

90MHz BAND APPLICATION

The characteristics of 90MHz band have evaluated as follows. The evaluation circuit structure and measured data are reviewed.

2-1 MEASURED DATA1 (DC)

General conditions: $V_{DD}=5.0V$, $T_a=+25^{\circ}C$, $Z_s=Z_l=50\Omega$

PARAMETERS	SYMBOL	CONDITIONS	DATA	UNITS
Supply Voltage	V_{DD}		5.0	V
Operating Current	I_{DD}	RF OFF	6.08	mA

2-2 MEASURED DATA2 (RF)

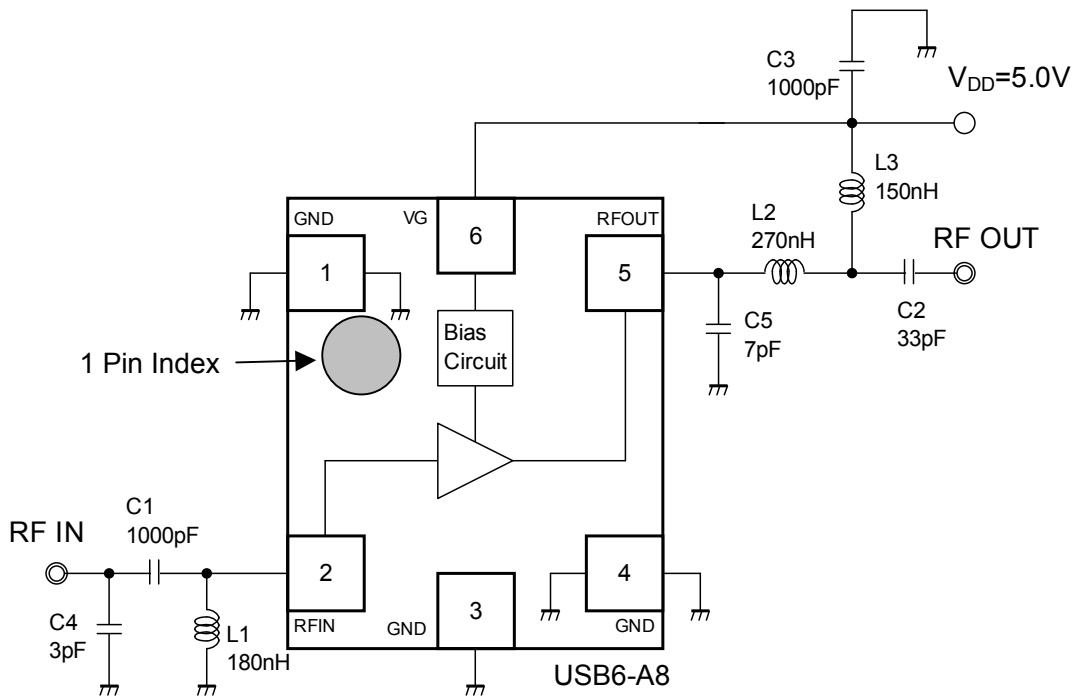
General conditions: $V_{DD}=5.0V$, $f_{RF}=76\sim 108MHz$, $T_a=+25^{\circ}C$, $Z_s=Z_l=50\Omega$

PARAMETERS	SYMBOL	CONDITIONS	DATA	UNITS
Frequency	f_{RF}		76 ~ 108	MHz
Small Signal Gain	Gain		9.56 ~ 10.16	dB
Noise Figure	NF	Exclude PCB, Connector Losses *1	1.17 ~ 1.73	dB
Input Power 1dB Compression	P-1dB(IN)		+0.7 ~ +0.8	dBm
Input 3rd Order Intercept Point	IIP3	$f_1=f_{RF}$, $f_2=f_{RF}+100kHz$, Pin=-18dBm	+15.2 ~ +15.8	dBm
RF IN VSWR	VSWR _i		3.02 ~ 3.34	-
RF OUT VSWR	VSWR _o		2.05 ~ 3.28	-

*1 Input PCB, connector losses : 0.011dB(at 90MHz)

