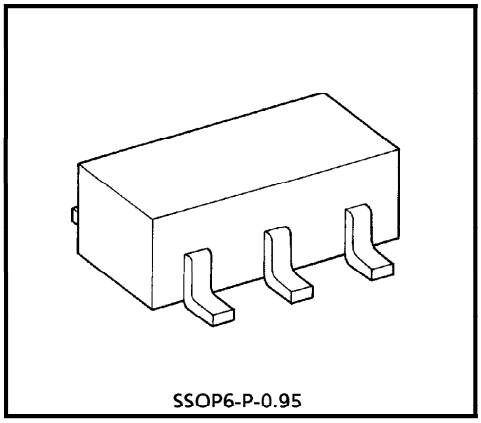
TOSHIBA GaAs LINEAR INTEGRATED CIRCUIT GaAs MONOLITHIC

TG2202F

1.9GHz BAND ATTENUATOR
(PHS DIGITAL CORDLESS TELEPHONE)

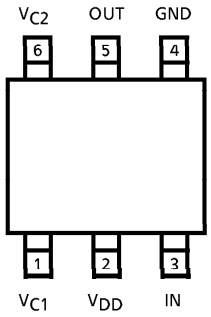
FEATURES

- ATTENUATION : ATT = 22dB (Typ.)
- CONTROL VOLTAGE : 0V / 3V

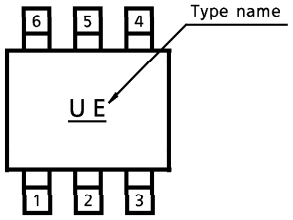


Weight : 0.014g (Typ.)

PIN CONNECTION (TOP VIEW)



MARKING



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	100	mW
Operating Temperature Range	T_{opr}	−40~85	°C
Storage Temperature Range	T_{stg}	−55~125	°C

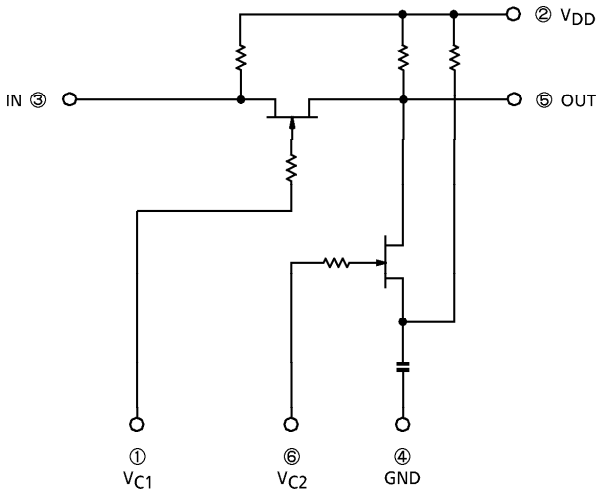
ELECTRICAL CHARACTERISTICS (V_{DD} = 3V, Ta = 25°C, $Z_g = Z_l = 50\Omega$)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f_{range}	—	—	1895	—	1918	MHz
Insertion Loss	L_{OSS}	1	V_{C1} = 3V, V_{C2} = 0V, P_i = 0dBmW	—	0.7	1.5	dB
Attenuation	ATT	1	V_{C1} = 0V, V_{C2} = 3V, P_i = 0dBmW	19	22	25	dB
Supply Current	I_{DD}	—	V_{C1} = 3V, V_{C2} = 0V or V_{C1} = 0V, V_{C2} = 3V	—	—	0.1	mA
Control Current	I_{C1}			—	—	0.1	mA
	I_{C2}			—	—	0.1	mA
Input VSWR	$VSWR_{in}$	1	V_{C1} = 3V, V_{C2} = 0V, P_i = 0dBmW	—	1.4	2.0	—
Output VSWR	$VSWR_{out}$			—	1.4	2.0	—
Output Power at 1dB Gain Compression	P_{o1dB}			—	10	—	dBm W

