



SUB HARMONIC MIXERS

[SPM-19-000X - 40-60GHz](#)

[SPM-15-000X - 50-75GHz](#)

[SPM-12-000X - 60-90GHz](#)

[SPM-10-000X - 75-110GHz](#)

[SPM-08 - 120GHz](#)

[SPM-06 - 110-170GHz](#)

[SPM-05 - 183GHz](#)

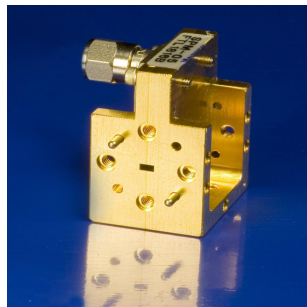
[SPM-04- 220GHz](#)

[SPM-03 - 280GHz](#)

## Datasheet

### Description

A high performance subharmonically pumped mixer in the WR-03 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

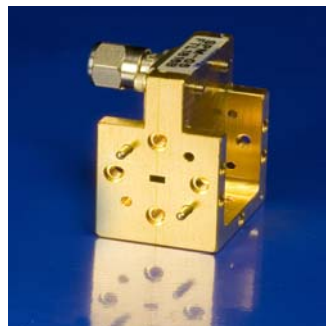
Specification	Unit	Min	Typ	Max
RF Frequency	GHz	260		300
LO Frequency	GHz	130		150
IF Frequency	GHz	0.1		4
Noise Figure DSB	dB		8	11
Tmix DSB	K		1540	3360
Conversion Loss	dB		8	11
LO Drive Level	mW		4	6
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-03 UG-387/U-M		
LO Waveguide	-	WR-06 UG-387/U-M		
LO Connector	-	SMA (F)		

### Notes:

Farran Technology reserves the right to change, without notice, the characteristic data and other specifications applied to this product. The product may be subject to Irish export restrictions

**Datasheet****Description**

A high performance subharmonically pumped mixer in the WR-04 band.

**Features**

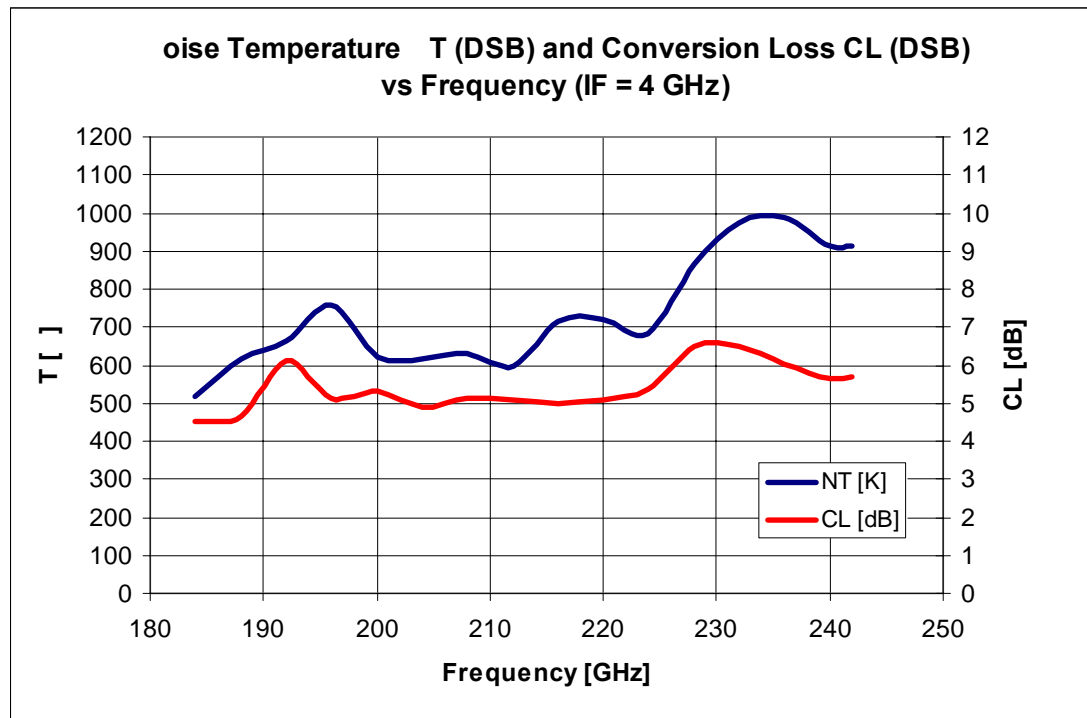
- High performance
- Sub-harmonically pumped
- Low noise figure
- Low LO power level
- Low conversion loss