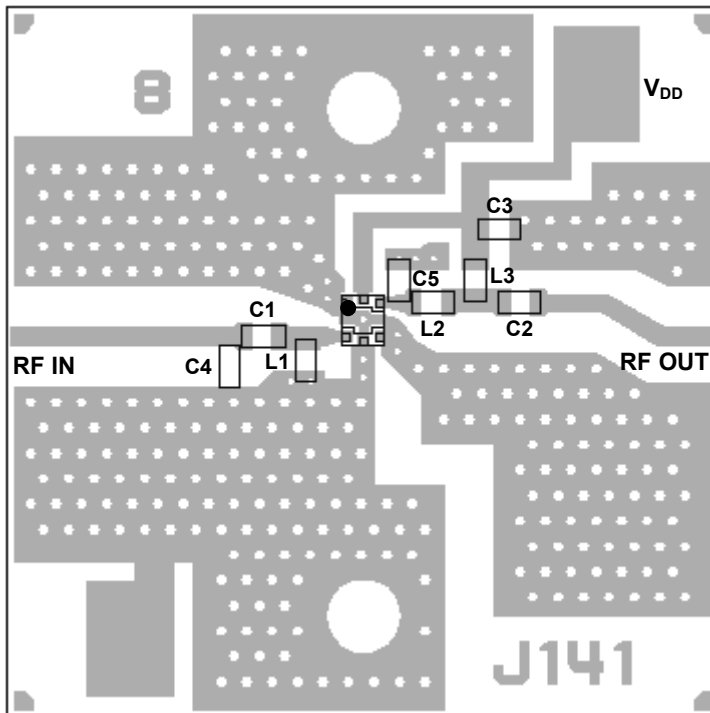
2-3 APPLICATION CIRCUIT

(Top View)



2-4 PCB DESIGN

(Top View)



PARTS LIST

Parts ID	Comment
L1~L3	TAIYO-YUDEN (HK1005 Series)
C1~C5	MURATA (GRM15 Series)

PCB (FR-4) :

