

# TG2206F

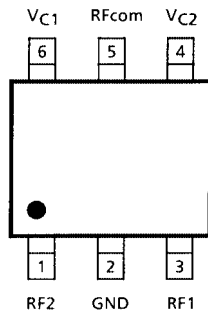
**RF SPDT Switch**

Switch The Receive Filter for Mobile Communication  
 Switch The Diversity Antenna  
 Switch The Local Signal

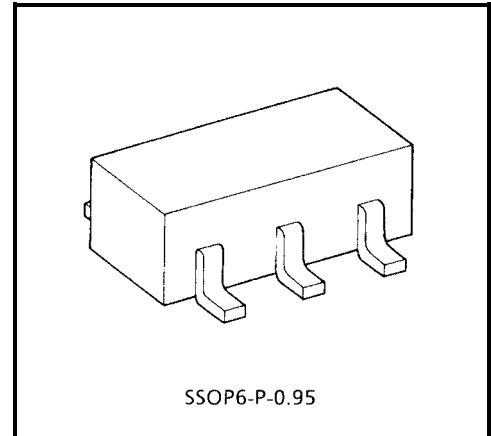
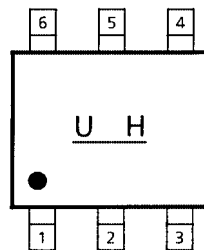
**Features**

- Low insertion loss: LOSS = 0.4dB (typ.)
- High isolation: ISL = 28dB (typ.)
- Low voltage operation:  $V_C = 0\text{ V}/2.5\text{ V}$
- Small package: SM6 package (2.9 × 1.6 × 1.1 mm)

**Pin Assignment (top view)**



**Marking**



SSOP6-P-0.95

Weight: 0.014 g (typ.)

**Maximum Ratings (Ta = 25°C)**

Characteristic	Symbol	Rating	Unit
Control voltage	$V_{C1}$	5	V
	$V_{C2}$	5	V
Input power	$P_i$	1	W
Operating temperature range	$T_{opr}$	-40~85	°C
Storage temperature range	$T_{stg}$	-55~125	°C

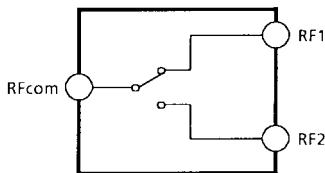
**Caution**

This device is electrostatic sensitivity. Please handle with caution.

## Electrical Characteristics (f = 1 GHz, Ta = 25°C, Zg = Zi = 50 Ω)

Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Insertion loss	LOSS (1)	1	V <sub>C1</sub> = 2.5 V, V <sub>C2</sub> = 0 V, P <sub>i</sub> = 0dBmW	—	0.4	0.7	dB
	LOSS (2)	1	V <sub>C1</sub> = 0 V, V <sub>C2</sub> = 2.5 V, P <sub>i</sub> = 0dBmW	—	0.4	0.7	
Isolation	ISL (1)	1	V <sub>C1</sub> = 2.5 V, V <sub>C2</sub> = 0 V, P <sub>i</sub> = 0dBmW	25	28	—	dB
	ISL (2)	1	V <sub>C1</sub> = 0 V, V <sub>C2</sub> = 2.5 V, P <sub>i</sub> = 0dBmW	25	28	—	
Output power at 1dB gain compression	P <sub>01dB</sub>	1	V <sub>C1</sub> = 2.5 V, V <sub>C2</sub> = 0 V or V <sub>C1</sub> = 0 V, V <sub>C2</sub> = 2.5 V	15	20	—	dBmW
Control current	I <sub>C1</sub>	—	V <sub>C1</sub> = 0 V, V <sub>C2</sub> = 3 V or V <sub>C1</sub> = 3 V, V <sub>C2</sub> = 0 V	—	—	0.01	mA
	I <sub>C2</sub>	—		—	—	0.01	
Switching time	t <sub>sw</sub>	—	V <sub>C1</sub> = 0 V, V <sub>C2</sub> = 3 V or V <sub>C1</sub> = 3 V, V <sub>C2</sub> = 0 V	—	0.01	—	μs

