SME1900-17

Broadband Surface Mount Mixer

The Communications Edge™

Product Features

- RF 1600 to 2400 MHz
- LO 1400 to 2390 MHz
- IF 10 to 250 MHz
- High 3IIP: +29 dBm (Typical)
- LO Drive: +17 dBm
- No Internal Solder Connections

Product Photo

Specifications

Parameter	Units	Typical	Guaranteed +25°C	Guaranteed -40° to +70°C
SSB Conversion Loss (Max)				
RF = 1600-2000 MHz, LO = 1400-2000 MHz	dB	7.4	8.4	8.9
RF = 1600-2400 MHz, LO = 1400-2390 MHz	dB	8.4	9.4	9.9
Port-to-Port Isolation (Min)				
L-R = 1600-2000 MHz	dB	26	18	19
L-R = 1600-2390 MHz	dB	22	15	16
L-I = 1600-2000 MHz	dB	30	23	24
L-I = 1600-2390 MHz	dB	23	16	17
R-I	dB	25		
3rd Order Input Intercept Point	dBm	29		
VSWR				
R-Port = 1400-2000 MHz		1.7:1		
R-Port = 1400-2390 MHz		1.8:1		
L-Port = 1600 MHz		2.4:1		
L-Port = 2000 MHz		1.5:1		
I-Port		1.8:1		
1 dB Conversion 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 = 1850-1990 MHz, LO = 1610-1750 MHz, IF = 240 MHz, unless otherwise specified.

Absolute Maximum Ratings

Parameter	Rating
Operating Temperature	-40 to +70°C
Storage Temperature	-65 to +100°C
RF Input Power	+23 dBm at +25°C

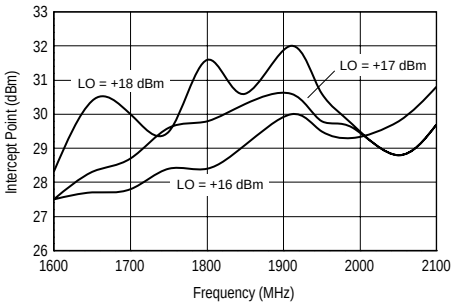
Ordering Information

Part No.	Description
SME1900-17	Mixer (Available in tape and reel)
SME1900-17-PCB	Fully Assembled Application Circuit

