

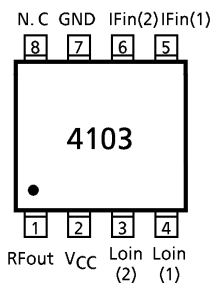
TA4103F

1.9 GHz BAND UP CONVERTER APPLICATION

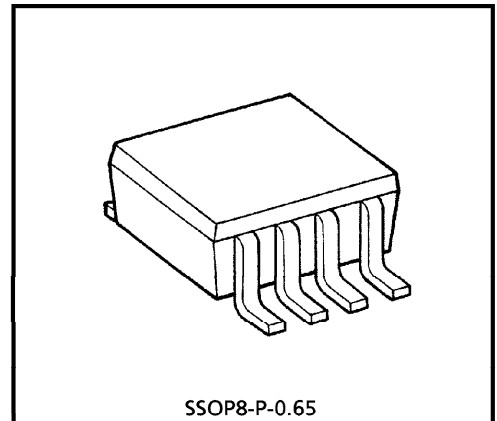
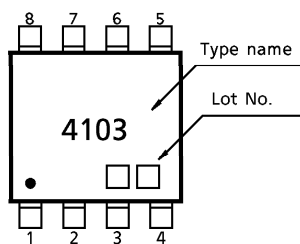
FEATURES

- Built in Lo and IF buffer amplifiers.
- Double balanced MIX circuit
- High conversion gain : $G_C = 3 \text{ dB (Typ.)}$
- Recommended operating voltage : $V_{CC} = 2.7 \sim 3.3 \text{ V}$

PIN ASSIGNMENT (Top View)



MARKING



SSOP8-P-0.65
Weight : 0.02 g (Typ.)

MAXIMUM RATING (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	5	V
Total Power Dissipation	P_D (*)	300	mW
Operating Temperature	T_{opr}	-40~85	°C
Storage Temperature Range	T_{stg}	-55~125	°C

(*) : When mounted on the glass epoxy board of 2.5 cm² x 1.6 t.

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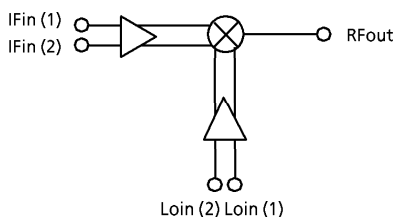
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ELECTRICAL CHARACTERISTICS ($V_{CC} = 3\text{ V}$, $T_a = 25^\circ\text{C}$, $Z_g = Z_l = 50\ \Omega$)

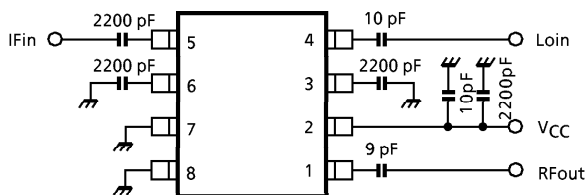
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
RF Frequency Range	f_{RFout}	—		1895	—	1918	MHz
IF Frequency Range	f_{IFin}			220	—	250	MHz
Lo Frequency Range	f_{Loin}			1645	—	1698	MHz
Circuit Current	I_{CC}	—	Non Carrier	23	26.5	33	mA
Conversion Gain	G_C	1	$P_{Loin} = -20\text{ dBmW}$	1	3	—	dB
Output Power At 1dB Gaing Compression	P_{O1dB}			-19	-17	—	dB
Lo-RF Leakage Power	P_{RFLo}			—	—	-20	dBmW
Lo-IF Leakege Power	P_{IFLo}			—	—	-33	dBmW
Adjacent Channel Leakage Power Ratio	P_{adj}			$P_{RFout} = -18\text{ dBmW}$ $P_{IFin} = \text{Adjusted}$ $\Delta f = 600\text{ kHz (Note)}$		—	-63

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

BLOCK DIAGRAM



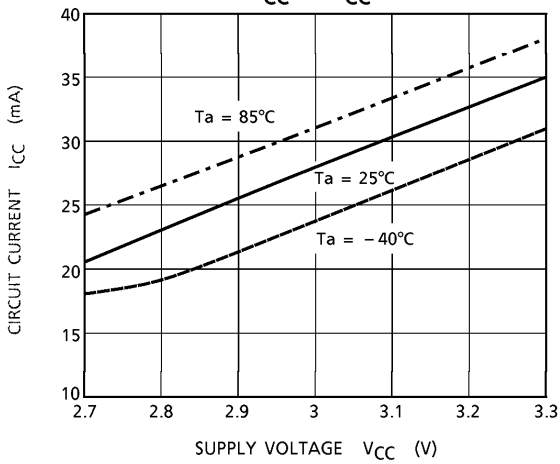
TEST CIRCUIT 1



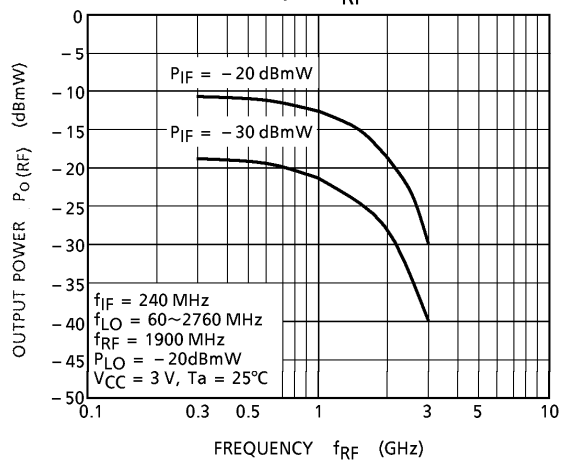
NOTICE

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.

