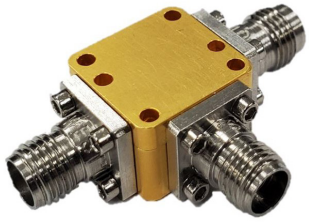
MIXER PRODUCTS

37 to 43 GHz Double-Balanced Mixer
Model M3743QW1A

ELECTRICAL SPECIFICATIONS					
INPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
RF frequency range	–	GHz	37	–	43
RF VSWR (RF = –10 dBm, LO = +17 dBm)	37 to 43 GHz	Ratio	–	2.0:1	–
LO frequency range	–	GHz	24	–	37
LO power range	–	dBm	+17	+18.5	+20
LO VSWR (LO = +17 dBm)	24 to 37 GHz	Ratio	–	2.5:1	–
TRANSFER CHARACTERISTICS	CONDITION	UNITS	MIN.	TYP.	MAX.
Conversion loss (IF = 12.5 to 18.5 GHz, LO = +17 dBm) LO = 24.5 GHz	37 to 43 GHz	dB	–	10	12
Conversion loss (IF = DC to 6 GHz, LO = 37 GHz) LO = +17dBm	37 to 43 GHz	dB	–	8	–
Single-sideband noise figure	37 to 43 GHz	dB	–	11	–
LO-to-RF isolation	37 to 43 GHz	dB	25	30	–
LO-to-IF isolation	37 to 43 GHz	dB	–	35	–
RF-to-IF isolation	37 to 43 GHz	dB	–	30	–
Input power at 1 dB compression	LO = +17 dBm	dBm	–	+5	–
Input two-tone third-order intercept point	LO = +17 dBm	dBm	–	+13	–
OUTPUT PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
IF frequency range	3 dB Bandwidth	GHz	–	DC to 18	–
IF VSWR (IF = –10 dBm, LO = +17 dBm)	–	Ratio	–	2.0:1	–



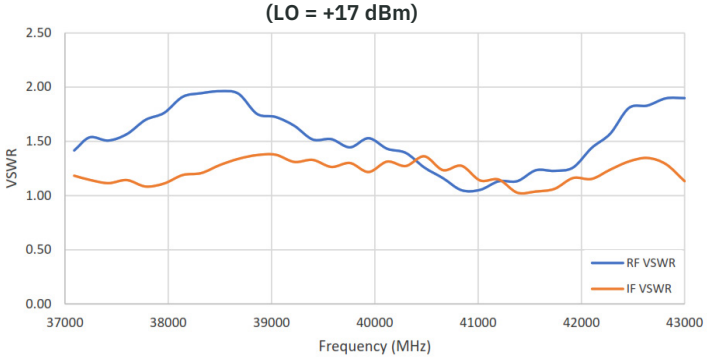
The Narda-MITEQ double-balanced M3743QW1A mixer series is designed specifically for the Q-band down conversion SATCOM market. This device performs as an up- or down-converter. This mixer can be used to down convert from Q-band directly to anywhere in between DC to 18 GHz.

KEY FEATURES

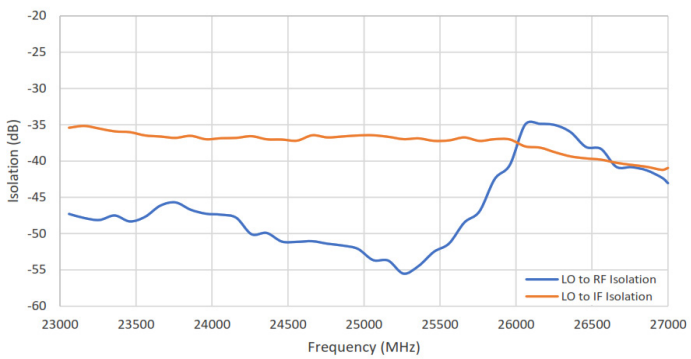
- RF/LO Coverage .....37 to 43 GHz
- IF Operation .....DC to 18 GHz
- LO Power range.....+17 to +20 dBm
- Input 1 dB comp. ...+5 dBm typical
- Packaging .....Connecterized

