

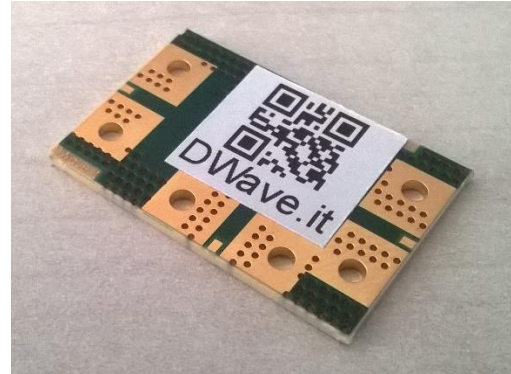
Ku band diplexer circuit DW0088-50



50Ω Ku Band

Main characteristics

- Tx2Rx Isolation > 50dB
- Low insertion loss
- Dimensions: 29.4mm x 19.2mm x 1.2mm
- Available module with SMA connectors
- Reduced weight <2g



Typical application

- Smart LNB
- Satellite communication system

Product Overview

The DWave DW0088-50 is a SMD module duplexer for Ku band, designed using stripline technology. The material and production process is excellent for RF and thermal performance. The DW0088-50 is 50Ω matched. The module was designed for Satellite communication application. The block scheme of the DW0088-50 is shown in the following figure.

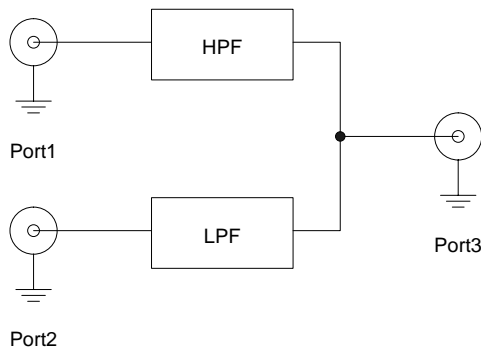


Figure 1. Diplexer block scheme.

Ports Description

Port #	Description
Port1	High band (TX) port. Pad 1.
Port2	Low Band (RX) port. Pad 2.
Port3	Antenna/Common. Pad 3.

Technical Specifications

PARAMETER	MIN	TYP	MAX	UNIT	REMARKS
Impedance (all ports)		50		Ω	
High Band (TX)					
Pass Band frequency	13.75		15.00	GHz	
Pass band Insertion Loss (P2-P3)	1.0	1.5	2.2	dB	
Pass Band Input Return Loss (P2)	12	15		dB	
Pass Band Output Return Loss (P3)	12	15		dB	In 13.75-15.00GHz range
Amplitude ripple			1.2	dB	

MORE INFORMATION AND DOCUMENTATION AT: www.dwave.it

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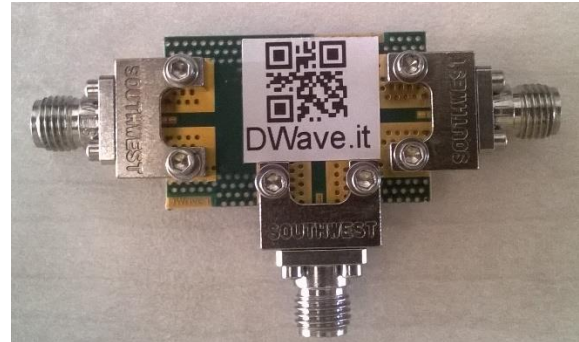
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Stop Band Insertion Loss	50			dB	In 10.7-12.75GHz range
Input power			36	dBm	
Low Band (RX)					
Pass Band frequency	10.7		12.75	GHz	
Pass band Insertion Loss (P2-P3)	0.6	1.0	1.7	dB	
Pass Band Input Return Loss (P2)	12	15		dB	
Pass Band Output Return Loss (P3)	12	15		dB	In 10.7-12.75GHz range
Amplitude ripple			1.0	dB	
Stop Band Insertion Loss	50			dB	In 13.75-15.00GHz range
Input power			36	dBm	
Cross Over Isolation (P1-P2)					
10.7 to 12.75GHz	50			dB	
13.75 to 15.0GHz	50			dB	
ENVIRONMENT					
Operating temperature	-55		+125	°C	
Storage temperature	-55		+125	°C	

All measurements are performed using 292-04A-5 Southwest Microwave SMA end launch connector. The following figure shows DW0088-50 with 292-04A-5 End Launches.

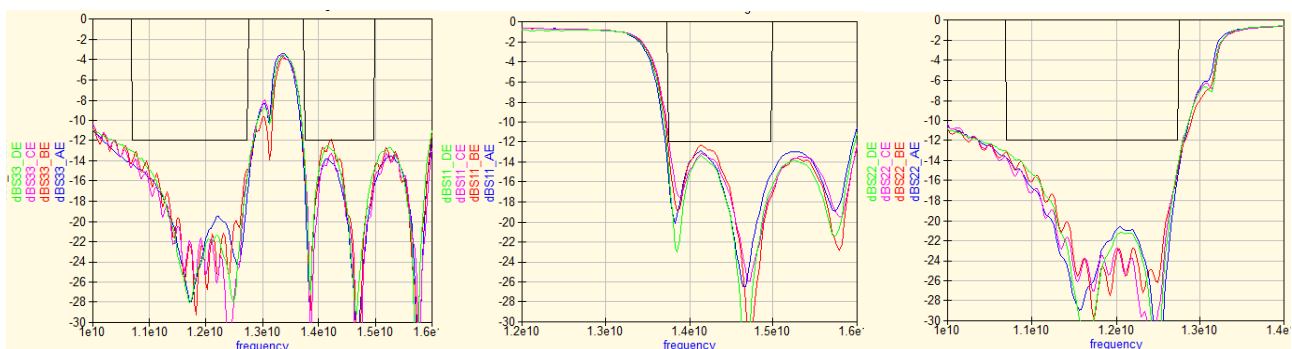
Such module is available for evaluation.



