

Applications

- ▼ Point-to-Point Digital Radios
- ▼ Point-to-Multipoint Digital Radios

Features

- ▼ RF frequency: 35 - 40 GHz
- ▼ Conversion loss: 6 dB, (typ.)
- ▼ Functions as an up- or down-converter
- ▼ Singly Balanced
- ▼ No External Bias Required

Product Description

The MSH108C is a monolithic HEMT schottky diode, singly balanced mixer designed for use in commercial digital radios and wireless LANs. The design requires no external bias and can be used as an up-converter and as a down-converter. To ensure rugged and reliable operation, HEMT devices are fully passivated. Both bond pad and backside metallization are Ti/Au, which is compatible with conventional die attach, thermocompression, and thermosonic wire bonding assembly techniques.

Performance Characteristics (T_{OP} = 25°C)

Specification	Min	Typ	Max	Unit
RF frequency	35		40	GHz
LO frequency	35		40	GHz
IF frequency	1		3	GHz
LO power		11		dBm
Conversion loss				
Upconverter		5	6.5	dB
Downconverter		6	7.5	dB
IF used as LO		9	12	dB
Lower sideband		10	13	dB
LO-RF isolation		29		dB
RF return loss	10	14		dB
IF return loss	9	12		dB

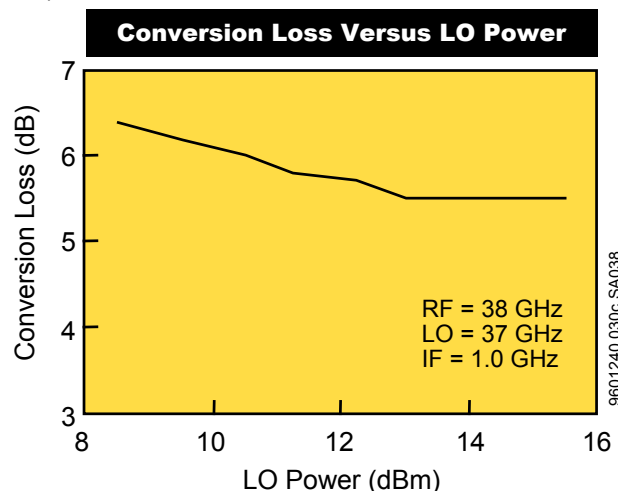
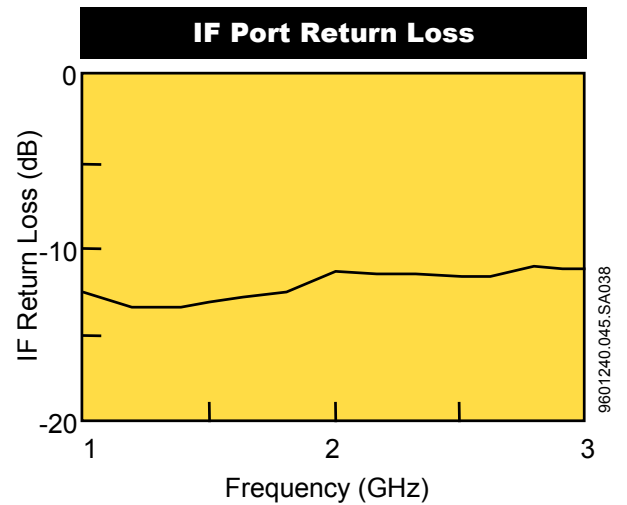
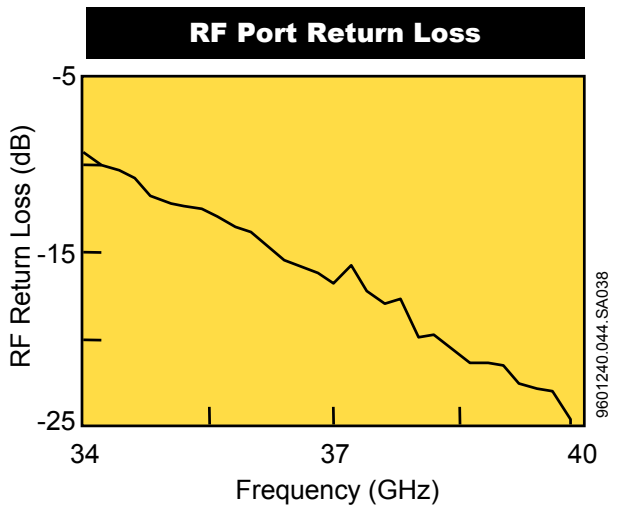
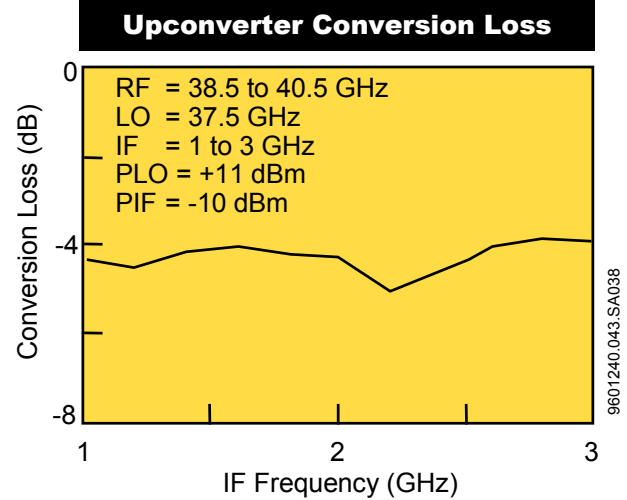
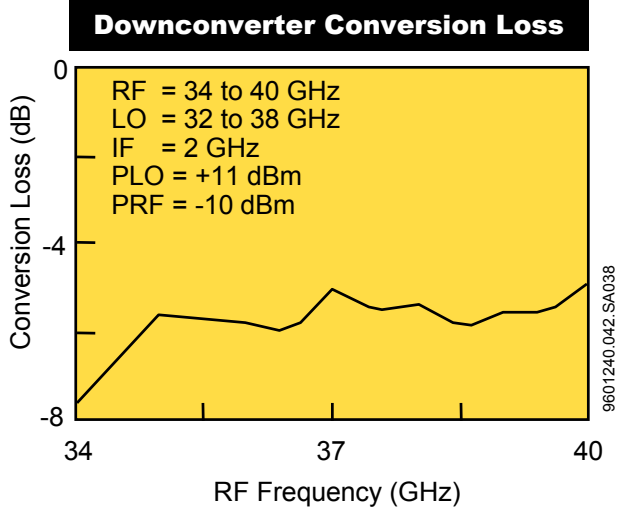
Absolute Maximum Ratings (T_{OP} = 25°C)