M3743QW1A TYPICAL TEST DATA

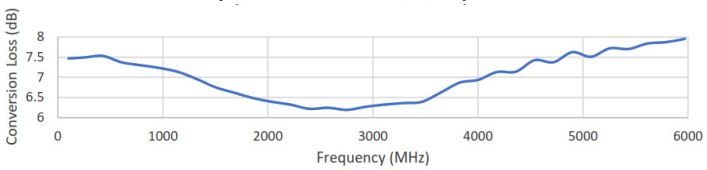
VSWR
(LO = +17 dBm)



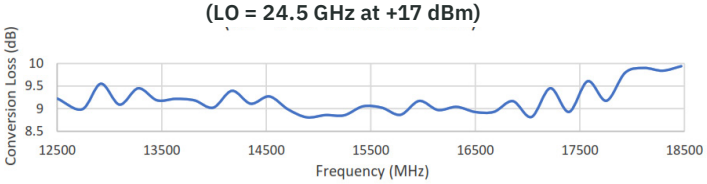
ISOLATION



CONVERSION LOSS (IF = DC to 6 GHz)
(LO = 37 GHz at +17 dBm)



CONVERSION LOSS (IF = 12.5 to 18.5 GHz)
(LO = 24.5 GHz at +17 dBm)



SINGLE-TONE (m) RF x (n) LO RELATIVE SPUR LEVEL (dBc)
(AVERAGE MIDBAND RF, LO FREQUENCIES,
RF = –10 dBm, LO = +17 dBm)

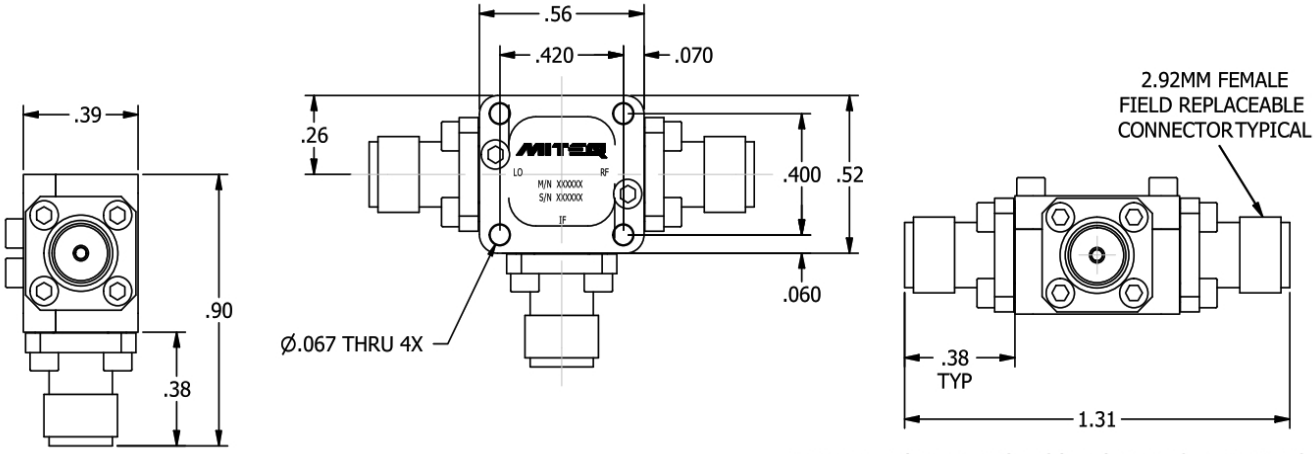
SPUR (m) RF x (n) LO	RF TEST FREQ. (GHz)	LO TEST FREQ. (GHz)	SPUR LEVEL (dBc)
1 x 1	39	24	REF
1 x 2	39	24	29
2 x 2	39	37	63
2 x 3	39	24	55
3 x 3	39	37	70

MAXIMUM RATINGS

Specification temperature..... +25°C
Operating temperature..... –54°C to +85°C
Storage temperature..... –65°C to +125°C

Note: Test data supplied at 25°C; conversion loss and LO-to-RF isolation @ LO = 24 GHz.

OUTLINE DRAWING 219353



MATERIAL: KOVAR, FINISH: GOLD OVER NICKEL PLATING

NOTE: Unless otherwise specified dimensions shown in inches.

Mixer Products - 37 to 43 GHz Double-Balanced Mixer, Model M3743QW1A

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Narda-MITEQ is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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