

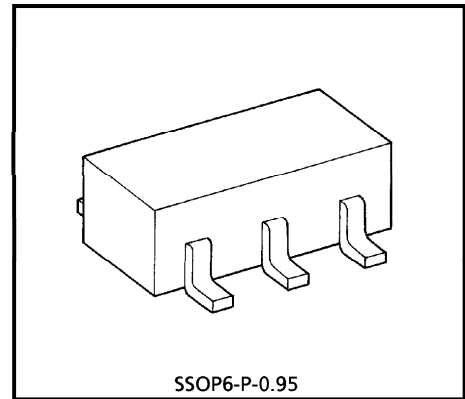
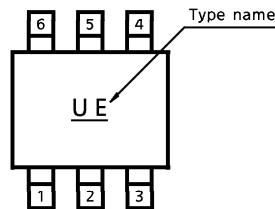
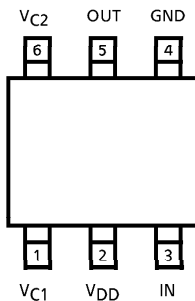
TG2202F

1.9 GHz BAND ATTENUATOR (PHS DIGITAL CORDLESS TELEPHONE)

FEATURES

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

PIN CONNECTION (TOP VIEW) MARKING



SSOP6-P-0.95
Weight : 0.014 g (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	100	mW
Operating Temperature Range	T _{opr}	-40~85	°C
Storage Temperature Range	T _{stg}	-55~125	°C

961001EAC1

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

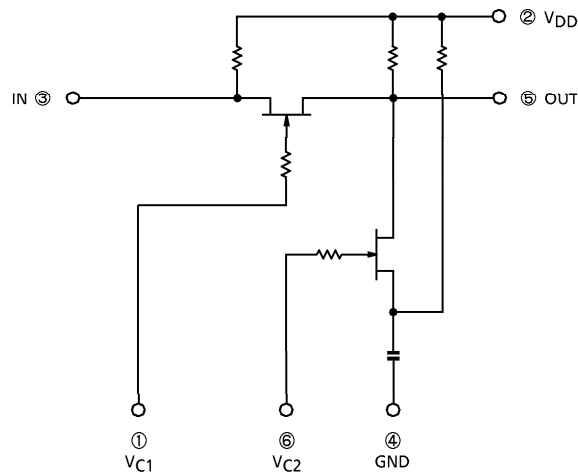
ELECTRICAL CHARACTERISTICS ($V_{DD} = 3\text{ V}$, $T_a = 25^\circ\text{C}$, $Z_g = Z_l = 50\ \Omega$)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Frequency Range	f_{range}	—	—	1895	—	1918	MHz
Insertion Loss	L_{OSS}	1	$V_{C1} = 3\text{ V}$, $V_{C2} = 0\text{ V}$, $P_i = 0\text{ dBmW}$	—	0.7	1.5	dB
Attenuation	ATT	1	$V_{C1} = 0\text{ V}$, $V_{C2} = 3\text{ V}$, $P_i = 0\text{ dBmW}$	19	22	25	dB
Supply Current	I_{DD}	—	$V_{C1} = 3\text{ V}$, $V_{C2} = 0\text{ V}$ or $V_{C1} = 0\text{ V}$, $V_{C2} = 3\text{ V}$	—	—	0.1	mA
Control Current	I_{C1}			—	—	0.1	mA
	I_{C2}			—	—	0.1	mA
Input VSWR	$V_{\text{SWR}}_{\text{in}}$	1	$V_{C1} = 3\text{ V}$, $V_{C2} = 0\text{ V}$, $P_i = 0\text{ dBmW}$	—	1.4	2.0	—
Output VSWR	$V_{\text{SWR}}_{\text{out}}$			—	1.4	2.0	—
Output Power at 1dB Gain Compression	$P_{O1\text{dB}}$			—	10	—	dBmW