t=0.2mm

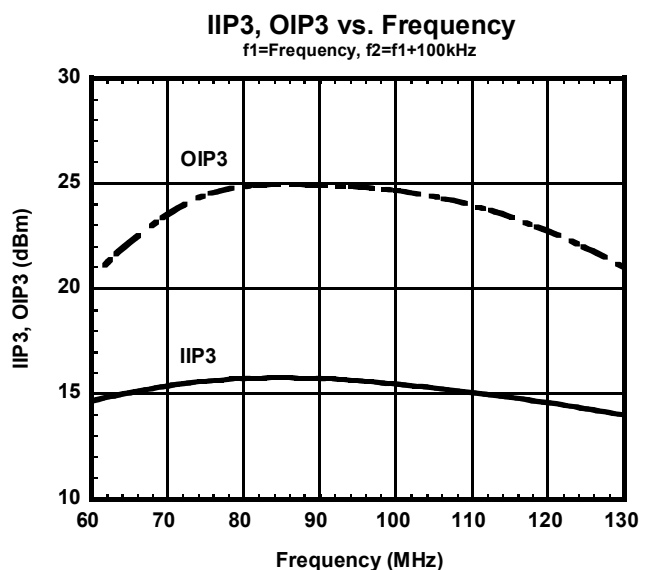
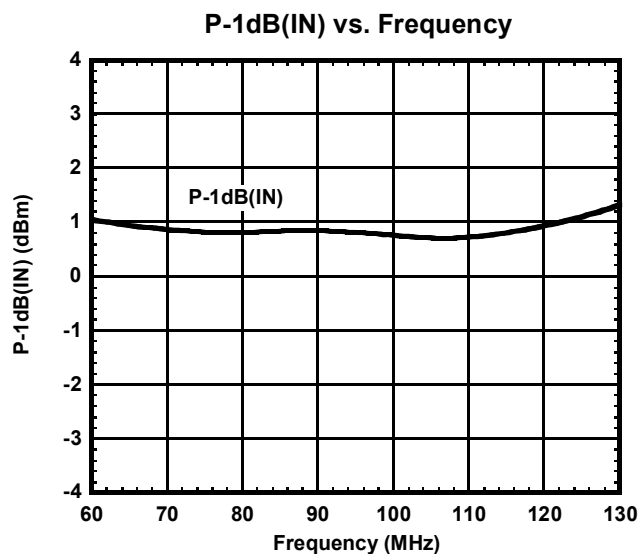
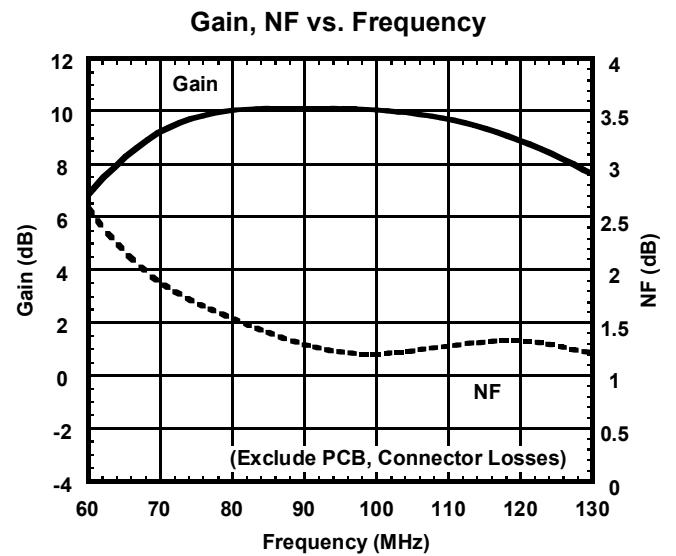
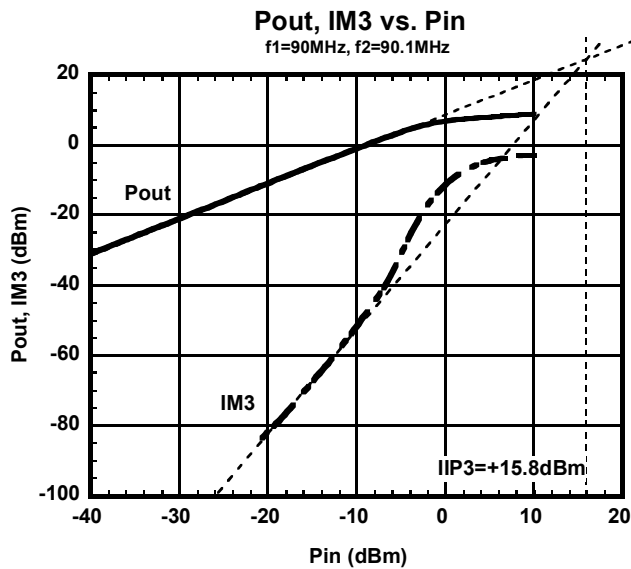
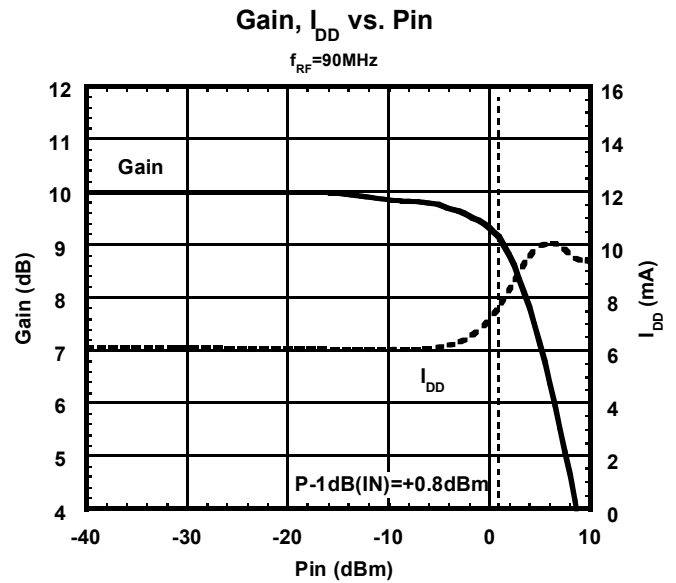
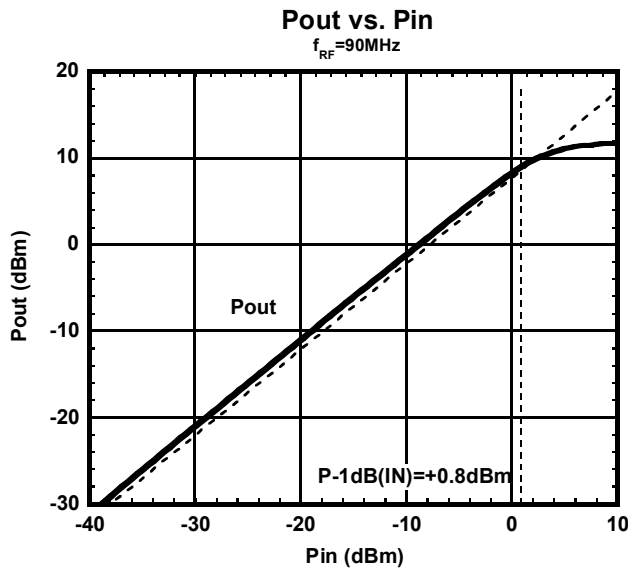
MICROSTRIP LINE WIDTH

