30 TO 32 GHz LOW-NOISE FRONT END WITH LO MULTIPLIER OPTION

MODELS: SYSMM1X3032, SYSMM2X3032 AND SYSMM3X3032

FEATURES

- **Low noise figure..... 2.3 dB typical**
- **High gain ..... 30 dB typical**
- **Output 1 dB comp. ..... +10 dBm typical**
- **Integrated packaging ..... Hermetically sealed**
- **Integrated LO multiplier**

The SYSMM3X3032 is an integrated low-noise converter with internal image filtering, and LO multiplier. The integrated LO multiplier provides higher front-end compression point than would be possible with a passive sub-harmonic mixer. Internal LO filtering reduces spurious and fundamental LO leakage. All devices are screened to MIL-STD-883 method 1010 and 1008 prior to hermetic sealing for high reliability. The single piece housing is a robust mechanical design for ease of use in any system. Waveguide inputs, alternate frequency bands, and quadrature or image rejection style units are available. Please contact MITEQ.

ELECTRICAL SPECIFICATIONS

INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range		GHz	30		32
RF VSWR	50 ohm reference	Ratio		2.5:1	
V+ bias current	@ +9 to +16 V			290	
V- bias current	@ -9 to -16 V			30	
LO frequency range	SYSMM1X3032 SYSMM2X3032 SYSMM3X3032	GHz GHz GHz		28 14 9.33	
LO power range		dBm	+10	+12	+14
LO VSWR		Ratio		2.5:1	
TRANSFER CHARACTERISTICS	**CONDITION**	**UNITS**	**MIN.**	**TYP.**	**MAX.**
Conversion gain		dB	25	30	
Image rejection		dB	15	25	
Single-sideband noise figure		dB		2.3	2.8
Output power at 1 dB compression point		dBm	+7	+10	
OUTPUT PARAMETERS	**CONDITION**	**UNITS**	**MIN.**	**TYP.**	**MAX.**
IF frequency range		GHz	2		4
IF VSWR		Ratio		2:1	

NOTE: Test data supplied at 25°C; conversion gain, image rejection, noise figure and output 1 dB compression point.

MAXIMUM RATINGS

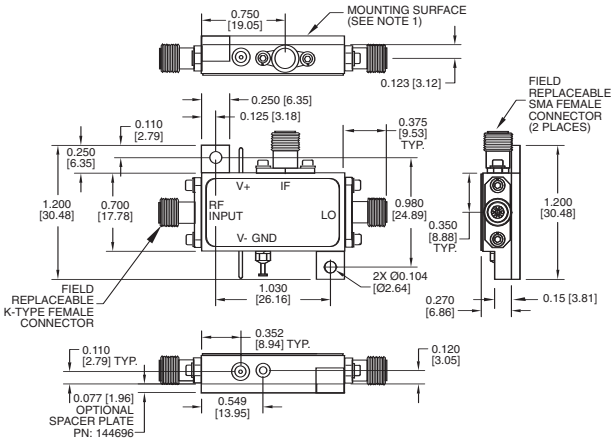
Specification temperature ..... +25°C
Operating temperature ..... -40 to +65°C
Storage temperature ..... -65 to +95°C

IMAGE REJECTION MIXER PRODUCTS

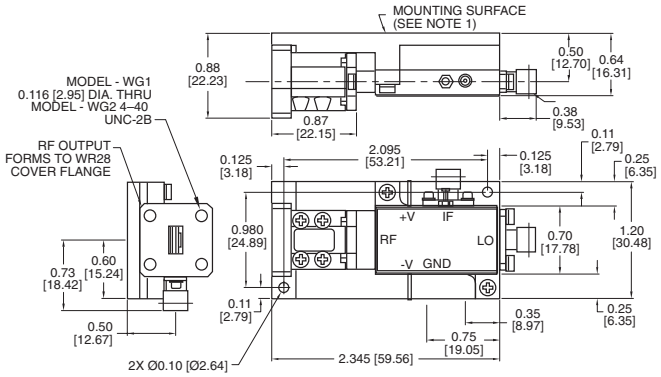
SYSMM1X3032, SYSMM2X3032 AND SYSMM3X3032

OUTLINE DRAWINGS

STANDARD UNIT

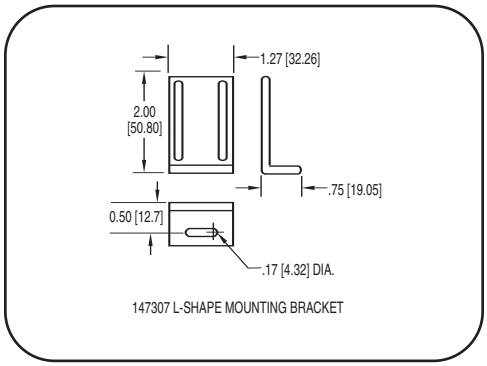


WG1, 2 WAVEGUIDE OPTIONS



NOTES:

1. Units mounting surface shall be attached to a heatsink capable of dissipating the devices power consumption without exceeding the devices temperature limits.
2. All dimensions shown in brackets [ ] are in millimeters.



147307 L-SHAPE MOUNTING BRACKET

ORDERING INFORMATION

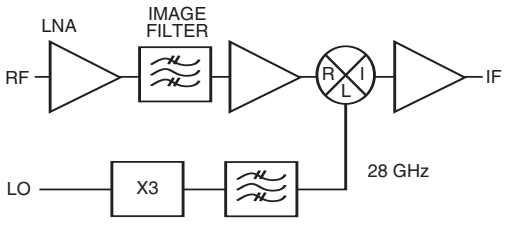
SYSMM3X3032 .....Front end with 3X LO multiplier
SYSMM2X3032 .....Front end with 2X LO multiplier
SYSMM1X3032 .....Front end with fundamental LO
SYSMM3X3032WG1 ....Front end with 3X LO multiplier and RF waveguide port
SYSMM2X3032WG1 ....Front end with 2X LO multiplier and RF waveguide port
SYSMM1X3032WG1 ....Front end with fundamental LO and RF waveguide port

Standard waveguide interface has 0.116 diameter clearance holes.
For waveguide port with #4-40 tapped holes, substitute...WG2 for...WG1.

AVAILABLE OPTIONS

PART NO.	DESCRIPTION
OPT143047	External DC-DC converter to generate -V for single supply requirements
OPT163370	Heatsink for non-waveguide unit
OPT144696	Spacer plate for non-waveguide unit (used when mounting unit to a flat surface, plate allows clearance for connectors)
OPT147307	L-shape mounting bracket

BLOCK DIAGRAM



TYPICAL APPLICATION