

TOSHIBA GaAs LINEAR INTEGRATED CIRCUIT GaAs MONOLITHIC

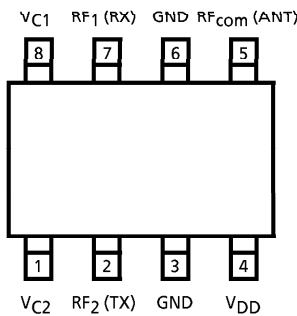
TG2200AF

1.9GHz BAND ANTENNA SWITCH (PHS DIGITAL CORDLESS TELEPHONE)

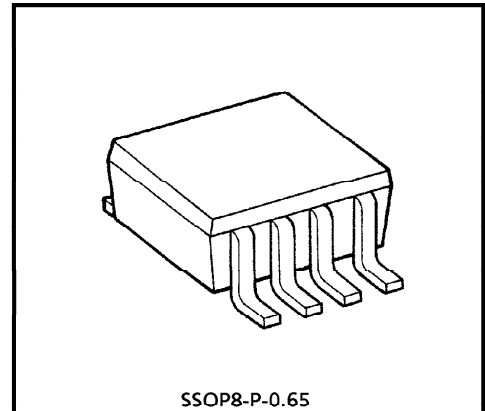
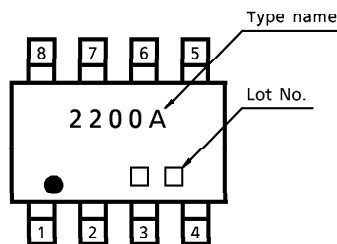
FEATURES

- LOW INSERTION LOSS : $L_{OSS} = 0.5\text{dB}$ (Typ.)
- HIGH ISOLATION : $ISL = 25\text{dB}$ (Typ.)
- CONTROL VOLTAGE : $0\text{V} / 3\text{V}$

PIN CONNECTION (TOP VIEW)



MARKING



Weight : 0.02g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{DD}	5	V
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

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ELECTRICAL CHARACTERISTICS ($V_{DD} = 3V$, $T_a = 25^\circ C$, $Z_G = Z_I = 50\Omega$)

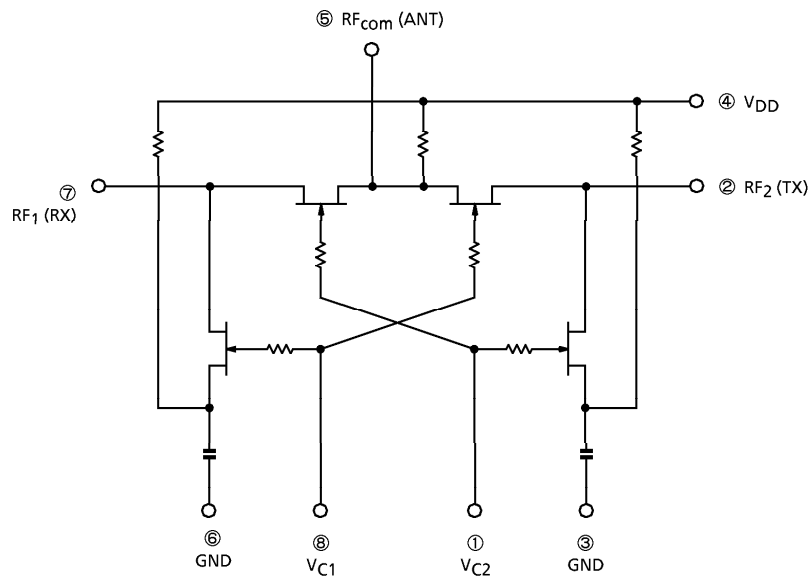
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f_{range}	—	—	1895	—	1918	MHz
Insertion Loss	LOSS (1)	1	$V_{C1} = 3V$, $V_{C2} = 0V$, $P_i = 22dBmW$	—	0.5	1.0	dB
	LOSS (2)	1	$V_{C1} = 0V$, $V_{C2} = 3V$, $P_i = 0dBmW$	—	0.5	1.0	dB
Isolation	ISL (1)	1	$V_{C1} = 3V$, $V_{C2} = 0V$, $P_i = 22dBmW$	20	25	—	dB
	ISL (2)	1	$V_{C1} = 0V$, $V_{C2} = 3V$, $P_i = 0dBmW$	20	25	—	dB
Switching Time	t_{sw}	—	$V_{C1} = 3V$, $V_{C2} = 0V$ or $V_{C1} = 0V$, $V_{C2} = 3V$	—	0.01	—	μs
Supply Current	I_{DD}			—	—	0.1	mA
Control Current	I_{C1}			—	—	0.1	mA
	I_{C2}			—	—	0.1	mA
Output Power at 1dB Gain Compression	P_{o1dB}	1	$V_{C1} = 3V$, $V_{C2} = 0V$	—	24	—	dBm W
Adjacent Channel Leakage Power Ratio	P_{adj}	1	$V_{C1} = 3V$, $V_{C2} = 0V$, $P_i = 22dBmW$ (Note), $\Delta f = 600kHz$	—	—	-60	dB

(Note) Input signal is modulated to $\pi / 4QPSK$ ($\alpha = 0.5$). Bit rate is 384kbps.

