Transko

TD1880DM5

RoHS Compliant

- **FBAR Duplexer For US-PCS**
- **Revision 2: April 2011**

Electrical Characteristics

MAXIMUM RATING				
PARAMETERS DESCRIPTION	**UNIT**	**MINIMUM**	**TYPICAL**	**MAXIMUM**
Operating Temperature Range	°C	-30	-	+85
Storage Temperature Range	°C	-40	-	+85
Maximum DC Voltage	V	-	0	-
Maximum Input Power	W		1.0	
Source Impedance (single ended)	Ω	-	50	-
Load Impedance (single ended)	Ω	-	50	-
Package type & size			M5	
Length x Width	mm^2	-	3.0 x 3.0	-
Height	mm	-	-	1.2

ELECTRICAL SPECIFICATION					
PARAMETERS	**CONDITION [MHZ]**	**UNIT**	**MINIMUM**	**TYPICAL**	**MAXIMUM**
Tx → Ant		**Specifications (+25°C)**			
Insertion Loss	1850.5 ~ 1909.5	dB	-	1.6	2.3
Passband Ripple	1850.5 ~ 1909.5	dB_{p-p}	-	1.3	-
Return Loss	1850.5 ~ 1909.5	dB	9.5	16	-
Attenuation	1930.5 ~ 1989.5	dB	40	46	-
Ant → Rx		**Specifications (+25°C)**			
Insertion Loss	1930.5 ~ 1989.5	dB	-	2.0	3.0
Passband Ripple	1930.5 ~ 1989.5	dB_{p-p}	-	1.7	-
Return Loss	1930.5 ~ 1989.5	dB	9.5	16	-
Attenuation	1850.5 ~ 1909.5	dB	50	53	-
Tx → Rx		**Specifications (+25°C)**			
Isolation	1850.5 ~ 1909.5	dB	50	56	-
	1930.5 ~ 1989.5	dB	44	49	-

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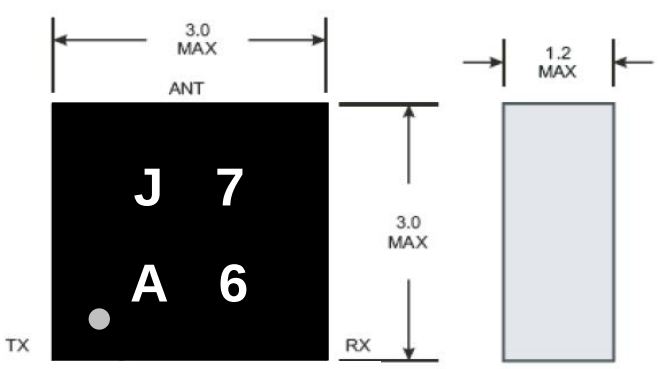
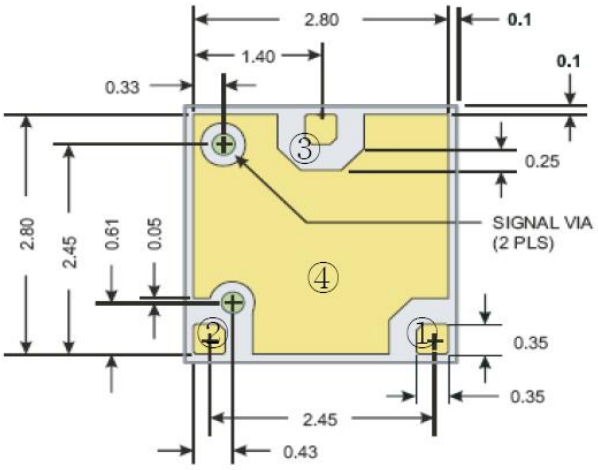
ELECTRICAL SPECIFICATION					
PARAMETERS	**CONDITION [MHZ]**	**UNIT**	**MINIMUM**	**TYPICAL**	**MAXIMUM**
Tx → Ant		**Specifications (-30 ~ +85°C)**			
Insertion Loss	1850.5 ~ 1909.5	dB	-	1.6	2.7
Passband Ripple	1850.5 ~ 1909.5	dB_{p-p}	-	1.3	-
Return Loss	1850.5 ~ 1909.5	dB	9.5	17	-
Attenuation	1930.5 ~ 1989.5	dB	40	46	-
Ant → Rx		**Specifications (-30 ~ +85°C)**			
Insertion Loss	1930.5 ~ 1989.5	dB	-	2.0	3.1
Passband Ripple	1930.5 ~ 1989.5	dB_{p-p}	-	1.7	-
Return Loss	1930.5 ~ 1989.5	dB	9.5	16	-
Attenuation	1850.5 ~ 1909.5	dB	50	53	-
Tx → Rx		**Specifications (-30 ~ +85°C)**			
Isolation	1850.5 ~ 1909.5	dB	50	56	-
	1930.5 ~ 1989.5	dB	44	49	-

