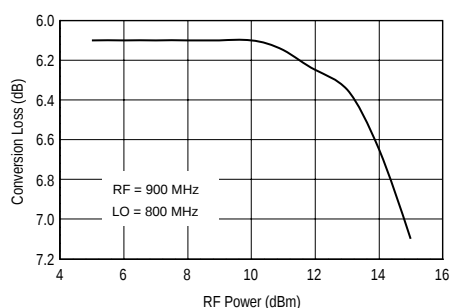
IIP3 vs. LO Power



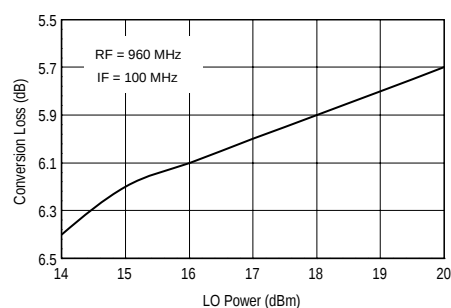
Conversion Loss vs. Frequency



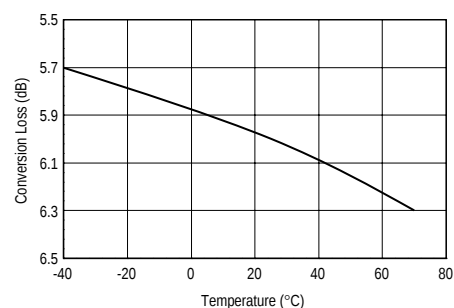
Conversion Loss vs. RF Power



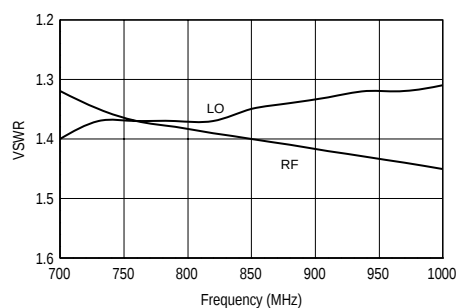
Conversion Loss vs. LO Power



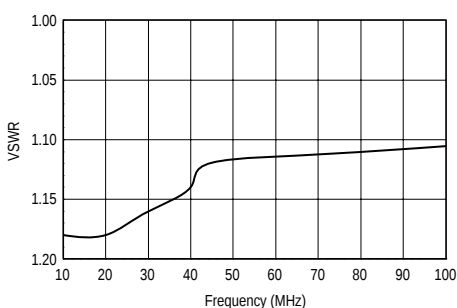
Conversion Loss vs. Temperature



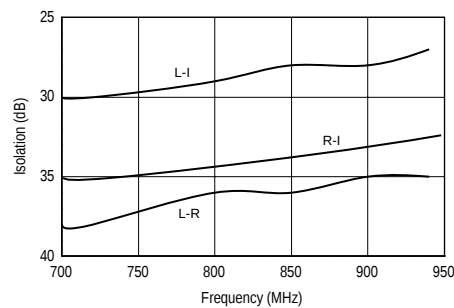
VSWR vs. Frequency



IF VSWR vs. Frequency



Isolation vs. Frequency





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Single-Tone IM Products

Harmonics of fLO

	0	1	2	3	4	5
0		21	35	44	39	40
1	25	0	32	14	28	33
2	65	61	66	74	74	59
3	>80	>80	>80	>80	>80	77
4	>80	>80	>80	>80	>80	>80
5	>80	>80	>80	>80	>80	>80