**Applications**

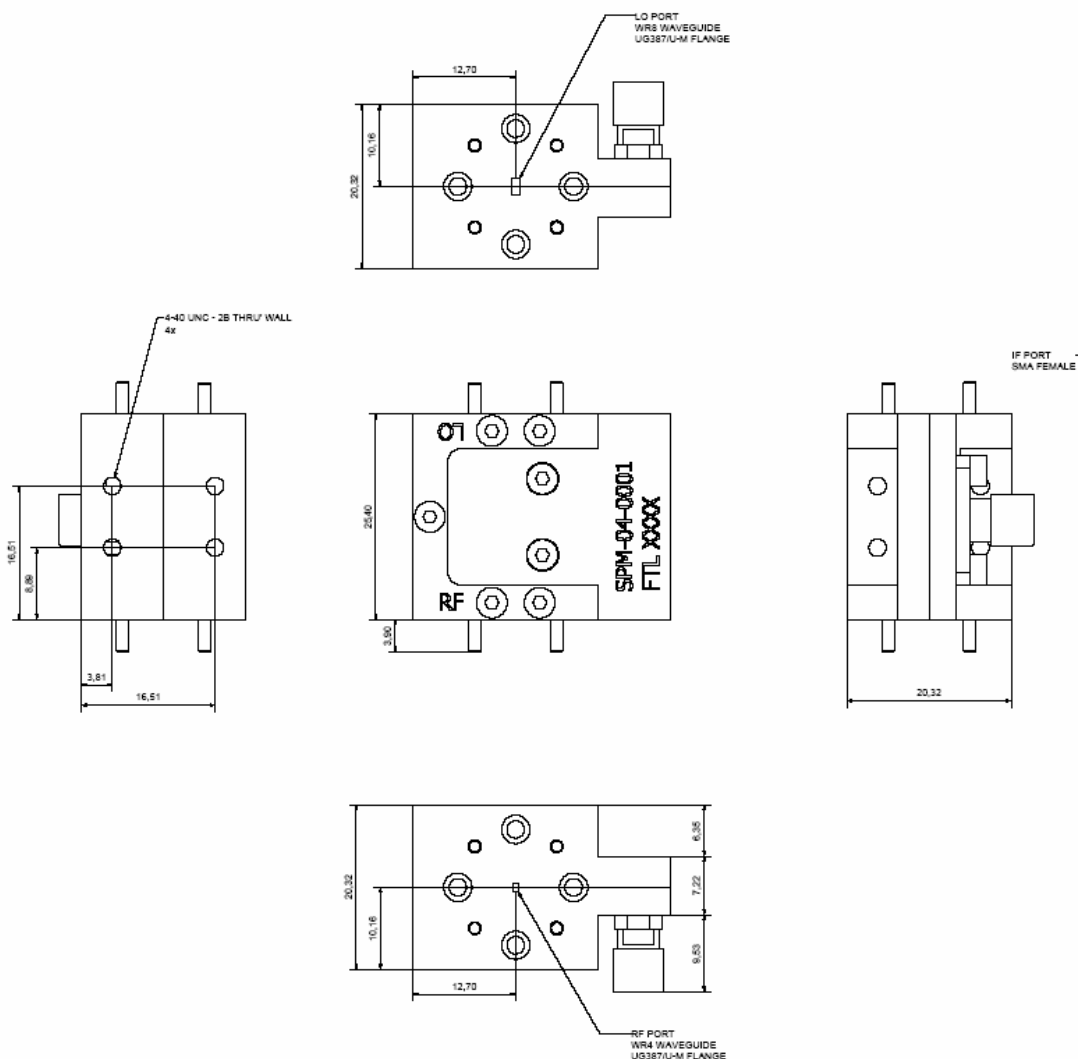
- Heterodyne receivers
- Instrumentation
- Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	180		250
LO Frequency	GHz	90		120
IF Frequency	GHz	0.2		4
Noise Figure DSB	dB		5	8.5
Tmix DSB	K		600	1550
Conversion Loss	dB		5	8.5
LO Drive Level	mW		4	6
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-04 UG-387/U-M		
LO Waveguide	-	WR-08 UG-387/U-M		
LO Connector	-	SMA (F)		

Datasheet



Datasheet

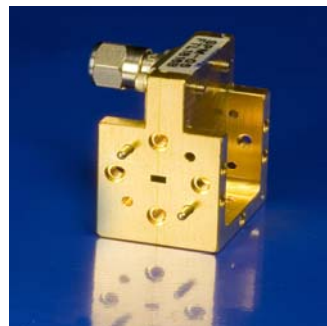


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**Datasheet****Description**

A high performance subharmonically pumped mixer in WR-05 band.

