



**TEST REPORT**  
**ON**  
**8 TO 11 GHz 10dB DIRECTIONAL COUPLER**

**PMI MODEL No:**  
**RFOC-811-QRC-DC-10**  
Series Number: PROTOTYPE

DESIGNED  
BY  
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**ISO9001 : 2000 CERTIFIED**



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## 8 To 11 GHz 10dB DIRECTIONAL COUPLER

### KEY FEATURES:

- **8 TO 11 GHz Frequency Range**
- **True Insertion Loss: 1.6 dB max.**
- **Coupling: 10.0 ±1.25 dB**
- **Directivity: 10 dB min.**
- **I/O Connectors: Field Replaceable SMA**
- **Size: 1.00”L x 0.60”W x 0.38”H**



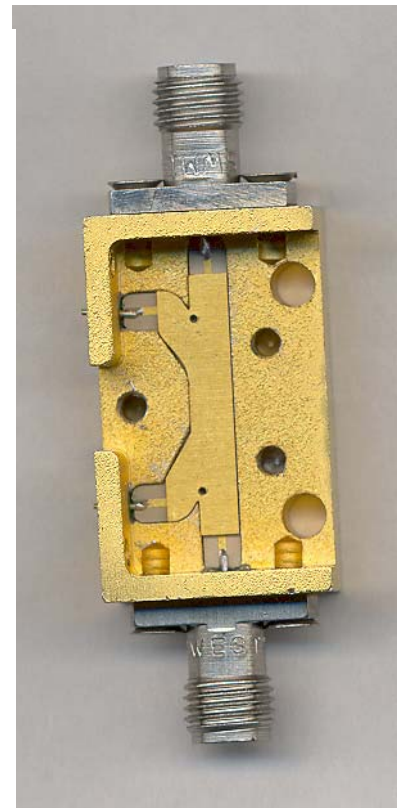
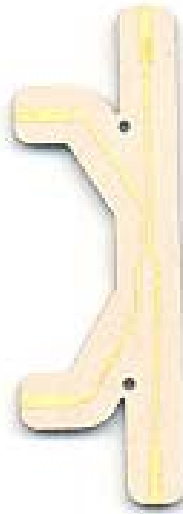
### SPECIFICATIONS:

FREQUENCY RANGE	8 GHz TO 11 GHz
■ TRUE INSERTION LOSS	1.6 dB max.
■ VSWR INPUT	1.5:1 max
■ VSWR OUTPUT	1.5:1 max
■ COUPLING	10±1.25 dB
■ DIRECTIVITY	10 dB MIN
■ I/O CONNECTOR	FIELD REPLACEABLE SMA
■ AVERAGE POWER:	50 WATTS
■ SIZE	1.0”L X 0.60”W X 0.38”H



**ENVIRONMENTAL RATINGS:**

Temperature:	-55 °C to +85 °C Operating
	-65 °C to +125 °C Non-Operating
Humidity:	MIL-STD-202F, Method 103B Cond. B
Shock:	MIL-STD-202F, Method 213B Cond. B
Vibration:	MIL-STD-202F, Method 204D Cond. B
Altitude:	MIL-STD-202F, Method 105C Cond. B
Temperature Cycle:	MIL-STD-202F, Method 107D Cond. A





**PRODUCT FEATURE**

ZONE	REV.	REVISIONS	DATE	APPROVED
		- ORIGINAL RELEASE JOB# P503012E	7/17/06	

**DESCRIPTION**

PMI MODEL RFOC-811-QRC-DC-10 IS A HIGH PERFORMANCE 10DB DIRECTIONAL COUPLER WITH FIELD REPLACEABLE SMA CONNECTORS. BY USING THE TECHNOLOGY OF MICROSTRIP LINE-TO-STRIP LINE TRANSITIONS, ALL THE FEEDTHRU OF INPUT AND OUTPUT PORTS CAN BE SOLDERED DIRECTLY TO MECHANICAL HOUSING TO HAVE BETTER MECHANICAL SUPPORT. THE DEVICE IS VERY SUITABLE FOR THE RF/MICROWAVE SUBSYSTEM/MODULE INTEGRATION.