=0.4mm ($Z_0=50\Omega$)

PCB SIZE=16.8mm × 16.8mm

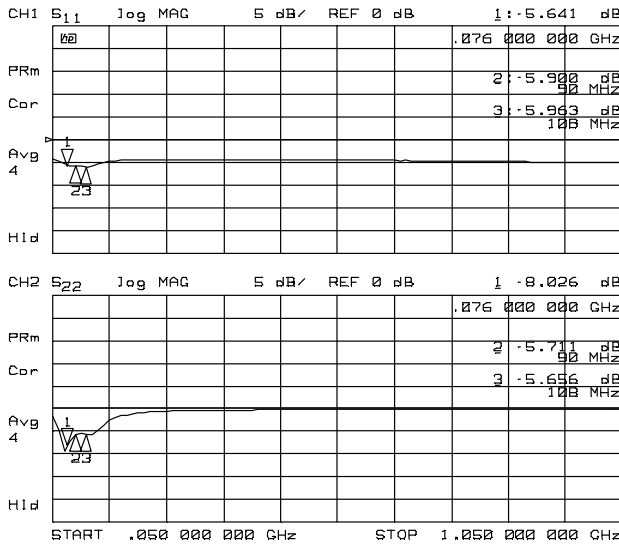
2-5-1 CHARACTERISTICS

General conditions: $V_{DD}=5.0V$, $f_{RF}=76\sim 108MHz$, $T_a=+25^{\circ}C$, $Z_s=Z_l=50\Omega$

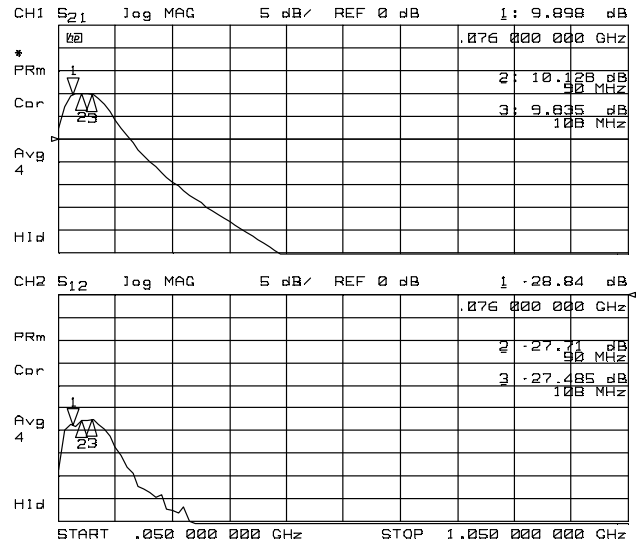


2-5-2 CHARACTERISTICS

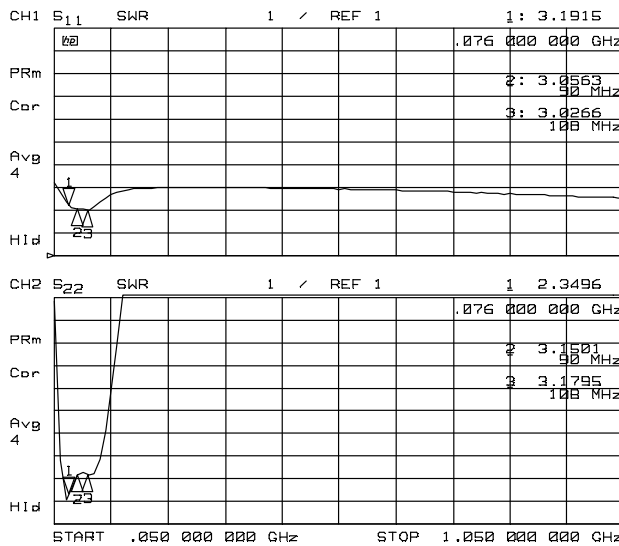
General conditions: $V_{DD}=5.0V$, $f_{RF}=50\sim 1050MHz$, $T_a=+25^{\circ}C$, $Z_s=Z_l=50\Omega$