**Features**

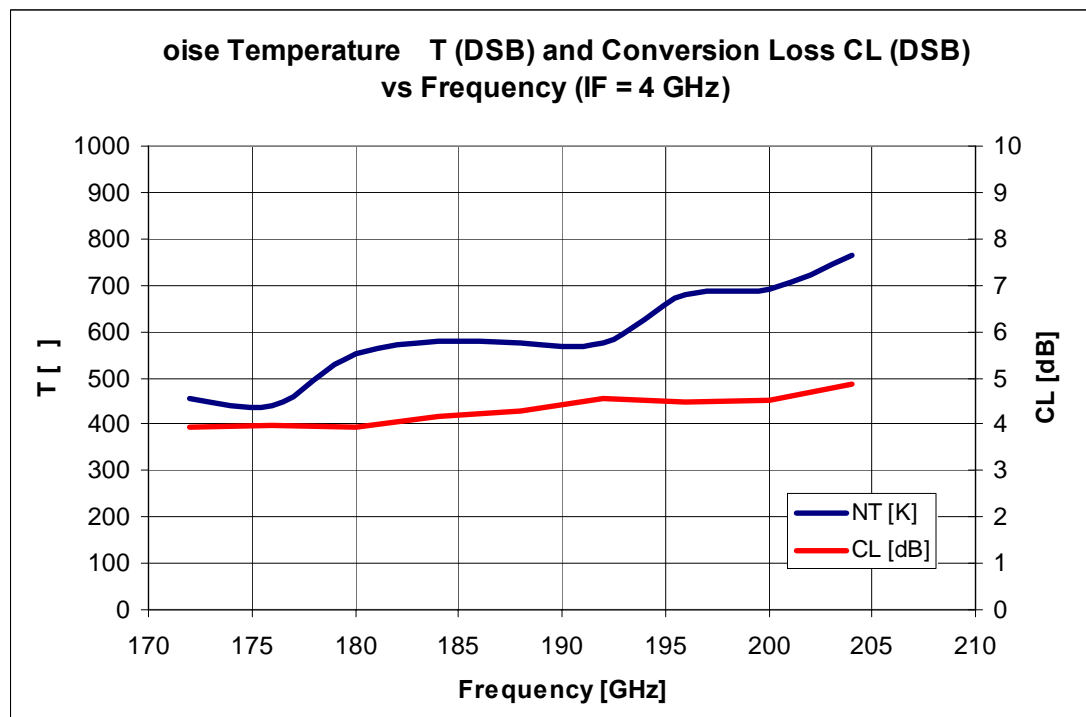
- High performance
- Sub-harmonically pumped
- Low noise figure
- Low LO power level
- Low conversion loss