**SPECIFICATIONS**

- FREQUENCY RANGE: ..... 8 TO 11 GHz
- INSERTION LOSS: ..... 0.6 dB MAX.  
1.6 dB MAX. (TRUE)
- COUPLING ..... 10 ± 1.25dB
- DIRECTIVITY: ..... 10dB MIN.
- VSWR: ..... 1.5 : 1 MAX.
- POWER : ..... 50 WATTS MAX. (AVERAGE)
- I/O CONNECTORS : ..... FIELD REPLACEABLE SMA

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: ..... -40°C TO +85°C (OPERATING)  
..... -55°C TO +95°C (STORAGE)
- HUMIDITY: ..... MIL-STD-202, METHOD 103 COND. B
- SHOCK: ..... MIL-STD-810, METHOD 516 COND. B
- VIBRATION: ..... MIL-STD-810, METHOD 514 PROC. I
- ALTITUDE: ..... MIL-STD-202, METHOD 105 COND. C
- SALT FOG: ..... ASTM G85.A4
- EXPLOSIVE ATMOSPHERE: ..... MIL-STD-810, METHOD 511.1

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APPROVALS	DATE	TITLE	PRODUCT FEATURE
DRAWN	3/9	7/17/06	RFOC-811-QRC-DC-10
CHECKED			8 TO 11 GHz 10DB DIRECTIONAL COUPLER
ISSUED			SIZE FROM NO. A DWG NO. 100-7312 SCALE N.S.

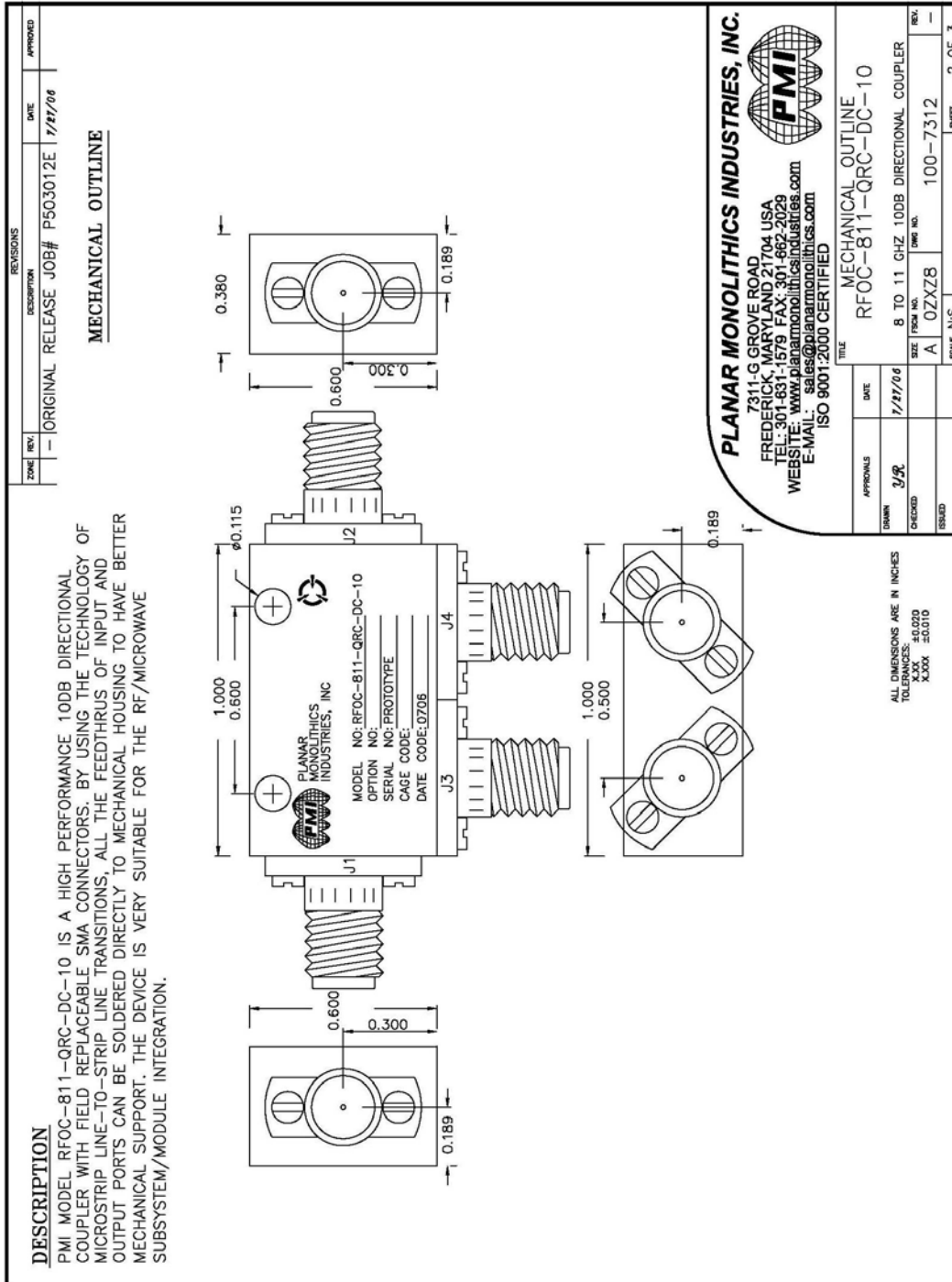
SHEET 1 OF 3

ALL DIMENSIONS ARE IN INCHES  
 TOLERANCES:  
 .005  
 .010  
 .015  
 .020

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
 NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION



**OUTLINE DRAWING**



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<b>APPROVALS</b>		<b>DATE</b>
DRAWN: <i>JR</i>		7/27/06
CHECKED:		
ISSUED:		

**TITLE**  
 MECHANICAL OUTLINE  
 RFOC-811-QRC-DC-10

SIZE FROM NO.	REV.
A	100-7312
SCALE	N/S
SHEET	2 OF 3



**FUNCTIONAL SCHEMATIC**

DATE	REV	DESCRIPTION	DATE	APPROVED
	-	ORIGINAL RELEASE JOB# P503012E	7/27/06	

**DESCRIPTION**

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**FUNCTIONAL BLOCK DIAGRAM**

\* MS TRANSITION: MICROSTRIP TO STRIP LINE TRANSITION

CONFIDENTIAL AND PROPRIETARY

**PLANAR MONOLITHICS INDUSTRIES, INC.**

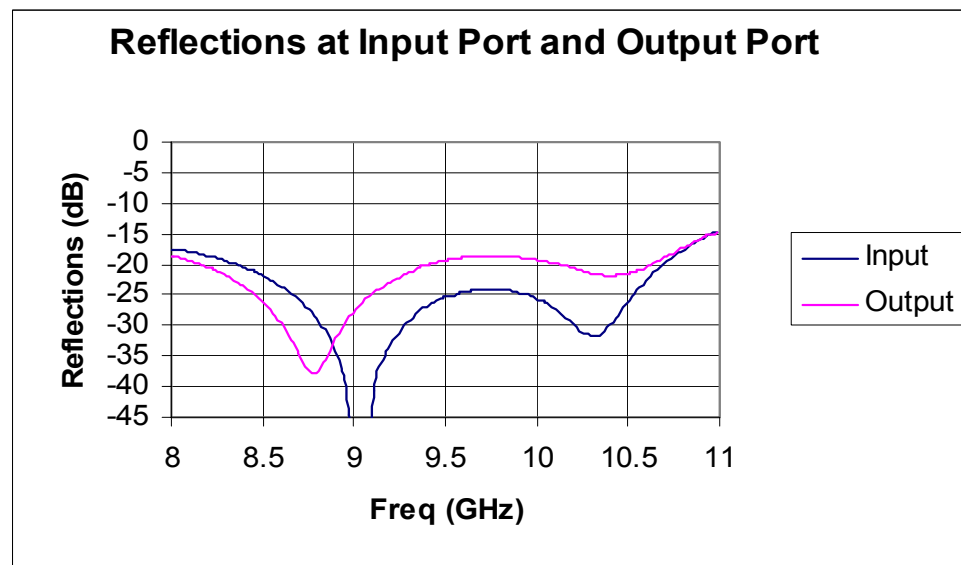
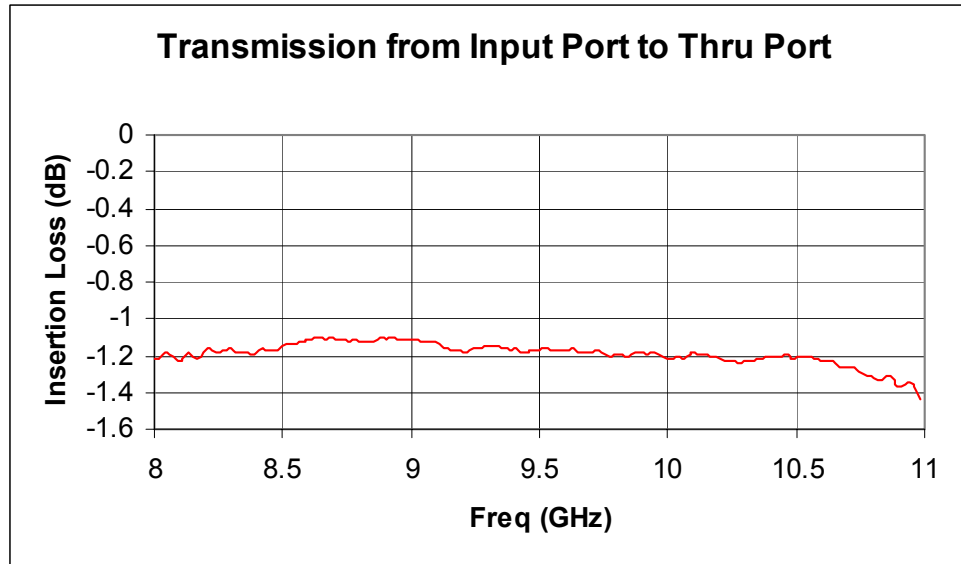
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APPROVALS	DATE	TITLE	SCALE	SHEET
DRAWN	7/27/06	FUNCTIONAL BLOCK DIAGRAM RFOC-811-QRC-DC-10		3 OF 3
CHECKED		SIZE FROM NO.	DWG NO.	
ESTUD		A	100-7312	