Parameter	Min	Max	Unit
Input LO Drive		16	dBm
Assy. Temperature (60 seconds)		300	°C

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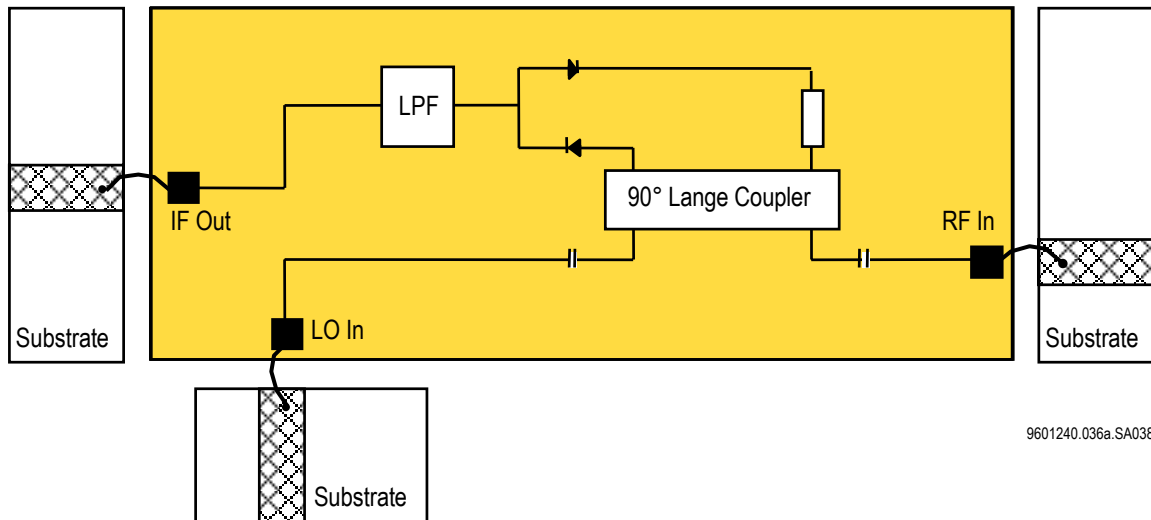
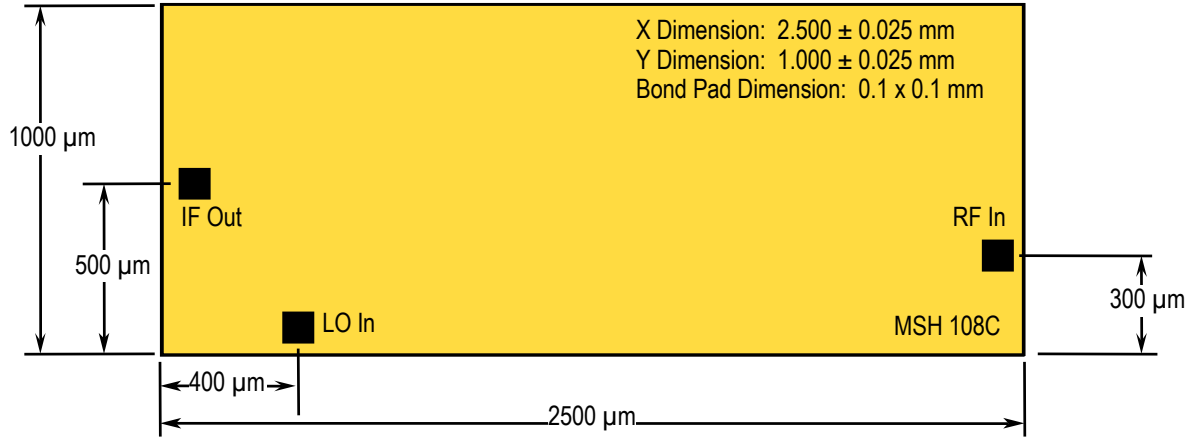
Measured Performance Characteristics (T_{OP} = 25°C)



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Die Size and Bond Pad Locations



Recommended Assembly Note

Best performance obtained from use of <10 mil (long) by 3 by 0.5 mil ribbon.

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