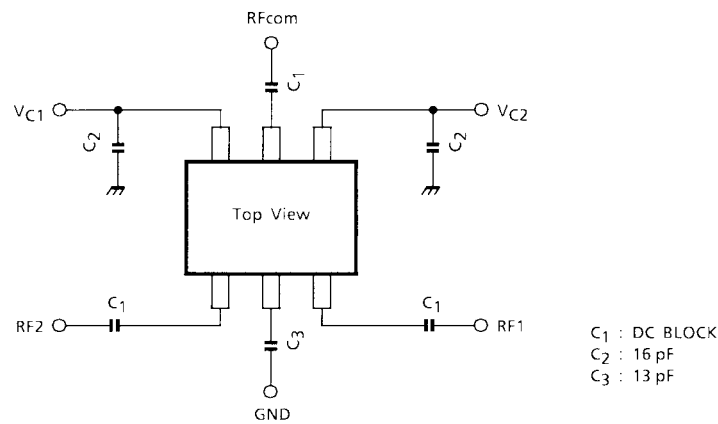
### Block Diagram



### Switch Condition

Control Voltage	Switch Condition
V <sub>C1</sub> = 2.5 V V <sub>C2</sub> = 0 V	RF <sub>Com</sub> - RF1 OFF RF <sub>Com</sub> - RF2 ON
V <sub>C1</sub> = 0 V V <sub>C2</sub> = 2.5 V	RF <sub>Com</sub> - RF1 ON RF <sub>Com</sub> - RF2 OFF

**Test Circuit 1 (RF Test Circuit)**



Please fix the value of each capacity for using frequency and circuit.

**Notice**

The circuits and measurements contained in this document are given only in the context of as examples of applications for these products.