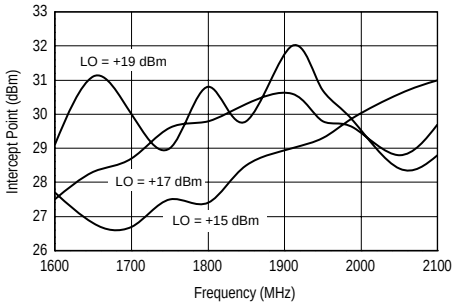
SME1900-17

Performance Charts

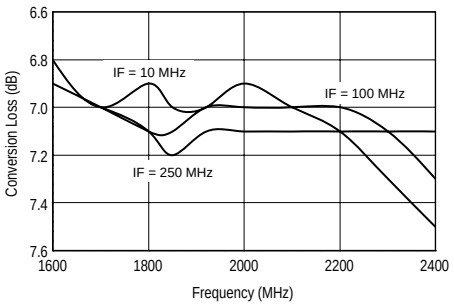
IIP3 vs. Frequency



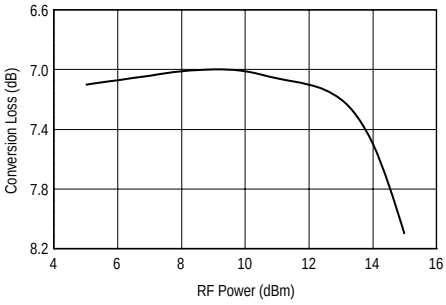
IIP3 vs. Frequency



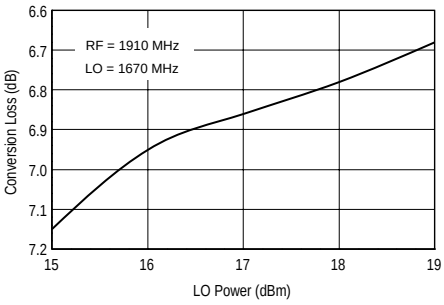
Conversion Loss vs. RF Frequency



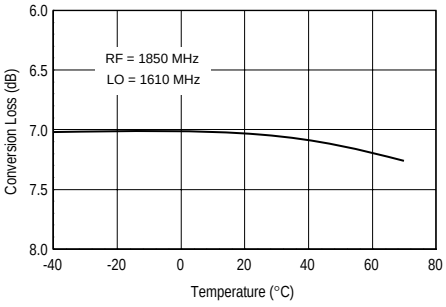
Conversion Loss vs. RF Power



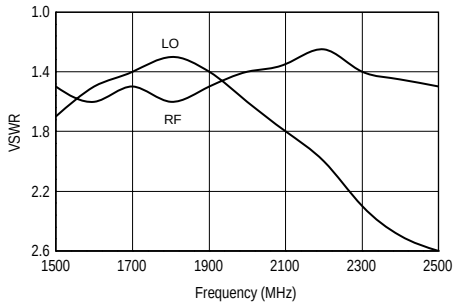
Conversion Loss vs. LO Power



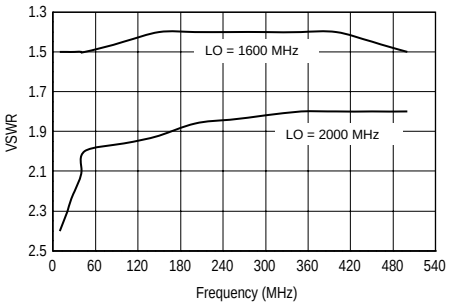
Conversion Loss vs. Temperature



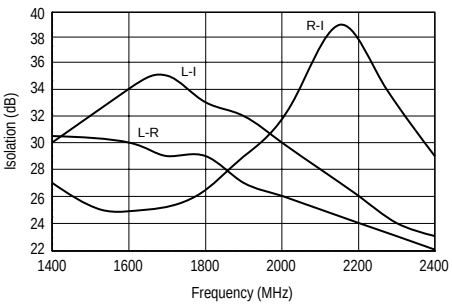
VSWR vs. Frequency



IF VSWR vs. Frequency



Isolation vs. Frequency



Single-Tone IM Products

Harmonics of fRF	Harmonics of fLO					
	0	1	2	3	4	5
0		21	27	36	36	29
1	26	0	29	24	24	38
2	62	56	64	58	61	65
3	>80	>80	>80	>80	>80	79
4	>80	>80	>80	>80	>80	>80
5	>80	>80	>80	>80	>80	>80