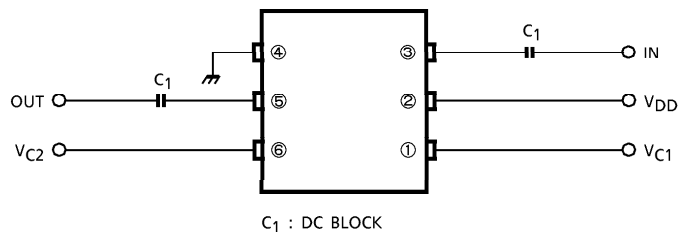
TRUTH TABLE

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

EQUIVALENT CIRCUIT



TEST CIRCUIT 1



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

NOTICE

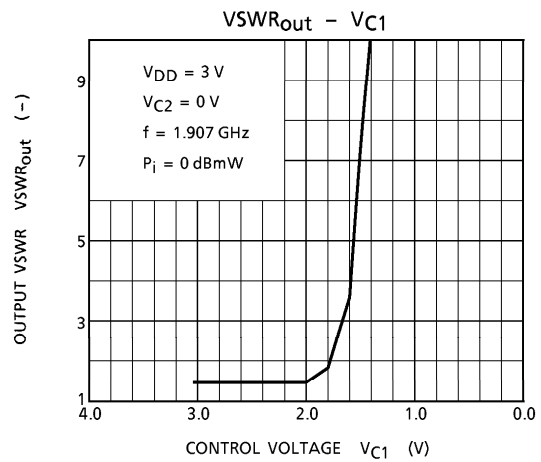
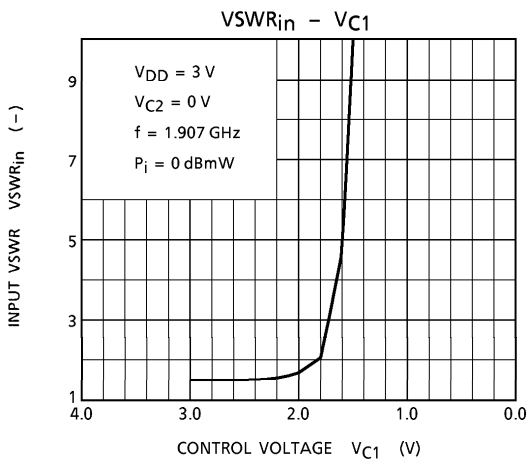
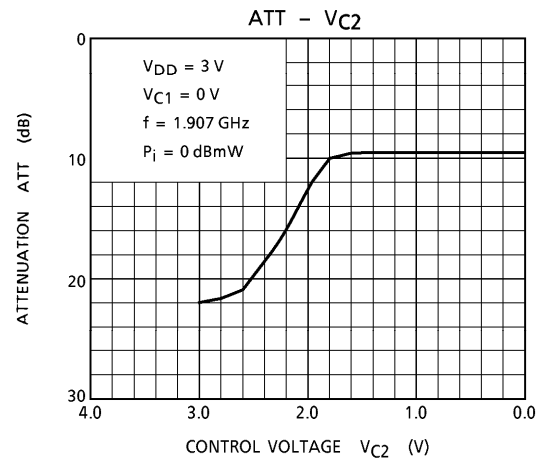
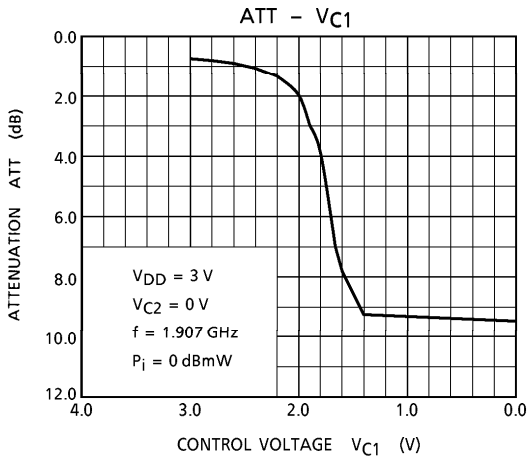
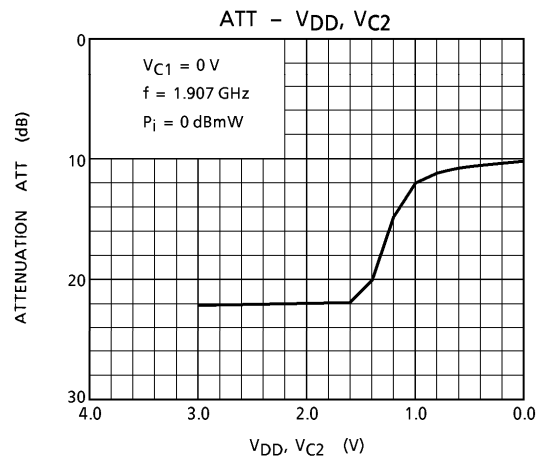
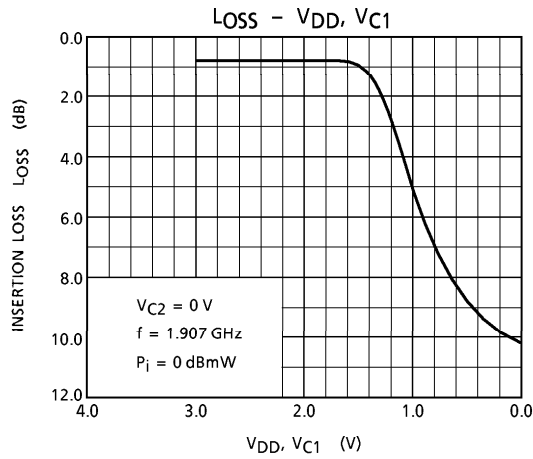
The circuits and measurements contained in this document are given only in the context of as examples of applications for these products.