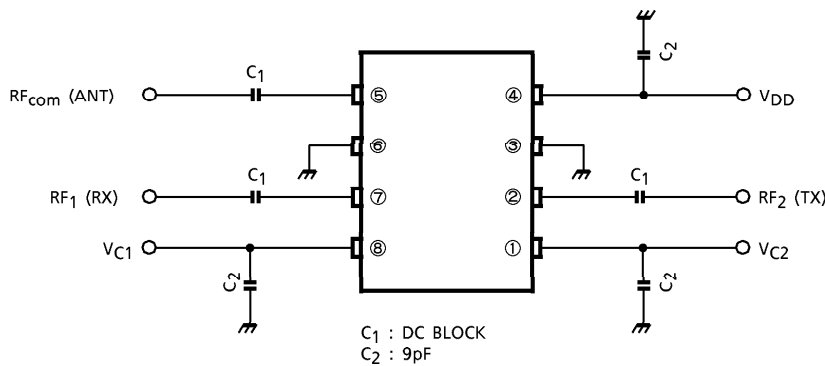
TRUTH TABLE

CONTROL VOLTAGE		SWITCH CONDITION	
V_{C1}	V_{C2}	RF_{com} (ANT)- RF_1 (RX)	RF_{com} (ANT)- RF_2 (TX)
3V	0V	OFF	ON
0V	3V	ON	OFF