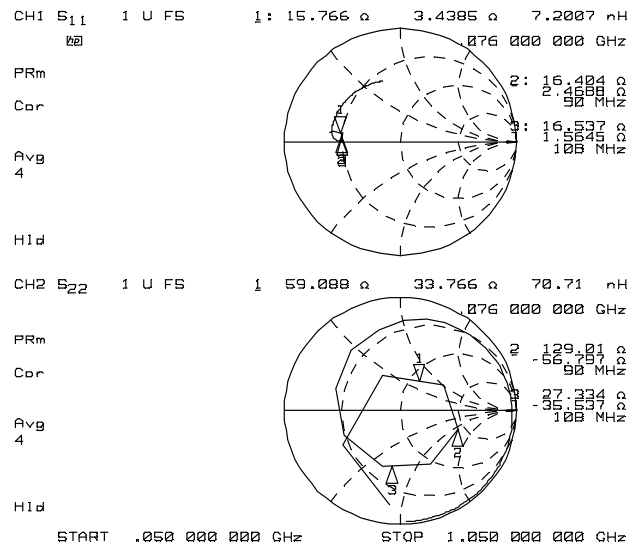
S₁₁, S₂₂



S₂₁, S₁₂



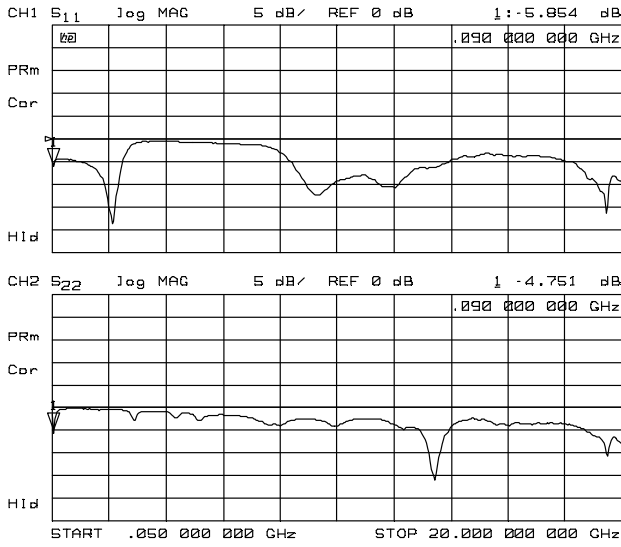
VSWR



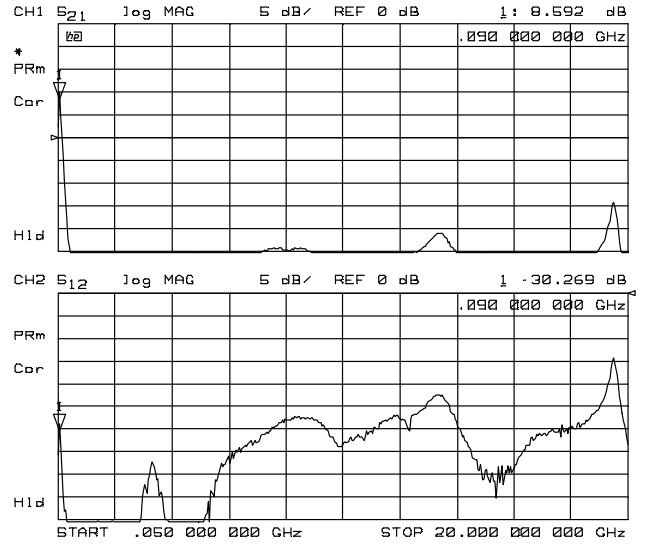
Z_{in}, Z_{out}

2-5-3 CHARACTERISTICS

General conditions: $V_{DD}=5.0V$, $f_{RF}=0.05\sim 20GHz$, $T_a=+25^\circ C$, $Z_s=Z_l=50\ \Omega$



S₁₁, S₂₂



S₂₁, S₁₂