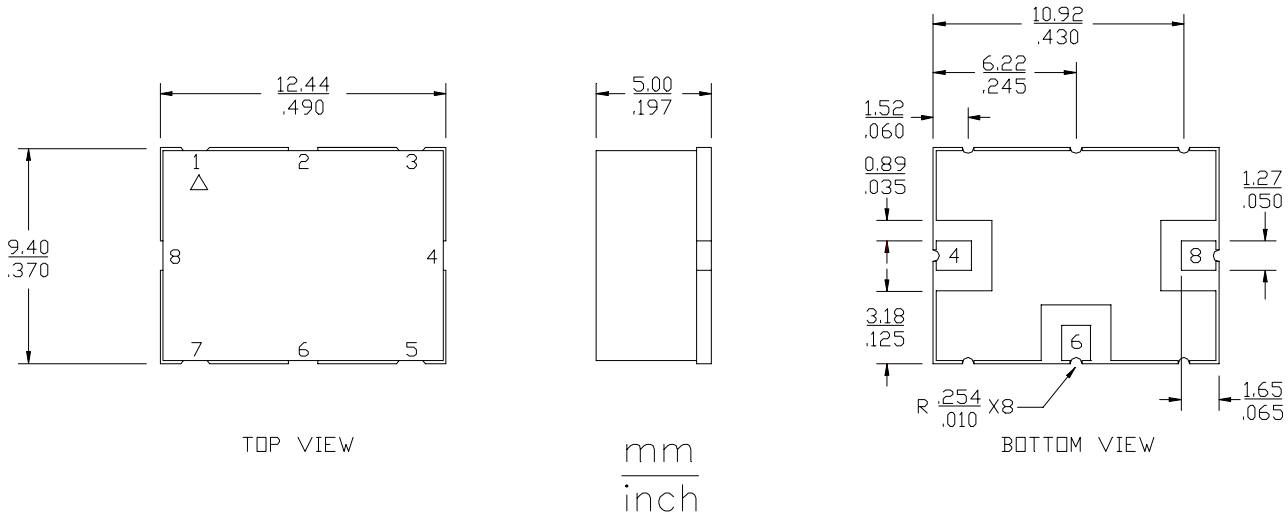
LO Mult	RF Mult	LO MHz	RF MHz	IM Prod MHz	IM Prod dB
0	1	2150	2200	2200	26
0	2	2150	2200	4400	62
0	3	2150	2200	6600	81
0	4	2150	2200	8800	95
0	5	2150	2200	11000	95
1	0	2150	2200	2150	21
-1	1	2150	2200	50	0
-1	2	2150	1100	50	56
-1	3	2150	734	52	87
-1	4	2150	550	50	95
-1	5	2150	440	50	95
2	0	2150	2200	4300	27
-2	1	2150	4350	50	29
-2	2	2150	2175	50	64
-2	3	2150	1450	50	79
-2	4	2150	1088	52	95
-2	5	2150	870	50	95
3	0	2150	2200	6450	36
-3	1	2150	6500	50	24
-3	2	2150	3250	50	58
-3	3	2150	2167	51	83
-3	4	2150	1625	50	94
-3	5	2150	1300	50	94
4	0	2150	2200	8600	36
-4	1	2150	8650	50	24
-4	2	2150	4325	50	61
-4	3	2150	2884	52	81
-4	4	2150	2163	52	95
-4	5	2150	1730	50	95
5	0	2150	2200	10750	29
-5	1	2150	10800	50	38
-5	2	2150	5400	50	65
-5	3	2150	3600	50	79
-5	4	2150	2700	50	93
-5	5	2150	2160	50	95

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

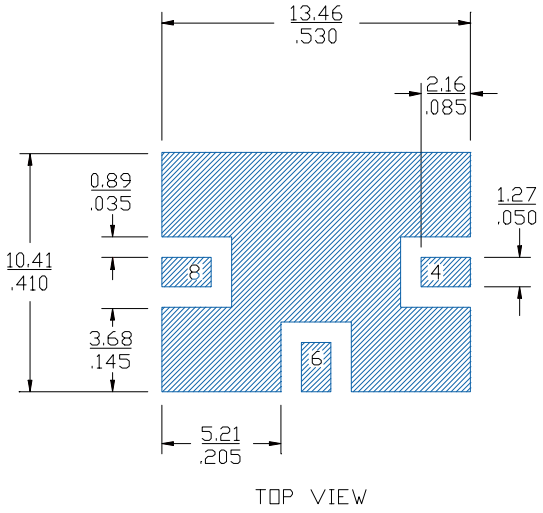
RF harmonics and intermodulation products are referenced to a desired signal produced by fLO = 2150 MHz and fRF = 2200 MHz.

LO harmonics are referenced to the LO drive signal.

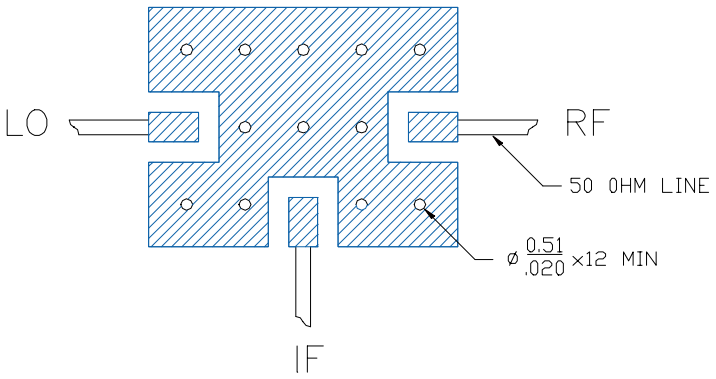
Outline Drawing



Land Pattern



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.

Specifications and information are subject to change without notice.

Caution! ESD sensitive device.