**Applications**

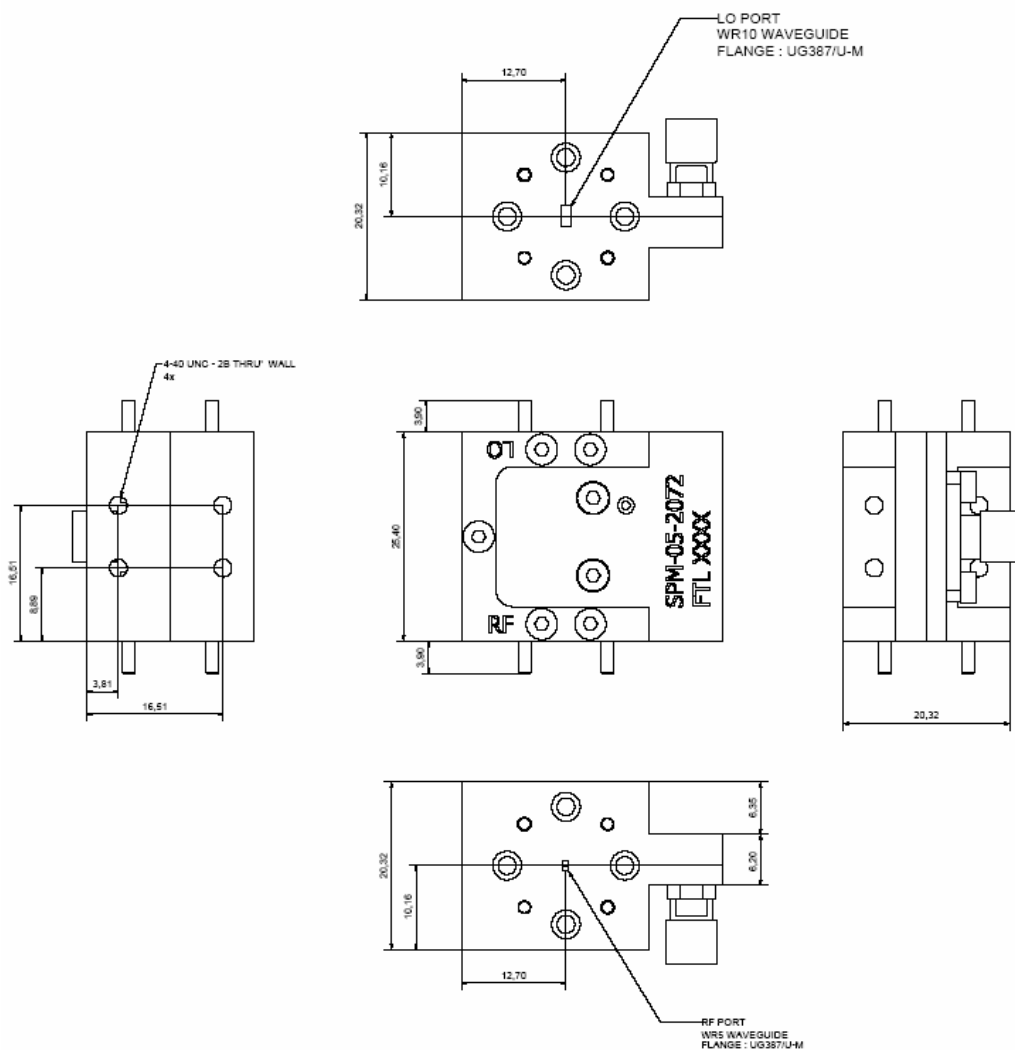
- Heterodyne receivers
- Instrumentation
- Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	172		204
LO Frequency	GHz	84		100
IF Frequency	GHz	0.2		4
Noise Figure DSB	dB		4.4	6.5
Tmix DSB	K		500	1000
Conversion Loss	dB		4.5	6.5
LO Drive Level	mW		4	6
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-05 UG-387/U-M		
LO Waveguide	-	WR-10 UG-387/U-M		
LO Connector	-	SMA (F)		

Datasheet



**Datasheet**



**Notes:**

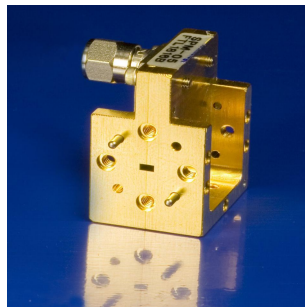
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## Datasheet

### Description

A high performance subharmonically pumped mixer in WR-06 band.



### Features

- " High performance
- " Full WR-06 band coverage
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