EQUIVALENT CIRCUIT



TEST CIRCUIT 1

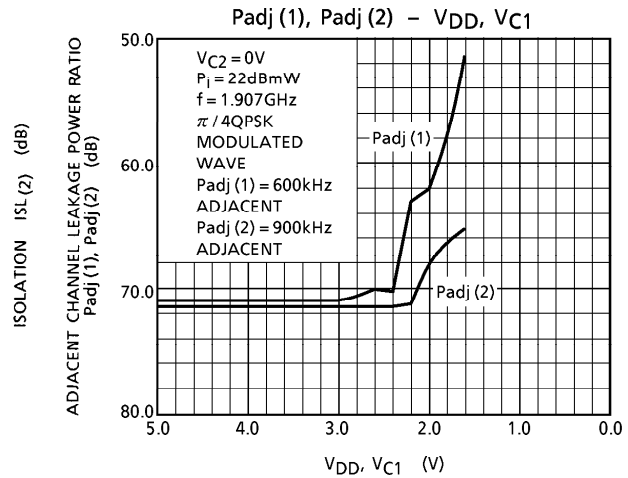
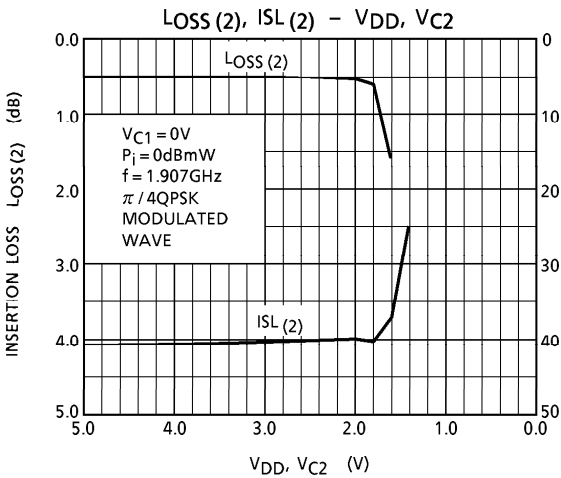
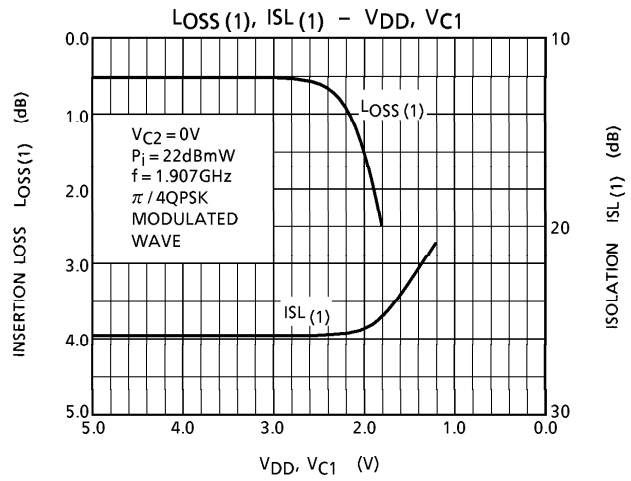
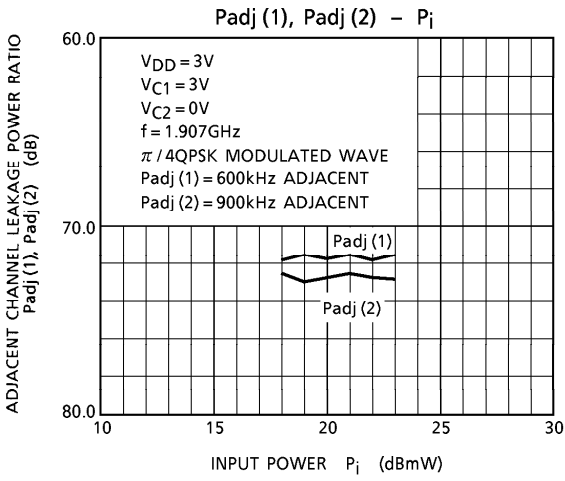
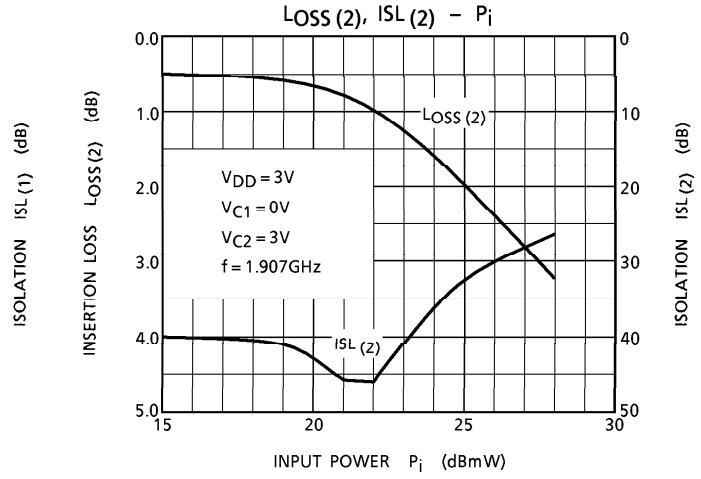
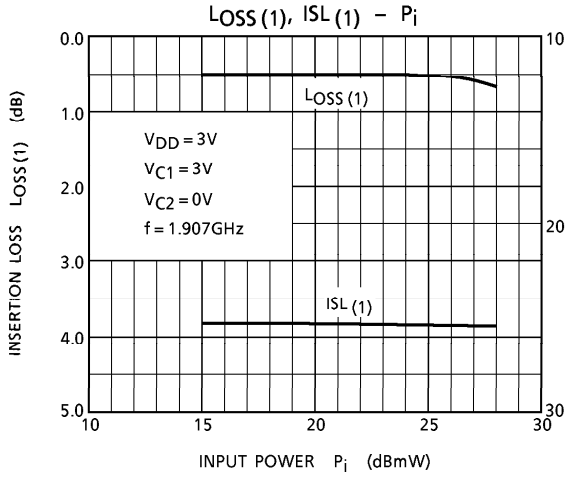