LO Mult	RF Mult	LO MHz	RF MHz	IM Prod MHz	dB
0	1	851	901	901	25
0	2	851	901	1802	65
0	3	851	901	2703	83
0	4	851	901	3604	96
0	5	851	901	4505	96
1	0	831	881	831	21
-1	1	831	881	50	0
1	-2	851	401	49	6
1	-3	851	267	55	8
1	-4	851	199	55	17
-1	5	851	181	55	27
2	0	831	881	1662	21
2	1	851	851	50	32
-2	2	851	851	50	66
-2	3	851	851	50	85
-2	4	851	851	50	95
2	5	851	851	351	96
3	0	831	881	2493	44
3	1	851	2603	50	14
3	2	851	1301	49	74
-3	3	851	868	51	81
-3	4	851	651	51	98
-3	5	851	521	52	98
4	0	831	881	3324	39
-4	1	851	3454	50	28
-4	2	851	1727	50	74
-4	3	851	868	51	81
-4	4	851	864	52	98
-4	5	851	691	51	98
5	0	831	881	4155	40
-5	1	851	4305	50	33
-5	2	851	2152	49	59
-5	3	851	1435	50	77
-5	4	851	1076	49	99
-5	5	851	861	50	95

Test Conditions RF at -10 dBm; LO at +17 dBm

RF harmonics and intermodulation products are referenced

fRF = 881 MHz

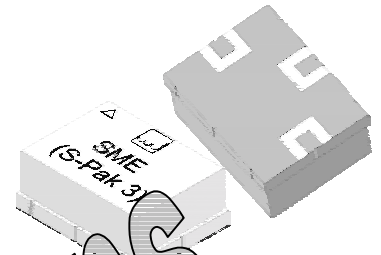
LO harmonics are referenced to the LO drive signal.



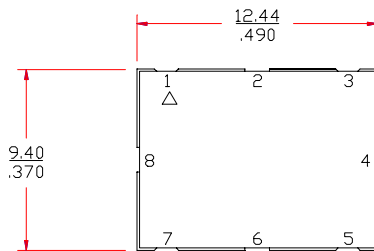
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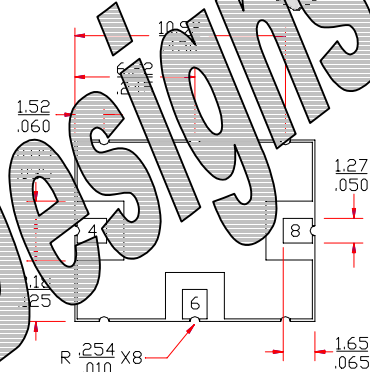
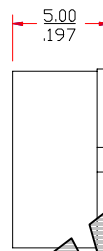
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OUTLINE DRAWING

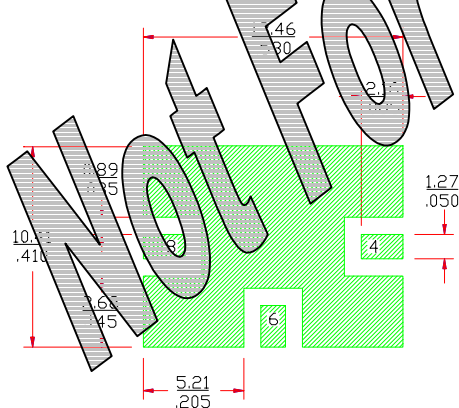


TOP VIEW



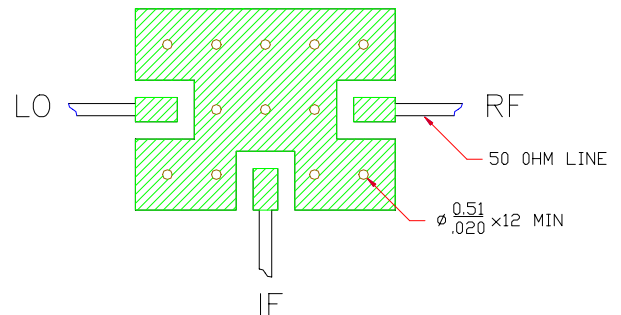
BOTTOM VIEW

LAND PATTERN



TOP VIEW

MOUNTING CONFIGURATION



FUNCTION	PIN NO.
GROUND	1-3
RF	4
GROUND	5
IF	6
GROUND	7
LO	8

- Notes:
1. Ground vias are critical for thermal and RF grounding considerations.
 2. A minimum of 12 ground vias are required.
 3. If your PCB design rules allow, ground vias should be placed under the land pattern for better RF and thermal performance. Otherwise ground vias should be placed as close to land pattern as possible.
 4. Trace width depends on PC board.