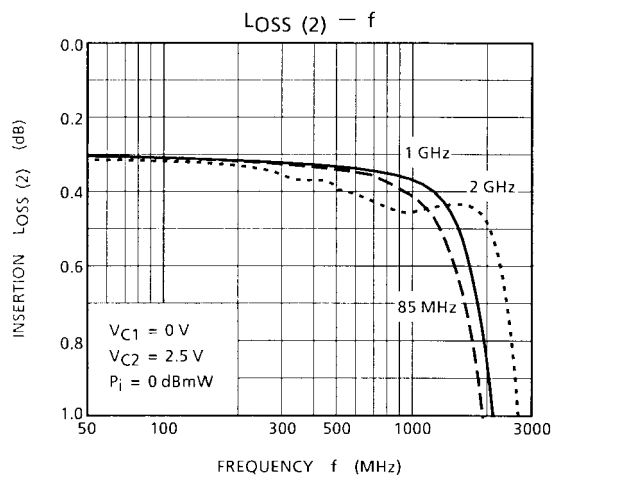
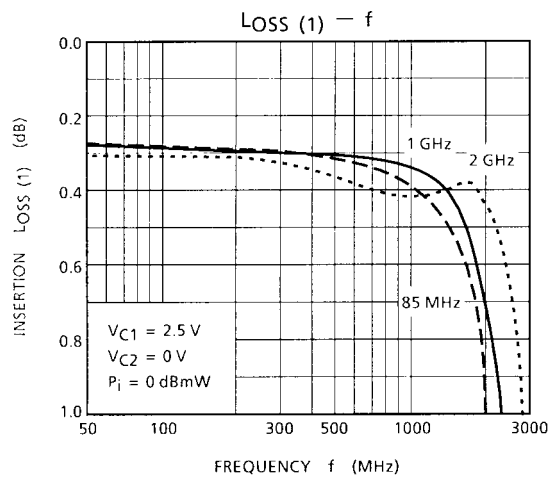
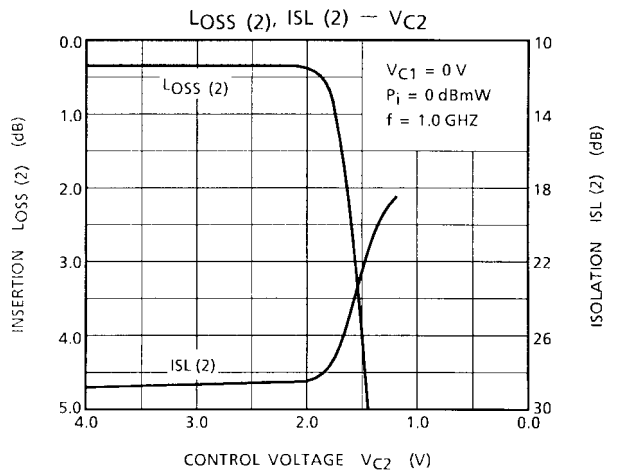
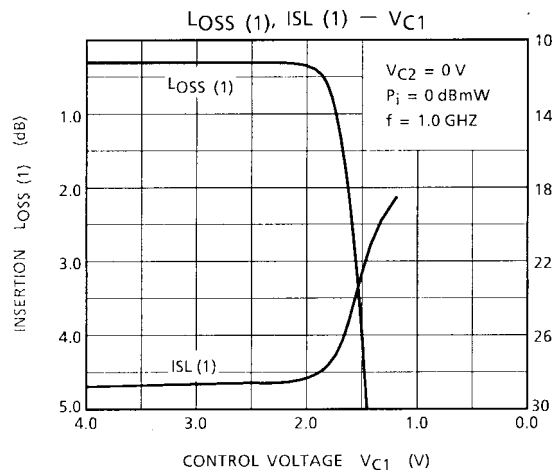
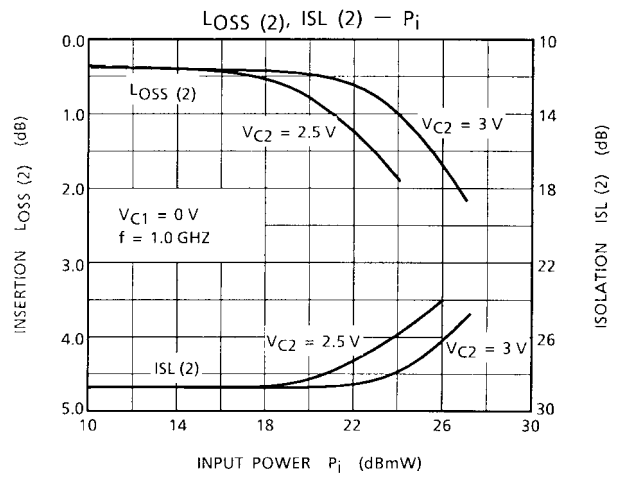
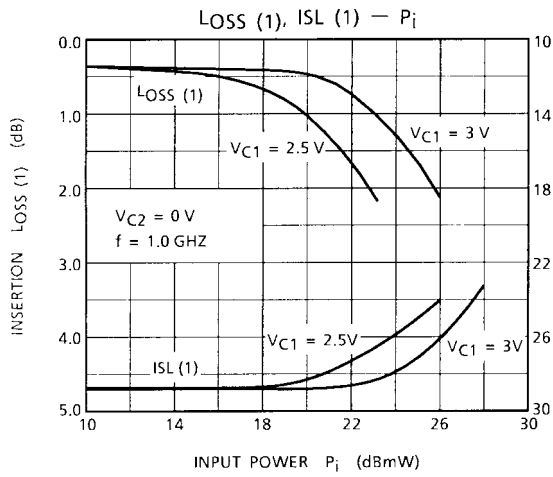
Moreover, these example application circuits are not intended for mass production, since the high-frequency characteristics (the AC characteristics) of these devices will be affected by the external components which the customer uses, by the design of the circuit and by various other conditions.

It is the responsibility of the customer to design external circuits which correctly implement the intended application, and to check the characteristics of the design.

TOSHIBA assume no responsibility for the integrity of customer circuit designs or applications.

