SONY

CXG1022TM

High-Frequency SPDT Antenna Switch

Description

The CXG1022TM is an antenna switch MMIC. This IC is designed using the Sony's GaAs J-FET process and operates at a single positive power supply with an ultra-small package.

Features

- Single positive power supply operation
- Insertion loss 0.4 dB (Typ.) at 2.0 GHz
- Medium power switching

P1dB (Typ.)	29 dBm	at 2.0 GHz
		V_{CTL} (H)=3.0 V
	33 dBm	at 2.0 GHZ
		V_{CTL} (H)=4.0 V

- Ultra-small TSSOP package

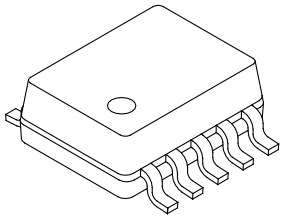
Applications

Antenna switch for digital cordless telephones

Structure

GaAs J-FET MMIC

10 pin TSSOP (Plastic)



Absolute Maximum Ratings (Ta=25 °C)

• Control voltage	Vctl	6	V
• Operating temperature	Topr	–35 to +85	°C
• Storage temperature	Tstg	–65 to +150	°C

Operating Condition

Control voltage	0/3	V

E96547A71-TE

Electrical Characteristics

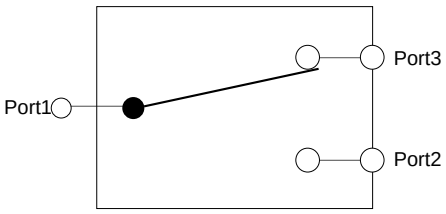
V_{CTL} (L) =0 V, V_{CTL} (H) =3 V, P_{IN}=21.5 dBm (Ta=25 °C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Insertion loss	IL1	f=1.0 GHz		0.3	0.6	dB
Isolation	ISO1		28	31		dB
Insertion loss	IL2	f=2.0 GHz		0.4	0.8	dB
Isolation	ISO2		23	26		dB
Input VSWR	VSWRIN			1.3	1.5	
Output VSWR	VSWROUT			1.3	1.5	
Switching time	TSW			50		ns
Control pin current	I_{CTL}			50	100	µA

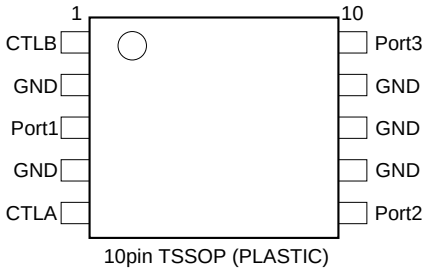
V_{CTL} (L) =0 V, f =2.0 GHz, R_{RF}=200 kΩ (Ta=25 °C)

1 dB gain compression point output	P1dB (3)	V_{CTL} (H) =3 V	26	29		dBm
1 dB gain compression point output	P1dB (4)	V_{CTL} (H) =4 V	30	33		dBm

Block Diagram



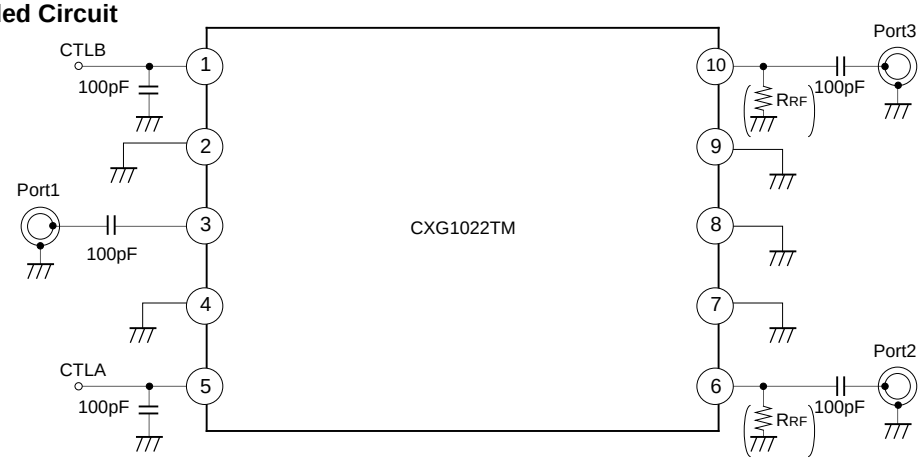
Pin Configuration



10pin TSSOP (PLASTIC)

