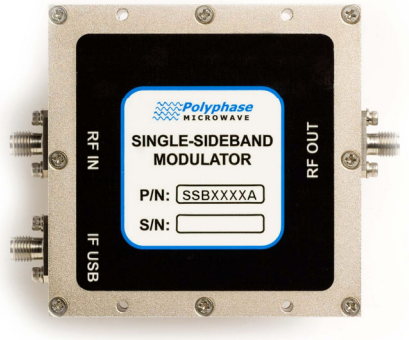
Polyphase MICROWAVE
A Technology Service Corporation Company

SSB1214A
SINGLE-SIDEBAND MODULATOR
1200 – 1400 MHz

FEATURES

RF Frequency:	1200 – 1400 MHz
Input IP3:	+17 dBm
Input P1dB:	+8 dBm
Sideband Suppression:	-40 dBc
LO Leakage:	-48 dBm
LO Power:	+14 dBm



DESCRIPTION

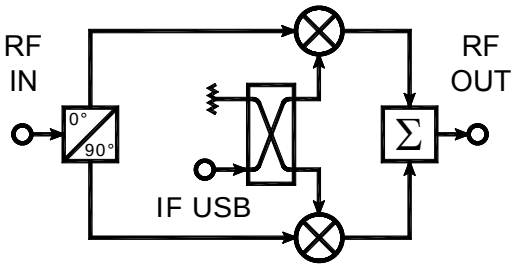
The SSB1214A is a single-sideband modulator optimized for linear modulation of an RF carrier (LO). The IF input is upconverted to the desired RF sideband while the unwanted RF sideband is internally suppressed.

The SSB1214A maintains excellent sideband suppression across multi-octave IF frequency bandwidths. In-stock IF bands include:

- 10 MHz to 50 MHz
- 30 MHz to 90 MHz

Other common IF bands are available. Please specify desired sideband (LSB/USB) and IF band when ordering.

BLOCK DIAGRAM
(USB CONFIGURATION)



ELECTRICAL SPECIFICATIONS

Test Conditions: +25°C, RF Input = +14 dBm, IF input = 0 dBm @ 30 MHz unless otherwise noted.

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
RF Frequency Range[1]		1200		1400	MHz
RF Input (LO) Power		+13	+14	+16	dBm
RF Input (LO) VSWR			1.6:1		Ratio
RF Output VSWR			2.5:1		Ratio
IF Input Impedance[2]			50		Ω
Conversion Loss[2]			8	9	dB
Input IP3[2]	2-Tone, Δf = 1 MHz		+17		dBm
Input P1dB[2]			+8		dBm
RF Carrier (LO) Leakage at RF Output	No IF input		-48	-40	dBm
RF-IF Isolation	No IF input		45		dB
Sideband Suppression[2]			-40	-30	dBc
Operating Temperature Range		-40		+85	°C
RF/IF Input Power w/o Damage				+25	dBm

Notes:

1. Standard unit is configured for USB operation and 10 MHz to 50 MHz IF band option.
2. Specified over entire IF frequency band.

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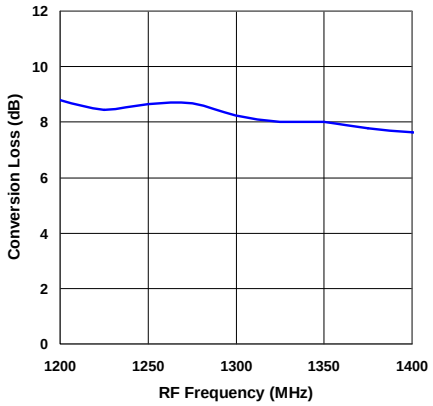
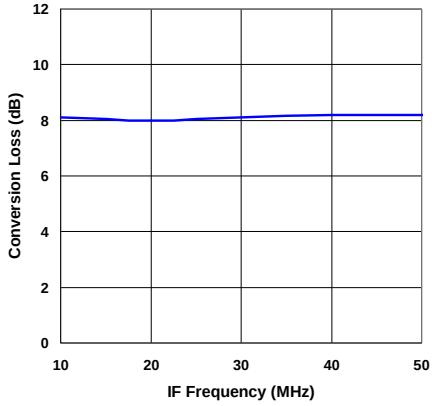
TYPICAL PERFORMANCE CHARACTERISTICS