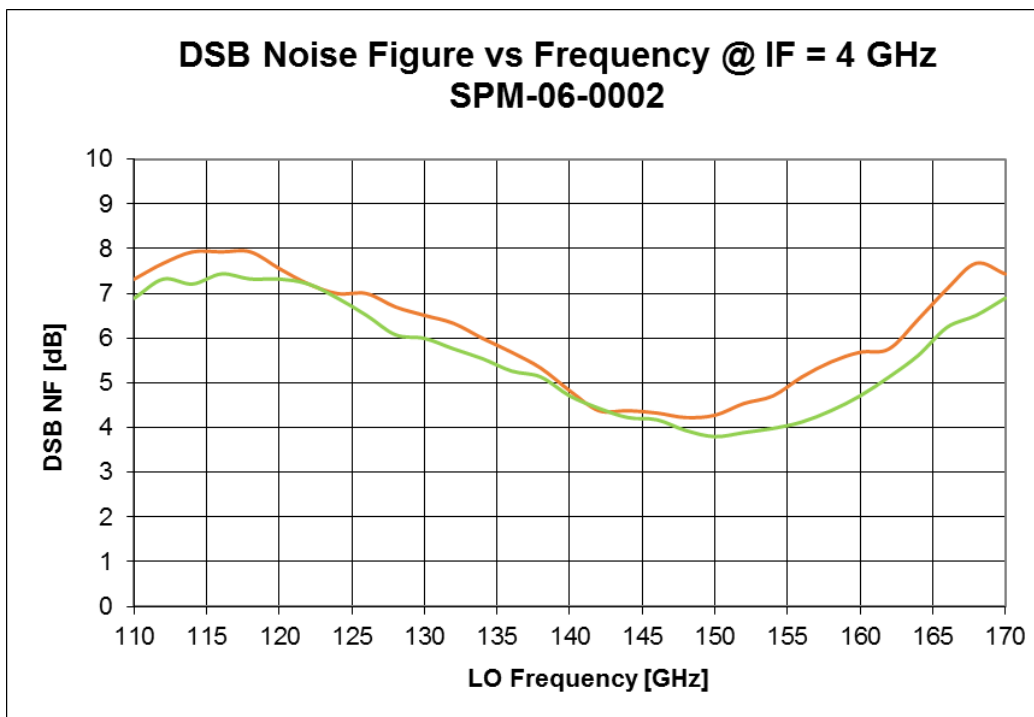
### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front ends

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	110		170
LO Frequency	GHz	55		85
IF Frequency	GHz	0.1	4	20
Noise Figure DSB	dB	4	6	10
Tmix DSB	K		865	2610
Conversion Loss	dB		6	10
LO Drive Level	mW	2	3.25	6
RF Waveguide	-	WR-06 UG-387/U-M		
LO Waveguide	-	WR-12 UG-387/U-M		
LO Connector	-	SMA (F)		

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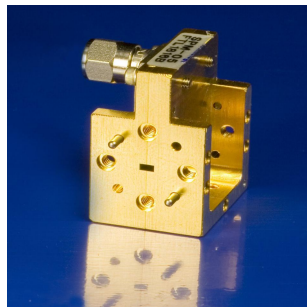
**Datasheet**

**Figure 1. Typical full band performance of SPM-06-0002 with LO power = 3 mW.**

## Datasheet

### Description

A high performance subharmonically pumped mixer in WR-08 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	110		130
LO Frequency	GHz	52.5		62.5
IF Frequency	GHz	0.2		4
Noise Figure DSB	dB		6	8
Tmix DSB	K		870	1500
Conversion Loss	dB		6	8
LO Drive Level	mW		4	7
IF Bandwidth	GHz	>10		
RF Waveguide	-	WR-08 UG-387/U-M		
LO Waveguide	-	WR-15 UG-387/U-M		
LO Connector	-	SMA (F)		

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## Datasheet

### Description

A high performance full band subharmonically pumped mixer in the WR-10 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

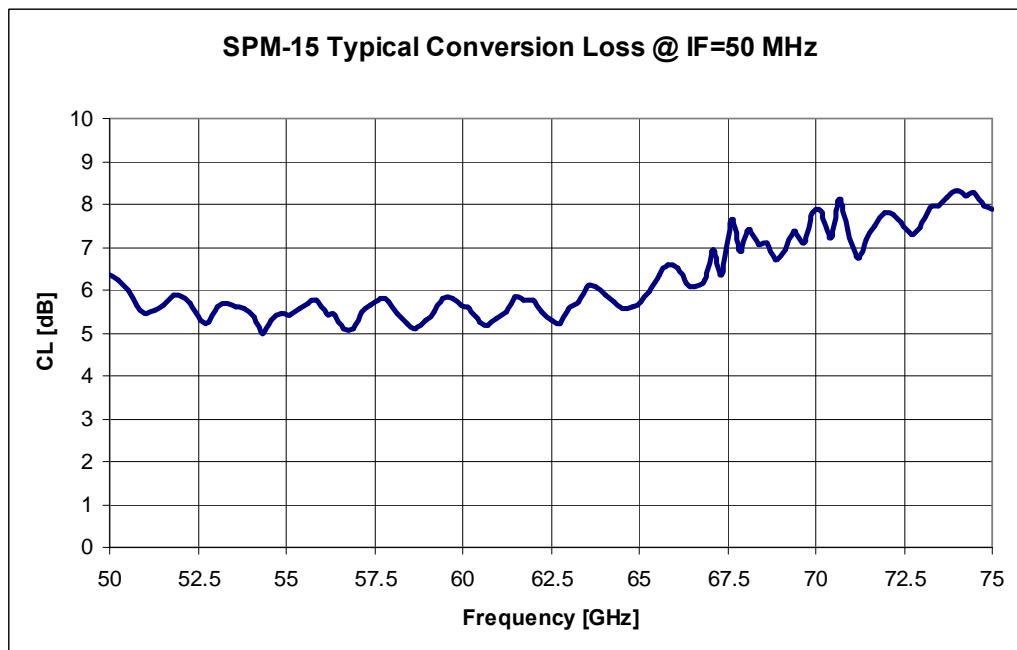
### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	75		110
LO Frequency	GHz	37.5		55
IF Frequency *	GHz	0.01		6
Conversion Loss	dB		7.5	14
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-10 UG-387/UM		
LO Waveguide	-	WR-19 UG-383/UM		
IF Connector	-	SMA (F)		