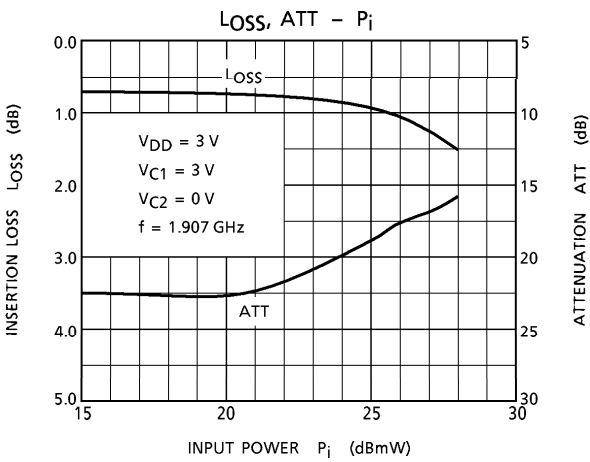
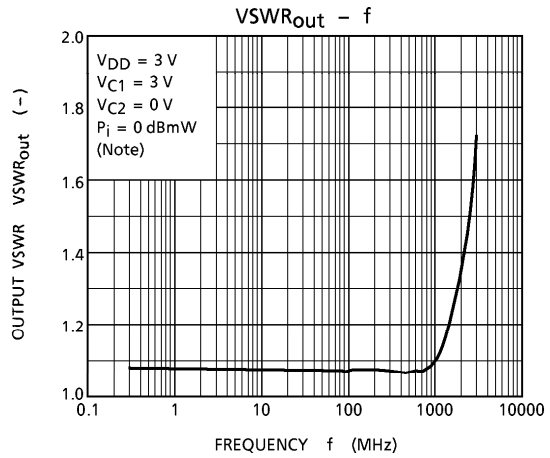
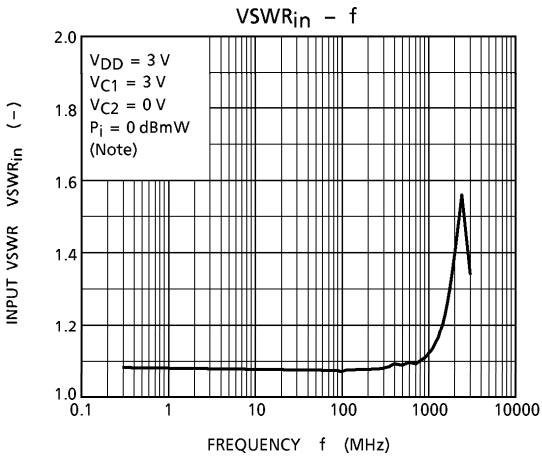
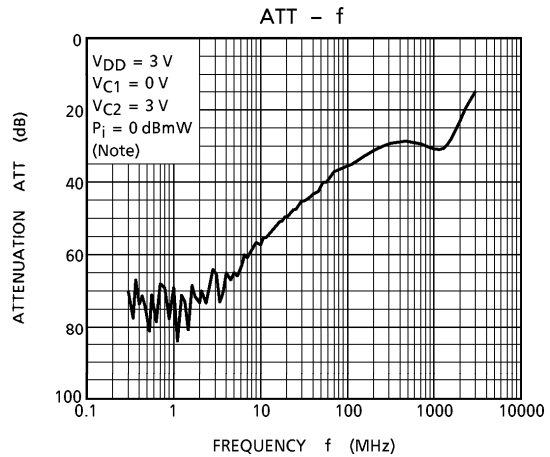
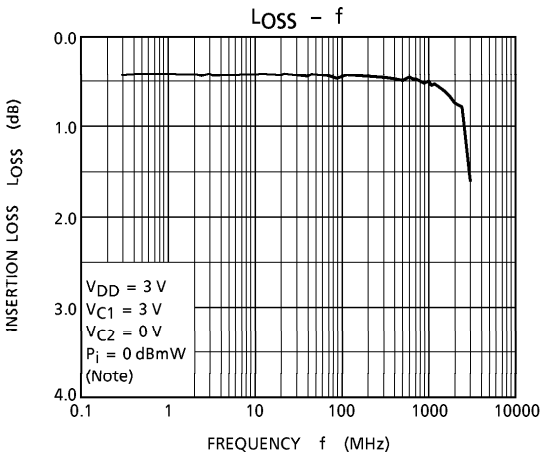
Moreover, these example application circuits are not intended for mass production, since the high-frequency characteristics (the AC characteristics) of these devices will be affected by the external components which the customer uses, by the design of the circuit and by various other conditions. It is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