Standard Test Conditions: +25°C, RF Input = +14 dBm, IF input = 0 dBm @ 30 MHz

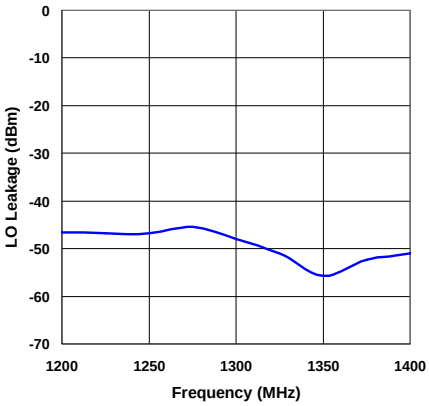
Conversion Loss vs. RF



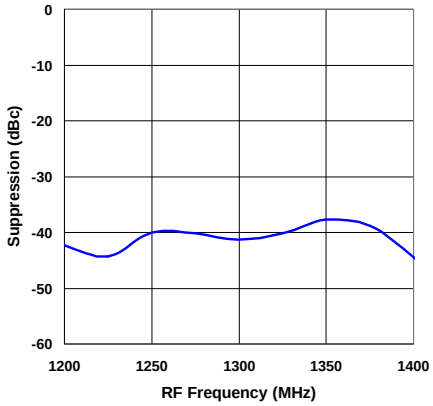
Conversion Loss vs. IF



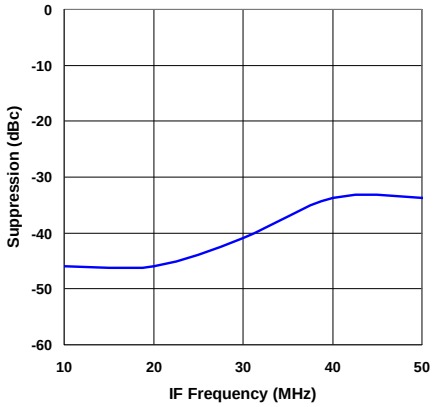
LO Leakage



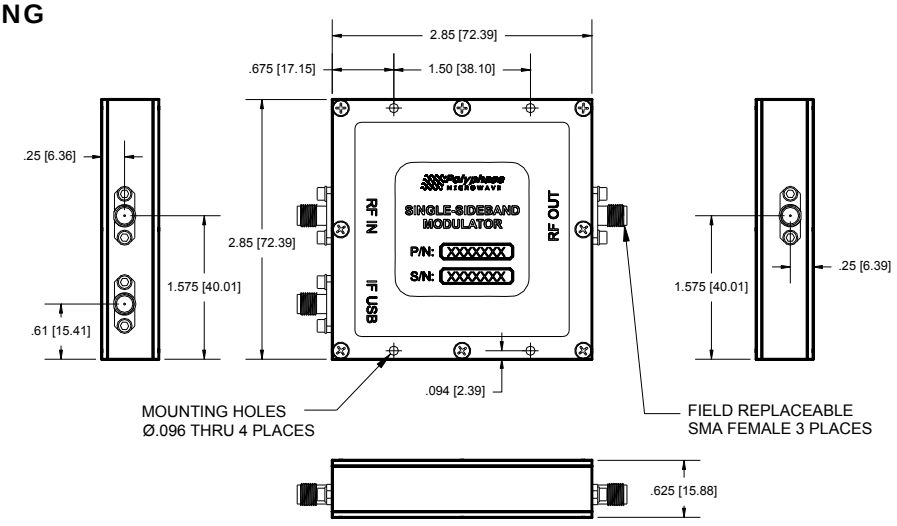
Sideband Suppression vs. RF



Sideband Suppression vs. IF



CASE DRAWING



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