\* Wider IF bandwidth available at the expense of conversion loss.

Datasheet



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## Datasheet

### Description

A high performance full band subharmonically pumped mixer in the WR-12 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

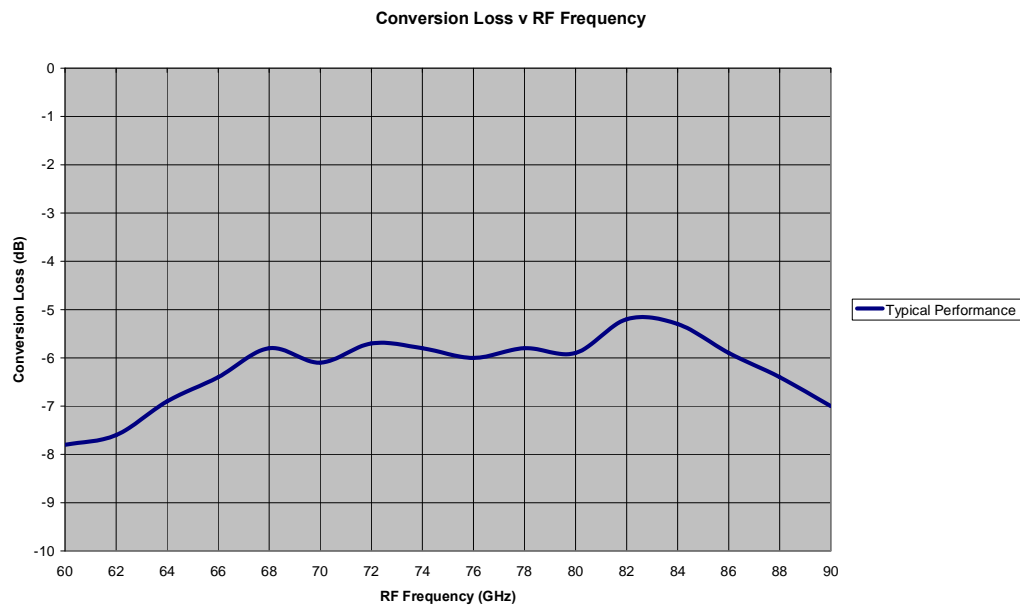
### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	60		90
LO Frequency	GHz	30		45
IF Frequency *	GHz	0.01		2
Conversion Loss	dB		7.5	10
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-12 UG-387/U		
LO Waveguide	-	WR-22 UG-383/U		
LO Connector	-	SMA (F)		

\* Wider IF bandwidth available at the expense of conversion loss.

Datasheet



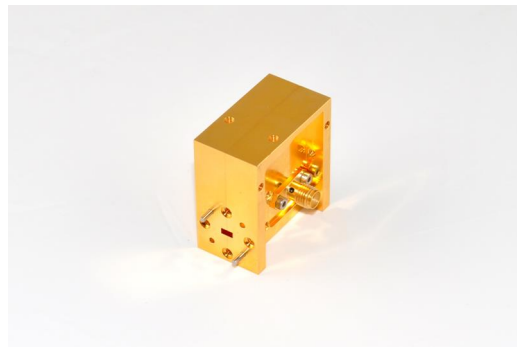
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## Datasheet

### Description

A high performance full band subharmonically pumped mixer in the WR-15 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

