NEC

GaAs INTEGRATED CIRCUIT L-BAND PA DRIVER AMPLIFIER

UPG173TA

FEATURES

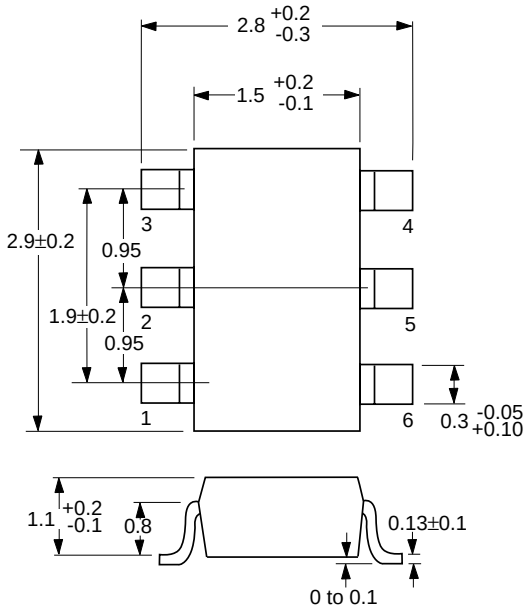
- **LOW VOLTAGE OPERATION:**
  V_{DD} = 3.3 V
- **LOW CURRENT OPERATION :**
  I_{DD} = 25 mA TYP @ V_{DD} = 3.3 V, f_{RF} = 824 to 849 MHz, P_{OUT}= +8 dBm
- **LOW DISTORTION:**
  P_{ADJ}1 =-38 dBc TYP @ V_{DD} = 3.3V, f_{RF} = 824 to 849 MHz, P_{OUT} = +8 dBm
- **6 PIN MINI-MOLD PACKAGE**

DESCRIPTION

The UPG173TA is an L-Band PA driver amplifier developed for digital cellular telephone and PCS TDMA applications. This device features high output power and low distortion with 3.3 V, 25 mA operation. It is housed in a very small 6 pin mini-mold package available on tape-and-reel.

OUTLINE DIMENSIONS (Units in mm)

PACKAGE OUTLINE T06



ELECTRICAL CHARACTERISTICS

(T_A = -35 to +75 °C, $V_{DD1,2}$ = +3.3 V, π/4DQPSK modulated signal input, external input and output matching unless otherwise specified)

PART NUMBER PACKAGE OUTLINE				UPG173TA T06		
SYMBOLS	**PARAMETERS AND CONDITIONS**		**UNITS**	**MIN**	**TYP**	**MAX**
f	Operating Frequency		MHz	824		849
G_P	Power Gain	P_{IN} = -22 dBm	dB	27	30	
I_{DD}	Total Current	P_{IN} = -22 dBm	mA		25	32
P_{ADJ1}	Adjacent Channel Power Leakage 1	P_{OUT}= +8 dBm Δf = ± 30 KHz	dBc		-38	-32
P_{ADJ2}	Adjacent Channel Power Leakage	P_{OUT} = +8 dBm Δf = ± 60 KHz	dBc		-60	-54
R_{LIN}	Input Return Loss		dB		10	
$R_{L\ OUT}$	Output Return Loss	Off-chip matching	dB		10	

ABSOLUTE MAXIMUM RATINGS[1] (T_A = 25°C)

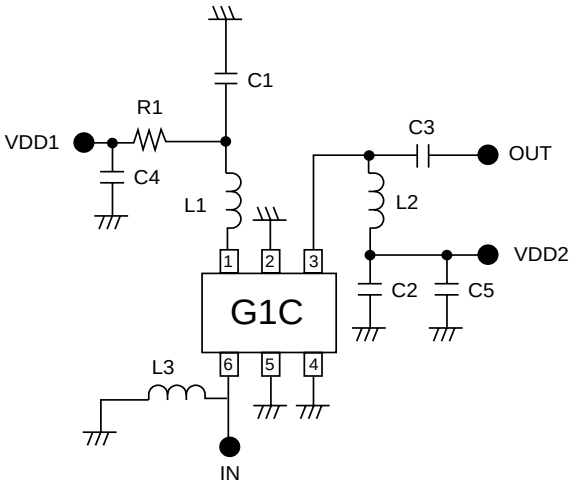
SYMBOLS	PARAMETERS	UNITS	RATINGS
$V_{DD1,2}$	Supply Voltage 1, 2	V	6.0
P_{IN}	Input Power	dBm	-8
P_T	Total Power Dissipation	mW	170[2]
T_{OP}	Operating Temperature	°C	-35 to +75
T_{STG}	Storage Temperature	°C	-35 to +150

Notes:
1. Operation in excess of any one of these parameters may result in permanent damage.
2. Mounted on a 50 x 50 x 1.6mm double copper clad epoxy glass PWB, T_A = +85 °C

RECOMMENDED OPERATING CONDITIONS

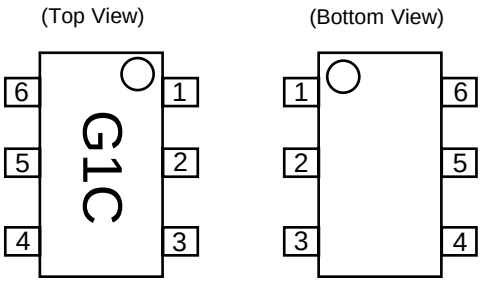
SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
$V_{DD1,2}$	Supply Voltage 1,2	V	+3.0	+3.3	+3.6
P_{IN}	Input Power	dBm		-22	

TYPICAL APPLICATION EXAMPLE



C1, C2, C4 ,C5	1000 pF
C3	2.2 pF
R1	10 Ω
L1	12 nH
L2, L3	10 nH

PIN CONNECTIONS AND INTERNAL BLOCK DIAGRAM



1. V_{DD1}
2. GND
3. V_{DD2} & Output
4. GND
5. GND
6. Input

ORDERING INFORMATION

PART NUMBER	QTY
UPG173TA-E3	3 K Per Reel