

PRELIMINARY DATA SHEET

NEC

**GaAs INTEGRATED CIRCUIT
L-BAND PA DRIVER AMPLIFIER**

UPG173TA

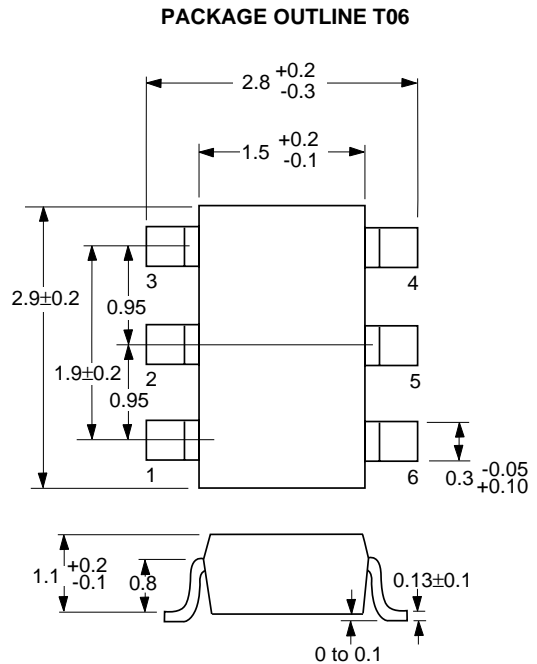
FEATURES

- **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:**
PADJ1 = -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)



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
GP	Power Gain	P _{IN} = -22 dBm	dB	27	30	
I _{DD}	Total Current	P _{IN} = -22 dBm	mA		25	32
PADJ1	Adjacent Channel Power Leakage 1	P _{OUT} = +8 dBm Δf = ± 30 KHz	dBc		-38	-32
PADJ2	Adjacent Channel Power Leakage	P _{OUT} = +8 dBm Δf = ± 60 KHz	dBc		-60	-54
RLIN	Input Return Loss		dB		10	
RL _{OUT}	Output Return Loss	Off-chip matching	dB		10	

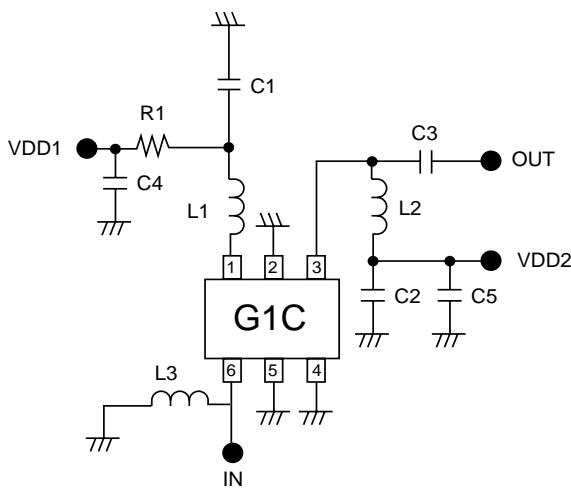
ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

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

TYPICAL APPLICATION EXAMPLE

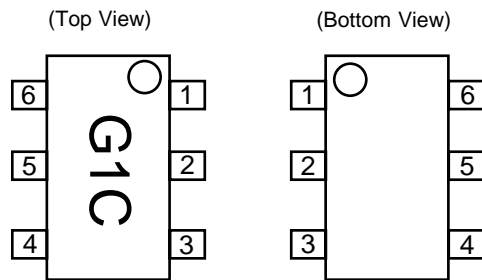


C1, C2, C4, C5	1000 pF
C3	2.2 pF
R1	10 Ω
L1	12 nH
L2, L3	10 nH

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	

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