### Applications

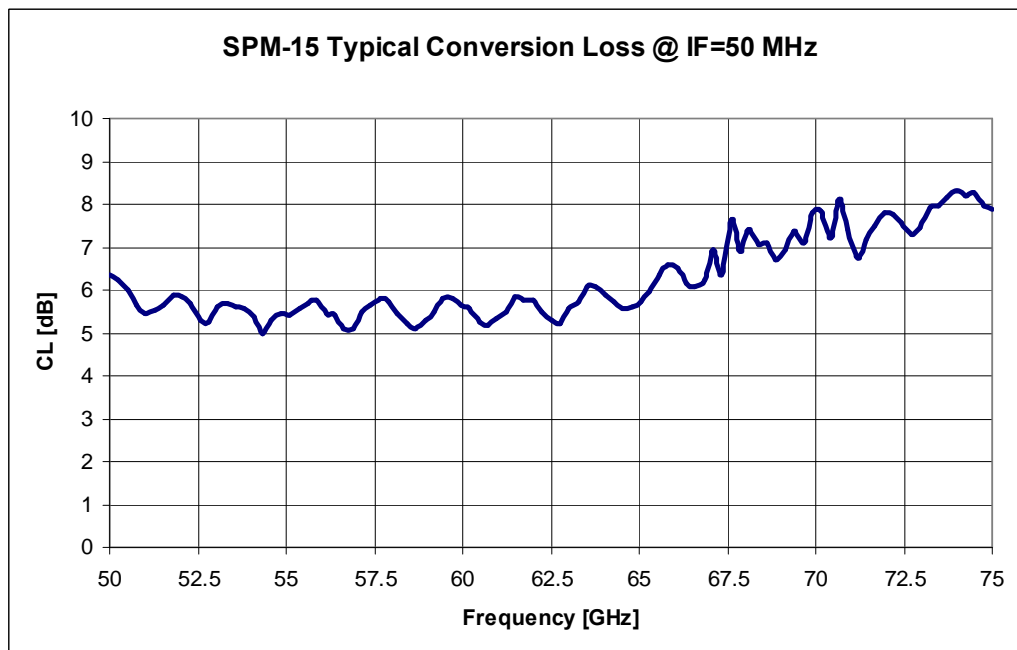
- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	50		75
LO Frequency	GHz	25		37.5
IF Frequency *	GHz	0.01		6
Conversion Loss	dB		6.5	13
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-15 UG-385/U		
LO Waveguide	-	WR-28 UG-599/U		
IF Connector	-	SMA (F)		

\* Wider IF bandwidth available at the expense of conversion loss.



Datasheet



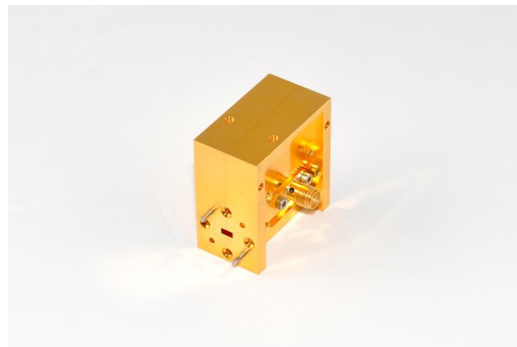
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## Datasheet

### Description

A high performance full band subharmonically pumped mixer in the WR-19 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	40		60
LO Frequency	GHz	20		30
IF Frequency *	GHz	0.01		6
Conversion Loss	dB		6	12
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-19 UG-383/UM		
LO Connector	-	K-type (F)		
IF Connector	-	SMA (F)		

\* Wider IF bandwidth available at the expense of conversion loss.

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## Datasheet

### Description

A high performance full band subharmonically pumped mixer in the WR-19 band.



### Features

- " High performance
- " Sub-harmonically pumped
- " Low noise figure
- " Low LO power level
- " Low conversion loss

### Applications

- " Heterodyne receivers
- " Instrumentation
- " Imaging front end

Specification	Unit	Min	Typ	Max
RF Frequency	GHz	40		60
LO Frequency	GHz	20		30
IF Frequency *	GHz	0.01		6
Conversion Loss	dB		6	12
LO Drive Level	dBm	7	10	13
RF Waveguide	-	WR-19 UG-383/UM		
LO Connector	-	K-type (F)		
IF Connector	-	SMA (F)		

\* Wider IF bandwidth available at the expense of conversion loss.

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