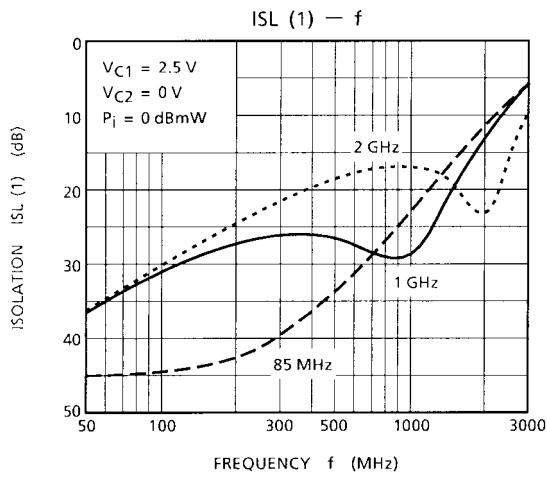
**Recommend Capacity**

	85 MHz	0.8~1 GHz	1.6 GHz	2 GHz
C1	100 pF	100 pF	22 pF	9 pF
C2	100 pF	16 pF	10 pF	9 pF
C3	150 pF	13 pF	4 pF	3 pF

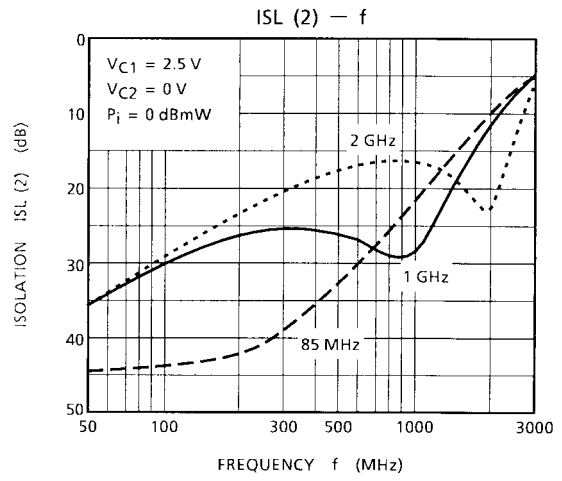


This curve shows the frequency characteristics when recommended capacitance for each frequency added.

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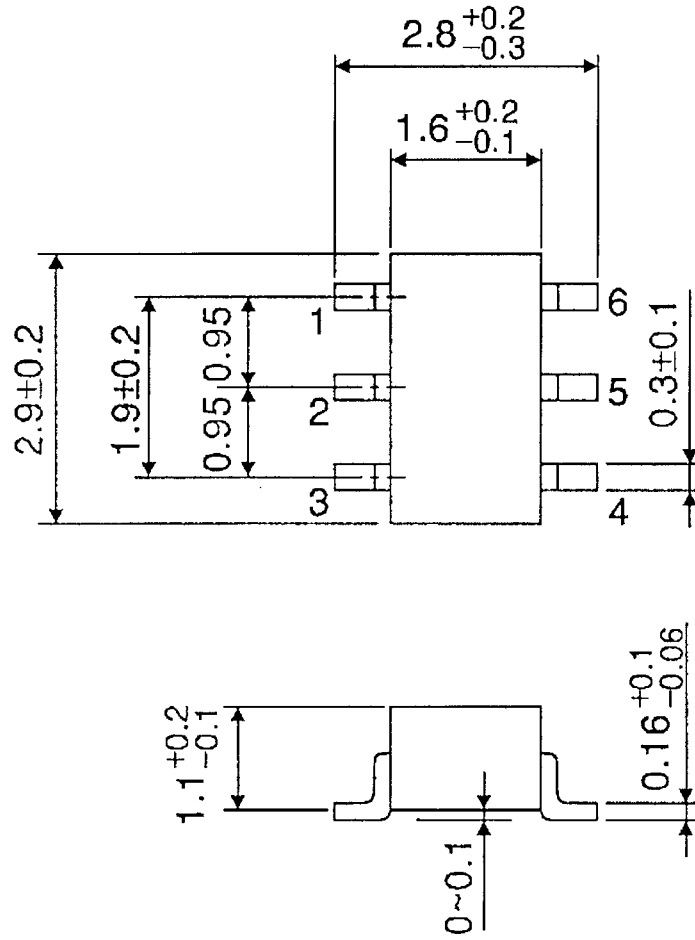


This curve shows the frequency characteristics when recommended capacitance for each frequency added.

## Package Dimensions

SSOP6-P-0.95

Unit : mm



Weight : 0.014 g (Typ.)

**RESTRICTIONS ON PRODUCT USE**

020704EBC

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