Package Moisture Sensitivity

Feature	Test Method	Performance
Moisture Sensitivity Level (MSL) at 260℃	J-STD-020C	Level 3

Package Dimensions



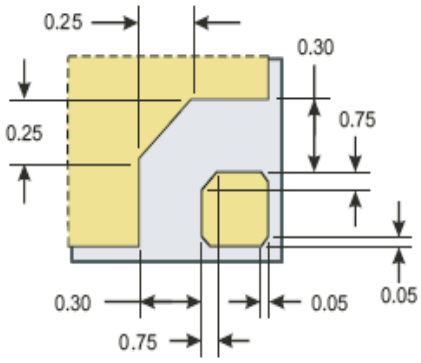


1. Tolerance: XX±0.1, X, XX±0.05
2. Package Height: 1.2mm Max
3. Contact areas are Gold plated

PIN NO.	FUNCTION
①	Tx (1880MHz)
②	Rx (1960MHz)
③	Antenna
④	GND

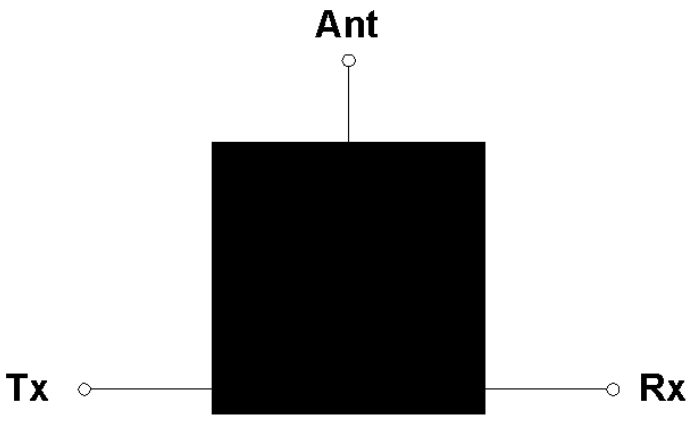
①, ②, ③ : Exposed ports

④ : Exposed ground plane



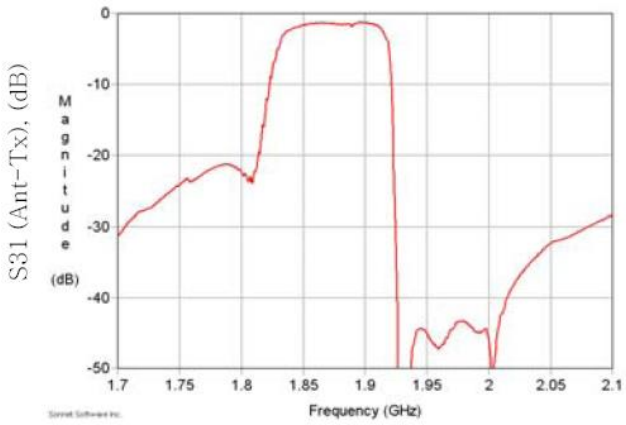
DETAIL OF I/O PAD AREA

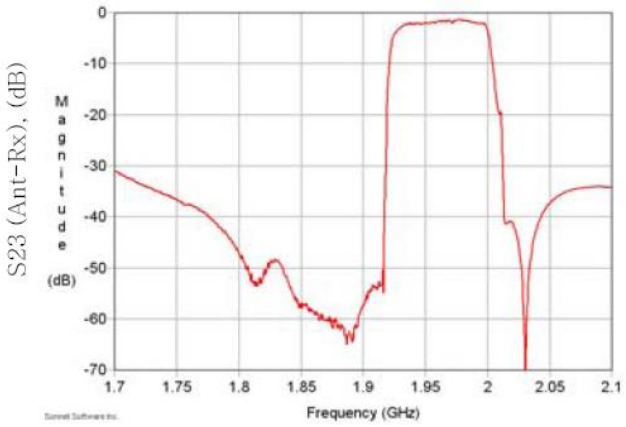
Testing Environment