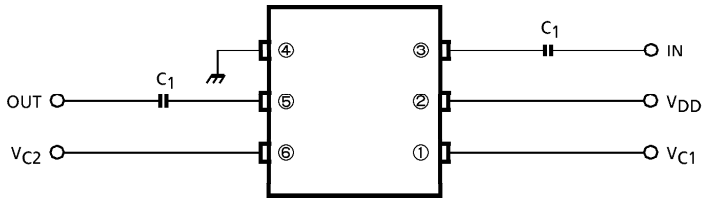
TRUTH TABLE

CONTROL VOLTAGE		ATTENUATOR CONDITION
V_{C1}	V_{C2}	IN-OUT
3V	0V	ATTENUATE OFF
0V	3V	ATTENUATE ON

EQUIVALENT CIRCUIT



TEST CIRCUIT 1



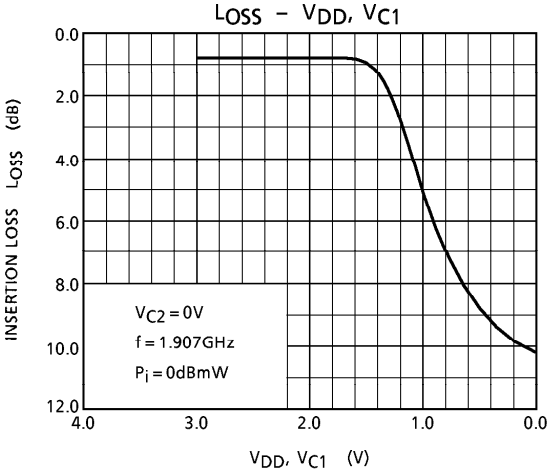
C_1 : DC BLOCK

(Note) V_{C1}, V_{C2} and V_{DD} are connected to GND by capacitor (9pF) in order to measure dependence on frequency of L_{OSS} and ATT.

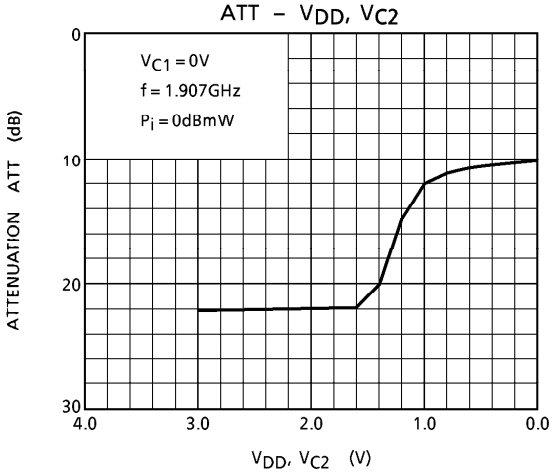
CAUTION

This device is electrostatic sensitivity. Please handle with caution.