CAUTION

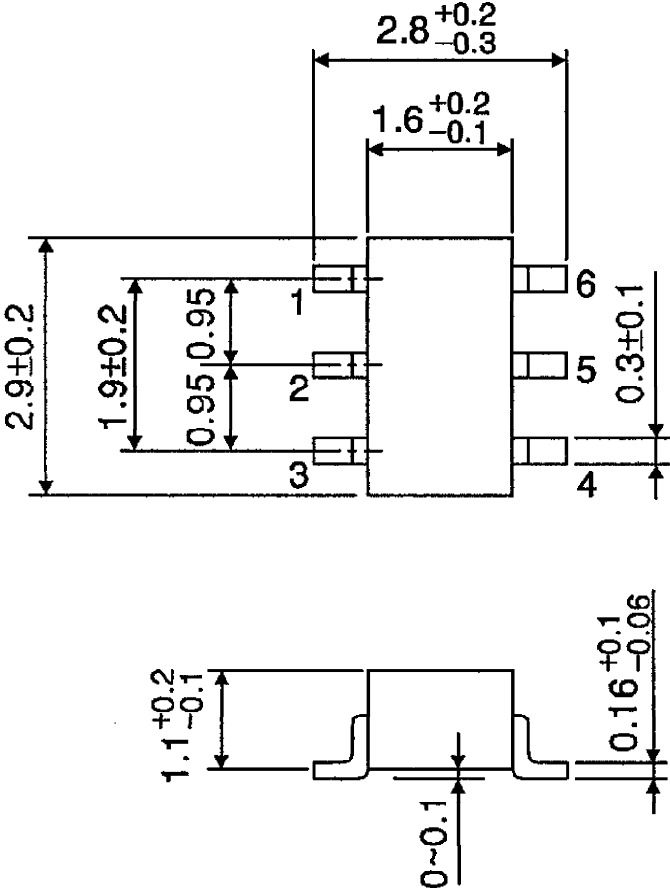
This device is electrostatic sensitivity. Please handle with caution.





PACKAGE DIMENSIONS
SSOP6-P-0.95

Unit : mm



Weight : 0.014g (Typ.)