

# UN0231C

## RF Power Amplifier Module

For the preamplifier of the transmitting section in a cellular phone

### ■ Features

- High efficiency with super miniature, 0.08 cc package(7.5 × 7.5 × 1.7 mm)

### ■ Absolute Maximum Ratings $T_a=25^\circ\text{C}$

Parameter	Symbol	Ratings	Unit
Power supply voltage 1 *1	$V_{DD1}$	6	V
Power supply voltage 2 *1	$V_{DD2}$	6	V
Circuit current 1	$I_{DD1}$	200	mA
Circuit current 2	$I_{DD2}$	800	mA
Gate voltage	$V_{GG}$	-4	V
Max input power	$P_{IN}$	10	dBm
Allowable power dissipation	$P_D$	2	W
Case temperature *2	$T_{case}$	-30 to +110	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +120	$^\circ\text{C}$

Note) 1. The reverse of the device is soldered to the plate

2. \*1 :  $V_{GG}=-3.5\text{ V}$

\*2 :  $T_{case}=25^\circ\text{C}$

### ■ Electrical Characteristics $V_{GG}=-2.5\text{ V}$ , $f=824\text{ MHz to }849\text{ MHz}$ , $T_a=25^\circ\text{C}\pm 3^\circ\text{C}$ , Nominal : $Z_S=Z_L=50\ \Omega$

Parameter	Symbol	Conditions	min	typ	max	Unit
Idle current	$I_{idle}$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{IN}=No$		110	140	mA
Gate current *1	$I_{GG}$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=30.5\text{ dBm}$			4	mA
Circuit current 1 *1	$I_{DD1}$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=30.5\text{ dBm}$		600	670	mA
Circuit current 2 *2	$I_{DD2}$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=27.0\text{ dBm}$		390	440	mA
Gain 1 *1	G1	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=30.5\text{ dBm}$	24.0	26.5		dB
Gain 2 *2	G2	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=27.0\text{ dBm}$	25.5	27.5		dB
2nd harmonics *1	$2f_O$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=30.5\text{ dBm}$			-30	dBc
3rd harmonics *1	$3f_O$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=30.5\text{ dBm}$			-30	dBc
4th harmonics *1	$4f_O$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=30.5\text{ dBm}$			-30	dBc
Voltage standing wave ratio *1	$V_{SWR\ IN}$	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=27.0\text{ dBm}$			3	
Adjacent channel leakage power suppression 1 *2	ACPR1	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=27.0\text{ dBm}$ $\pm 900\text{ kHz Detuning}$ , 30 kHz Bandwidth			-45	dBc
Adjacent channel leakage power suppression 2 *2	ACPR2	$V_{DD1}=V_{DD2}=3.5\text{ V}$ , $P_{OUT}=27.0\text{ dBm}$ $\pm 1980\text{ kHz Detuning}$ , 30 kHz Bandwidth			-57	dBc

Note) \*1 : No modulation.

\*2 : Offset from QPSK signal.