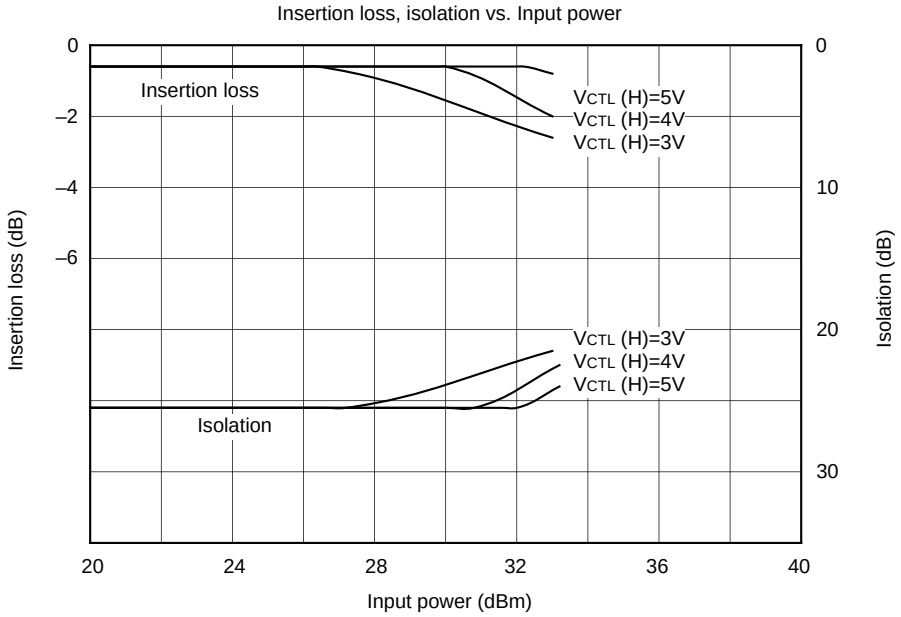
V_{CTLA}	V_{CTLB}	
High	Low	Port1-Port2 ON Port1-Port3 OFF
Low	High	Port1-Port2 OFF Port1-Port3 ON

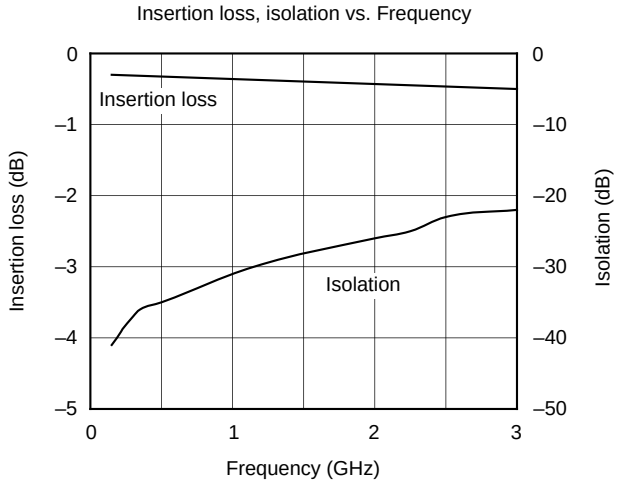
Recommended Circuit



∗ RRF (200kΩ) is used to stabilized the electrical characteristics at high power signal input

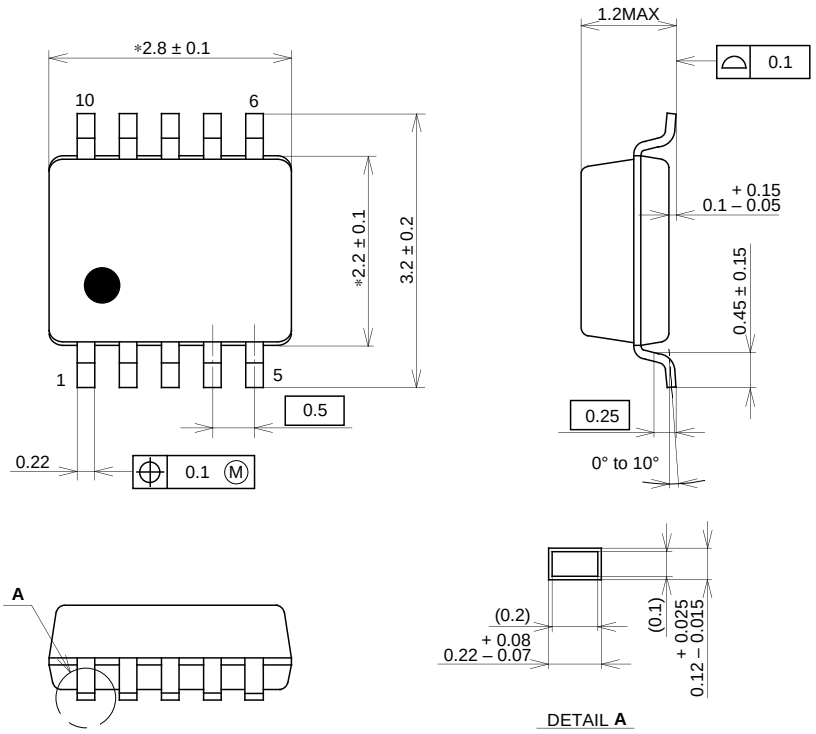
Example of Representative Characteristics (Ta=25 °C)





Package Outline Unit : mm

10PIN TSSOP(PLASTIC)



NOTE: "∗" Dimensions do not include mold protrusion.

SONY CODE	TSSOP-10P-L01
EIAJ CODE	————
JEDEC CODE	————

PACKAGE STRUCTURE

PACKAGE MATERIAL	EPOXY RESIN
LEAD TREATMENT	SOLDER PLATING
LEAD MATERIAL	COPPER ALLOY
PACKAGE MASS	0.02g