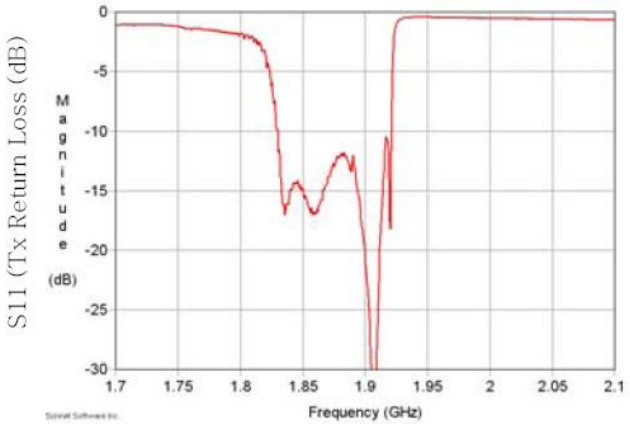
Frequency Characteristics

Tx to Ant, Ant to Rx

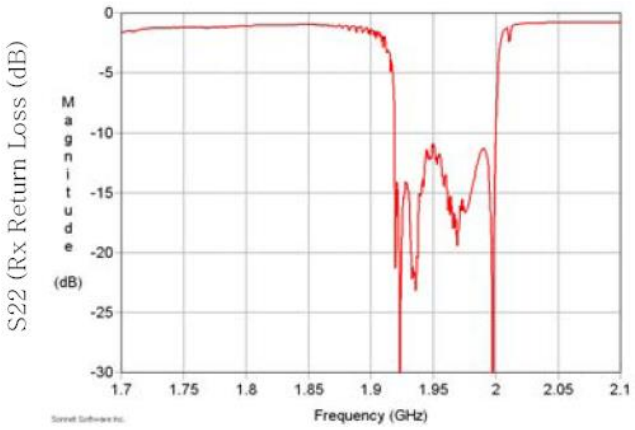




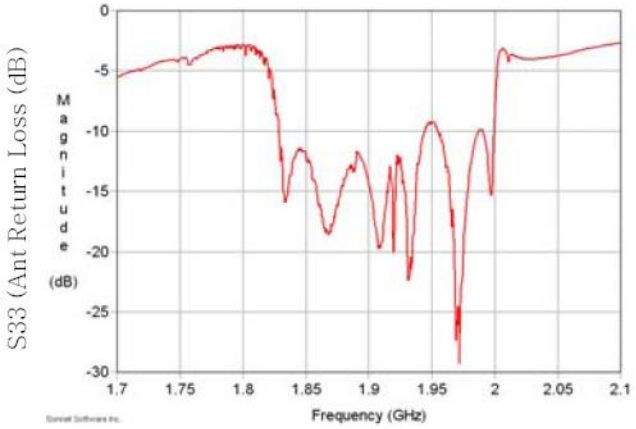
Return Loss TX



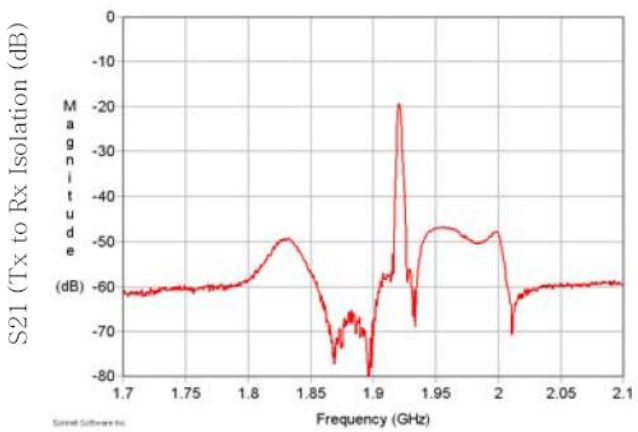
Return Loss RX



Return Loss Ant



Tx to Rx Isolation



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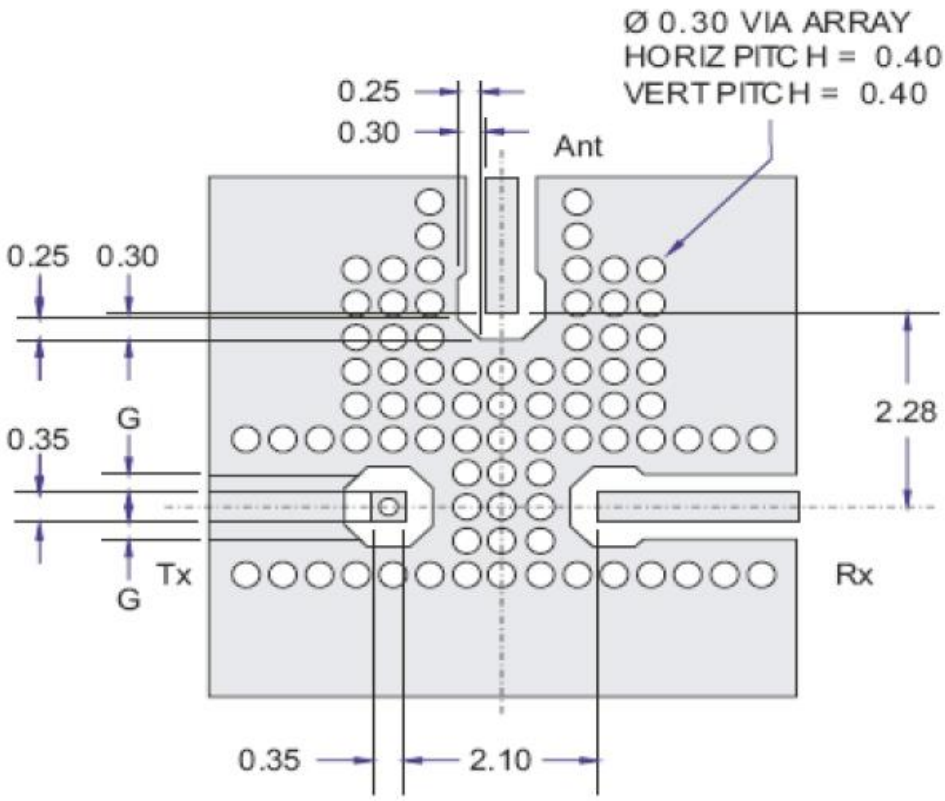
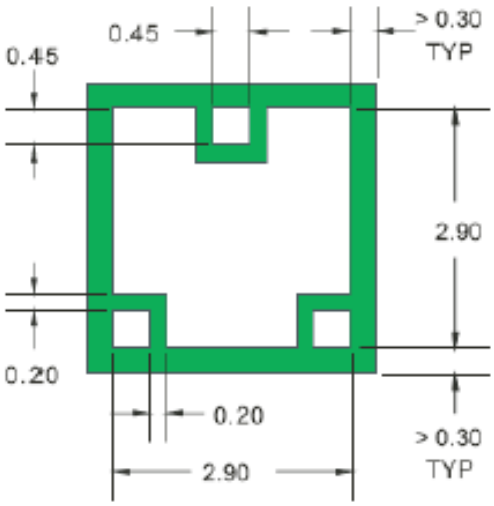
Recommended PCB Layout Print

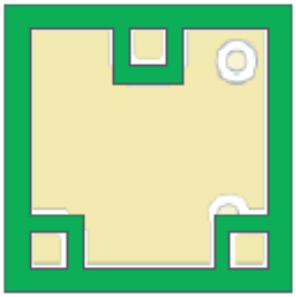


※ **Notes:**

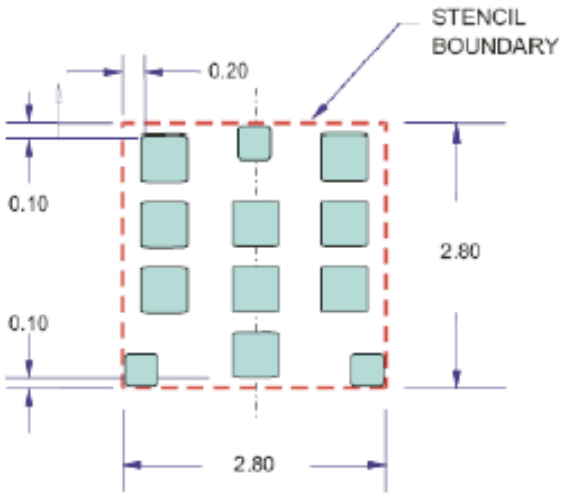
- ✓ Dimensions in millimeters (mm)
- ✓ All via are Φ 0.30
- ✓ Angles 45°
- ✓ RF ports are CPW
- ✓ Transmission line Gap(G) adjusted for Zo=50 Ω
- ✓ Pattern centered on duplexer

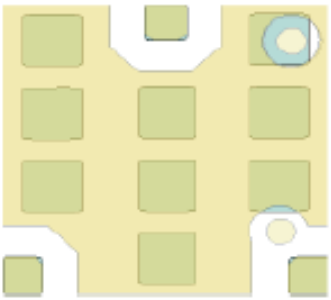
Recommended Solder mask





Recommended Solder Stencil





Duplexer superposed on solder stencil

※ **Notes:**

- ✓ Dimensions in millimeters (mm)
- ✓ Solder stripes (9pls) are 0.50 width, pitch
- ✓ Solder pads for I/O are 0.35x0.35
- ✓ Stencil pattern is centered on duplexer

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