

## FEATURES

- Surface-mount W-band Multiplier
- WR10 for the RF input
- LO x 8 with buffer

## DESCRIPTION

gMXX0011 is a surface-mount GaAs multiplier for the W band. The multiplier offers a very wideband coverage having high output power. The package input features a WR-10 aperture for low-loss connection to a rectangular waveguide.

## TYPICAL APPLICATIONS

- Point-to-point communication
- Instrumentation
- Active imaging
- General purpose

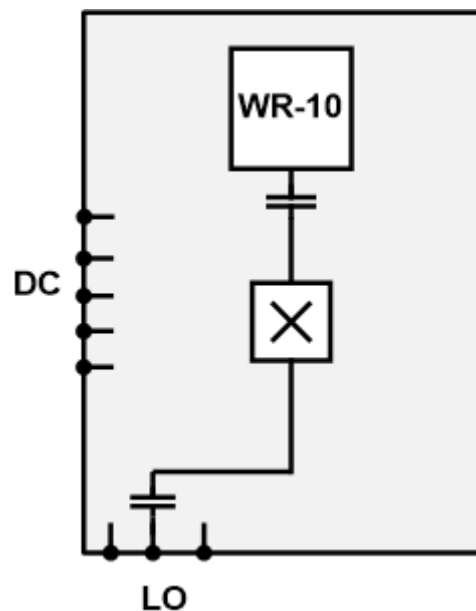


Figure 1. Block diagram of the multiplier

## ELECTRICAL PERFORMANCE

Table 1. Electrical performance  $T_A=25^\circ\text{C}$

Parameter	Min	Typ	Max	Unit
RF out frequency	85		105	GHz
LO input frequency	10.6		13.125	GHz
LO input power		2		dBm
LO multiplication factor		8		
RF output power		TBD		dBm
RF return loss		TBD		dB
LO return loss		10		dB
Power consumption		490		mW

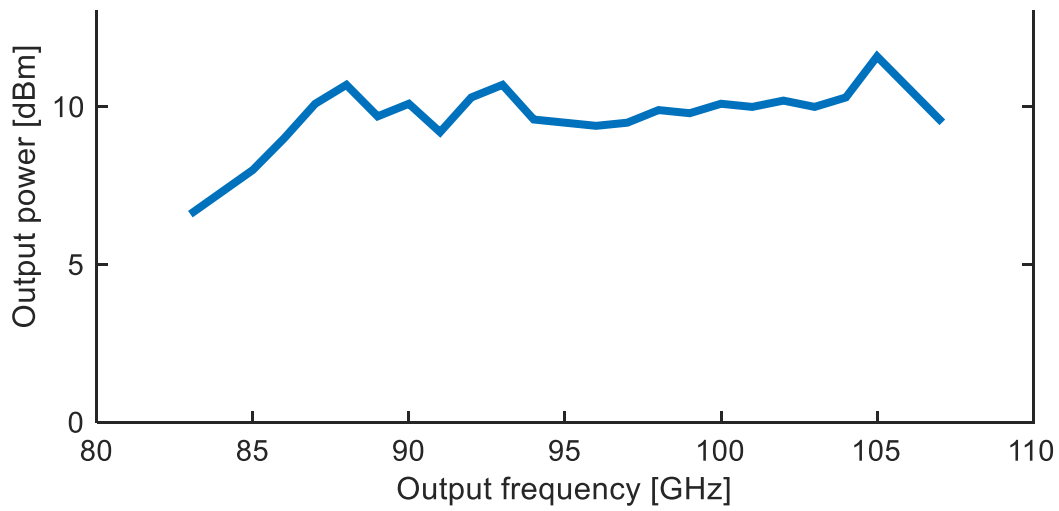
## RECOMMENDED OPERATING CONDITIONS

Bias should first be applied to the gates (VG...) followed by the drains (VD...). The gate voltages must be adjusted within the min/max range indicated in **Table 2** to obtain the specified drain currents. The drain currents are stated with all input (LO) signals off.