## Return Losses and Insertion Losses

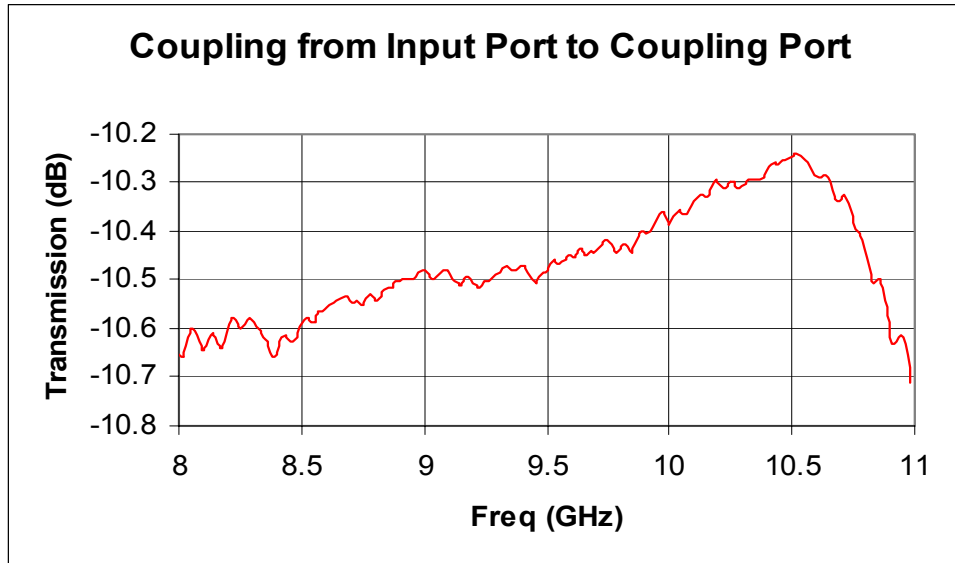


**Ports 1 and 2 with Port 3 and Port 4 terminated by 50 ohm loads**



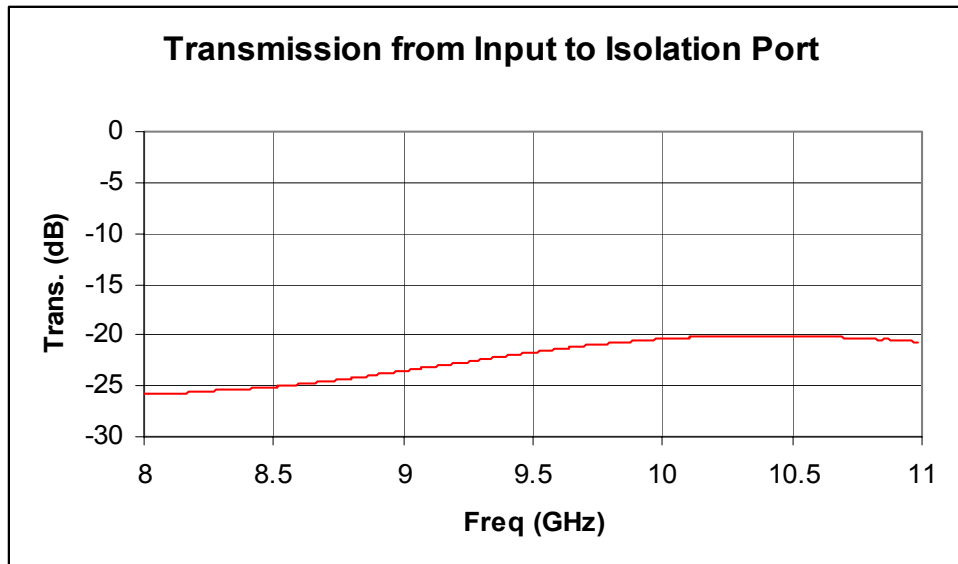


## COUPLING



Ports 1 and 3 with Port 2 and 4 terminated by 50 ohm load

## ISOLATION



Ports 1 and 4 with Port 2 and 3 terminated by 50 ohm load