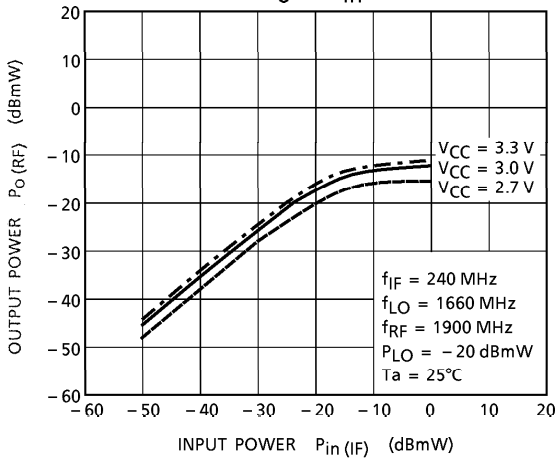
$I_{CC} - V_{CC}$



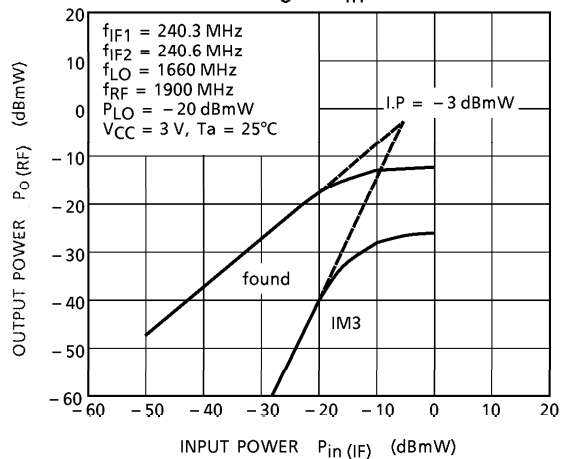
$P_o - f_{RF}$



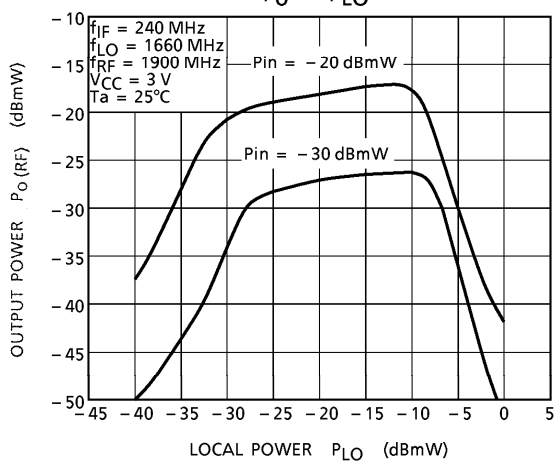
$P_o - P_{in}$



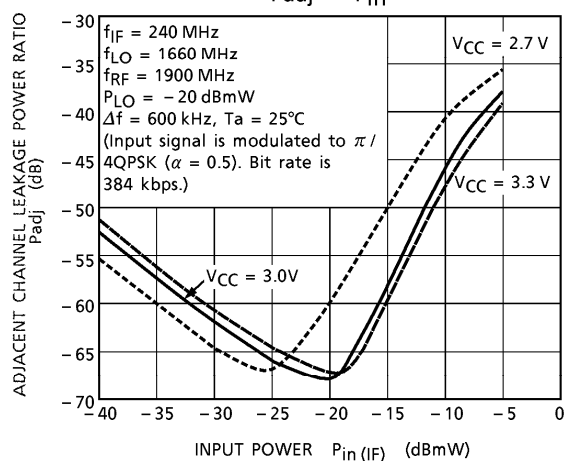
$P_o - P_{in}$



$P_o - P_{LO}$

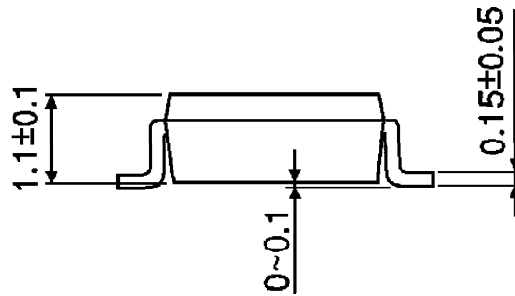
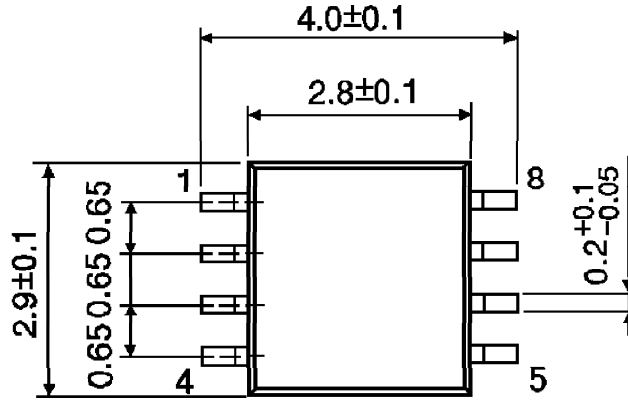


$P_{adj} - P_{in}$



PACKAGE DIMENSIONS
SSOP8-P-0.65

Unit : mm



Weight : 0.02 g (Typ.)