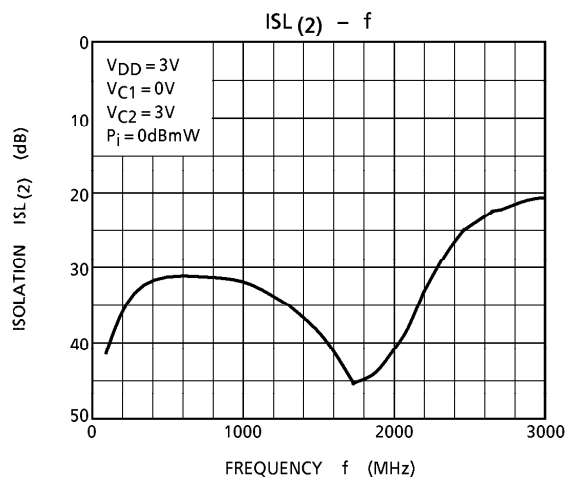
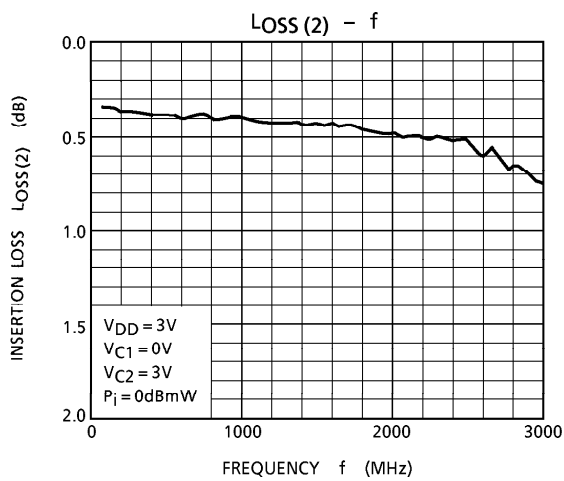
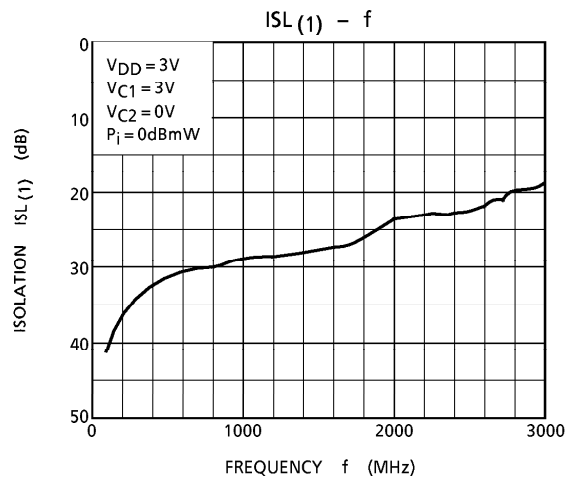
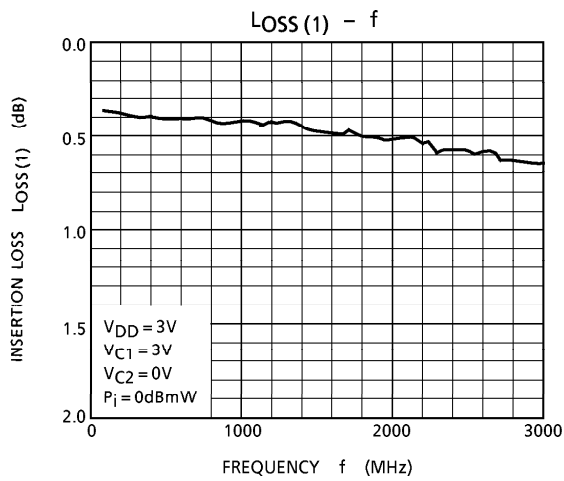
RF TEST CONDITION (V_{DD} = 3V, f = 1.907GHz, T_a = 25°C, Z_g = Z_l = 50Ω)

	RF _{com} (ANT)	RF ₁ (RX)	RF ₂ (TX)	INPUT POWER	V _{C1}	V _{C2}
LOSS (1)	P _O	50Ω TERMINATION	P _i	22dBmW	3V	0V
LOSS (2)	P _i	P _O	50Ω TERMINATION	0dBmW	0V	3V
ISL (1)	50Ω TERMINATION	P _O	P _i	22dBmW	3V	0V
ISL (2)	P _i	50Ω TERMINATION	P _O	0dBmW	0V	3V
P _O 1dB	P _O	50Ω TERMINATION	P _i	—	3V	0V
Padj	P _O	50Ω TERMINATION	P _i	22dBmW	3V	0V

CAUTION

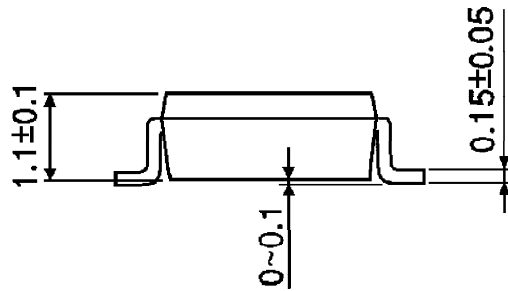
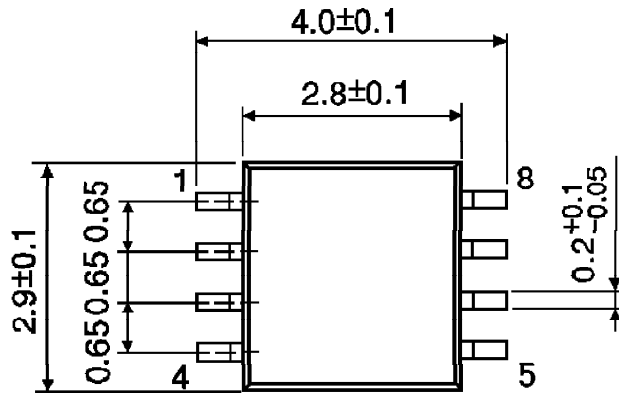
This device is electrostatic sensitivity. Please handle with caution.





OUTLINE DRAWING
SSOP8-P-0.65

Unit : mm



Weight : 0.02g (Typ.)