**Table 2. Electrical settings**

Pad No.	Pad name	Bias settings (V/mA)			I/O	Sequence
		Min	Typ	Max		
1	NC					
2	NC					
3	VD_X		3.3 / 2			2
4	VG_X	-1.1	-0.9	-0.7		1
5	VG_AMP	-0.8	-0.5	-0.3		1
6	VD_AMP		3.3/78			2
7	LO		+ 2dBm		I	2
8						
9						
10						
11						
12						
13						
14						
15						
16	RF IN	Waveguide WR-10				

## MEASURED PERFORMANCE



**Figure 2. Output power versus frequency**

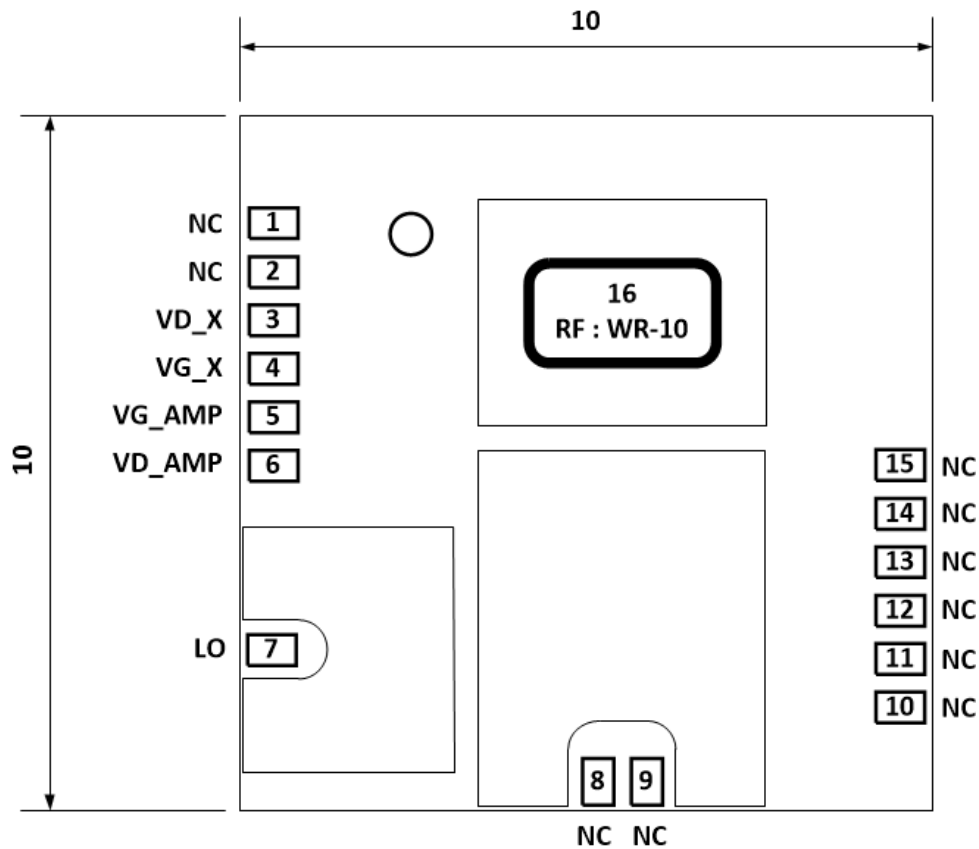


Figure 3. Pin configuration and outline drawing. Dimensions in [mm].

## ABSOLUTE MAXIMUM RATINGS

**Table 3. Absolute Maximum Ratings**

Parameter	Value
Gate-source voltage	-2 to +0.7 V
Drain-source voltage	4.5 V
Gate-drain breakdown voltage	8 V
RF in power max	+7 dBm
LO driver	+15 dBm
Operating temperature	-40 to + 85°C
Storage temperature	-65 to +150°C