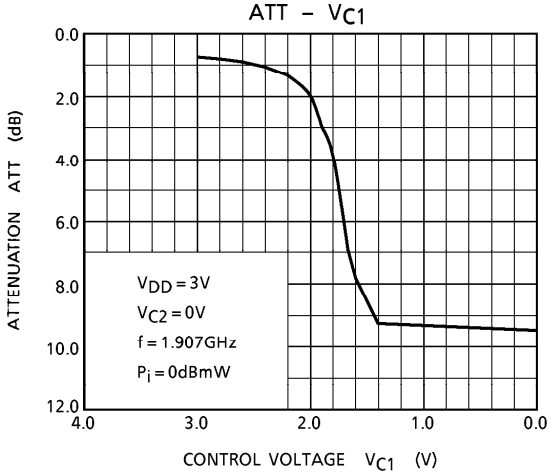
L_{OSS} – V_{DD}, V_{C1}



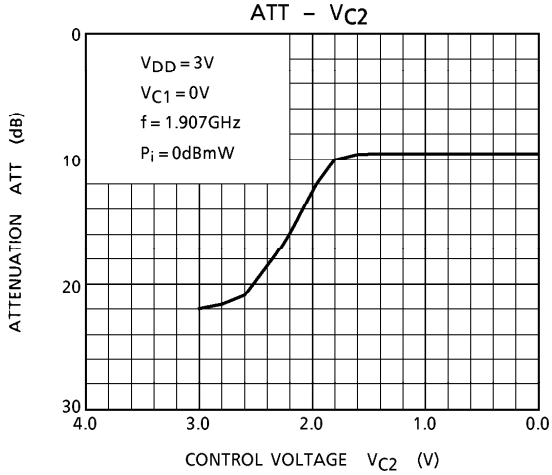
ATT – V_{DD}, V_{C2}



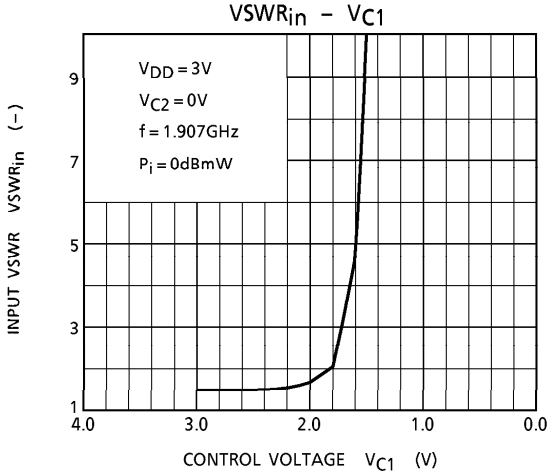
ATT – V_{C1}



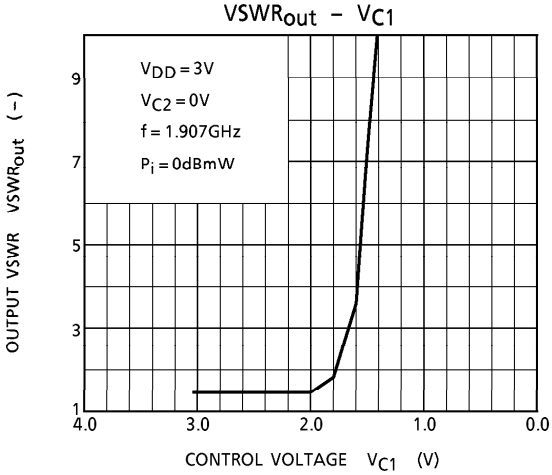
ATT – V_{C2}



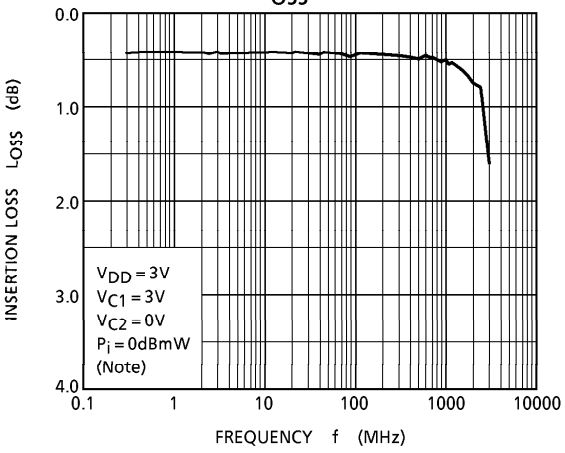
$VSWR_{in}$ – V_{C1}



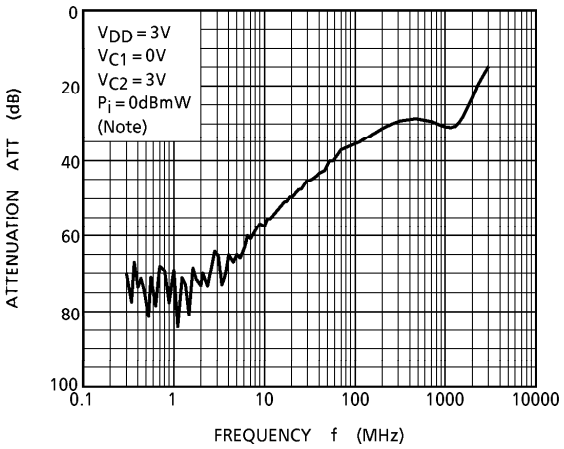
$VSWR_{out}$ – V_{C1}



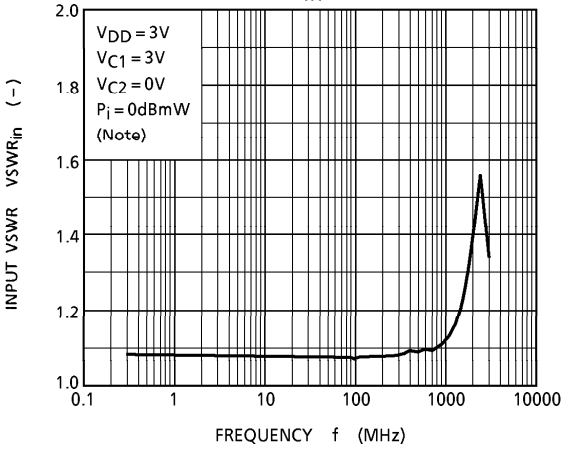
L_{OSS} – f



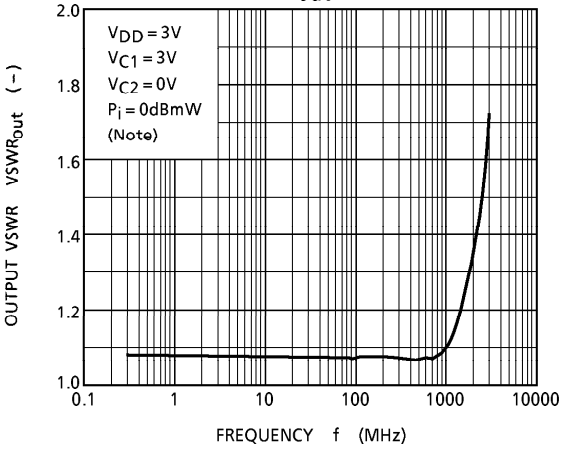
ATT – f



$VSWR_{in}$ – f



$VSWR_{out}$ – f



L_{OSS}, ATT – P_i