According to the End Launch [Application manual](#) the loss is roughly 0.3dB/launch (0.6dB for each path).

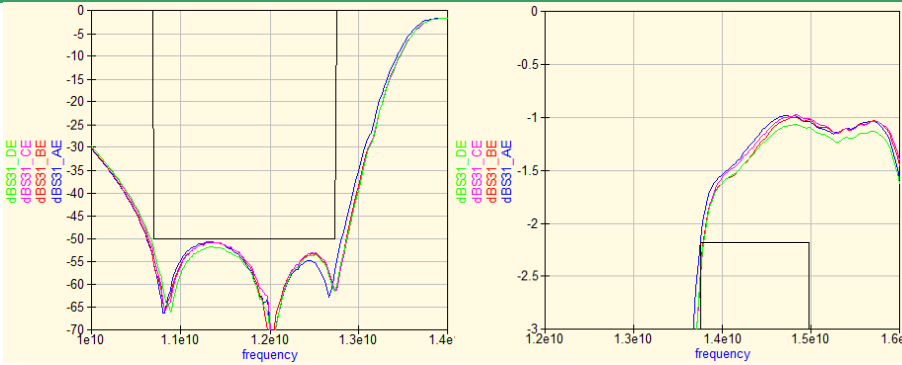
Performance Drawing

In the following figures, the main performance characteristics are shown. Four different measures are shown, they are related to four samples each in a different production batch.

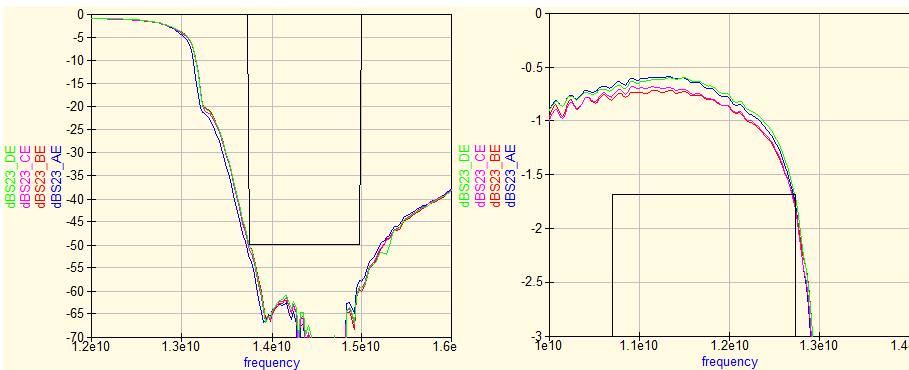


Figures 2. Diplexer S33, S11 and S22 magnitude showing the reflection respectively of common port (P3), high band port (P1) and low band port (P2).

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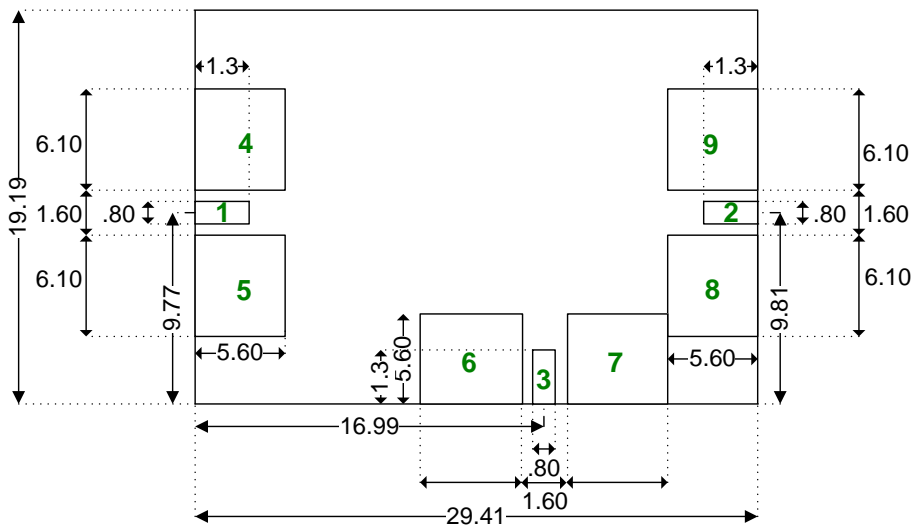
Figures 3. Diplexer S31, stop-band and pass-band.



Figures 4. Diplexer S23, stop-band and pass-band.

Outline Drawing

The top outline drawing is shown in the following figures. All measurements are expressed in millimeters.



Figures 5. Diplexer Top Side outline drawing.

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PAD Description	
PAD #	Description
1	High band (TX) port.
2	Low Band (RX) port.
3	Antenna/Common.
4, 5, 6, 7, 8 and 9	GND

Packaging information

The following part numbers are available

DW0088-50-NS	Diplexer circuit.
DW0088-50-SM	Diplexer circuit with three SMA 292-04A-5 (from Southwest Microwave) End Launches.
DW0088-50-JM	Diplexer circuit with three SMA 142-0771-831 (from Johnson Cinch) End Launches.