查询UPC8204TK供应商

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OUTLINE DIMENSIONS (Units in mm)

CEL

NEC's VARIABLE GAIN AMPLIFIER

UPC8204TK

FEATURES

- **OPERATING FREQUENCY:** f = 0.8 GHz to 2.5 GHz
- MAXIMUM POWER GAIN: GPMAX = 14.5 dB TYP at f = 1.9 GHz GPMAX = 14.0 dB TYP at f = 2.4 GHz
- GAIN CONTROL RANGE: GCR = 40 dB TYP at f = 1.9 GHz GCR = 40 dB TYP at f = 2.4 GHz
- **SUPPLY VOLTAGE:** Vcc = 2.7 to 3.3 V
- HIGH DENSITY SURFACE MOUNTING: 6-pin Lead-less minimold package

APPLICATION

- 0.8 GHz to 2.5 GHz transmitter/receiver systems
- PHS/PCS/Mobile Communication
- WLAN
- Cordless Phone
- Fixed Wireless Service

DESCRIPTION

.5±0.1

5+0.03

0.48

NEC's UPC8204TK is a silicon monolithic integrated circuit designed as variable gain amplifier. The package is 6-pin lead-less minimold suitable for surface mount.

0.11±+0.1

This IC is manufactured using NEC's 30 GHz fmax UHS0 (<u>U</u>ltra <u>High Speed Process</u>) silicon bipolar process.

This IC has the same circuit current as conventional UPC8119T and UPC8120T, but it operates at higher frequency and features a wider gain control range.

ELECTRICAL CHARACTERISTICS,

(Unless otherwise specified, $T_A = +25^{\circ}C$, $V_{CC} = V_{OUT} = 3.0 \text{ V}$, $Z_S = Z_L = 50\Omega$, External matched output port)

-Ne	STR.	UPC8204TK TK				
SYMBOLS	PARA	METERS AND CONDITIONS	UNITS	MIN	ТҮР	MAX
lcc	Circuit Current (no si	gnal)	mA	8.5	11.5	15.0
Gpmax	Maximum Power Gain,	f = 1.9 GHz, PIN = -20 dBm f = 2.4 GHz, PIN = -20 dBm	dB	11.5 11.0	14.5 14.0	17.5 17.0
GCR	Gain Control Range (note 1)	f = 1.9 GHz, PIN = -20 dBm f = 2.4 GHz, PIN = -20 dBm	dB	35 35	40 40	
Po(1dB)	1 dB Compression Output Power,	f = 1.9 GHz, Gрмах f = 2.4 GHz, Gрмах	dBm	+2.0 +2.0	+5.0 +5.0	-
RLIN	Input Return Loss,	f = 1.9 GHz, Gрмах f = 2.4 GHz, Gрмах	dB	8 9	11 13	_
ISL	Isolation,	f = 1.9 GHz, Gрмах f = 2.4 GHz, Gрмах	dB	25 25	30 30	-
NF	Noise Figure,	f = 1.9 GHz, Gрмах f = 2.4 GHz, Gрмах	dB	_	7.5 7.5	10.0 10.0

Notes: PDF 1. Gain control range GCR specification: CCR - GPMAX - GPMIN (dB) Conditions GPMAX at VAGC = Vcc, GPMIN at VAGC = 0 V

CREGORANCE CONDITIONS GPMAX at VAGC = VCC, GPMIN at VAGC = 0 V

California Fastern Laboratories

UPC8204TK

ABSOLUTE MAXIMUM RATINGS¹ (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
Vcc	Supply Voltage TA = 25°C	V	3.6
Icc	Total Circuit Current TA = 25°C	mW	30
VAGC	Gain Control Voltage TA = 25°C	V	3.6
PD	Power Dissipation TA = 85°C (note)	mW	203
TA	Operating Ambient Temperature	°C	-40 to +85
Tstg	Storage Temperature	°C	-55 to +150
Pin	Input Power	dBm	+5

RECOMMENDED OPERATING CONDITIONS

SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
Vcc	Supply Voltage	V	2.7	3.0	3.3
TA	Operating Ambient Temperature	°C	-40	+25	+85
fin	Operating Frequency Range	GHz	0.8	-	2.5
VAGC	Gain Control Voltage	V	0	-	3.3

Notes:

1. Mounted on a 50 x 50 x 1.6 mm epoxy glass PWB (TA = +85°C).

SERIES PRODUCTS

Parameter			GHz outp hing free		1	GHz outpo hing freq			GHz outpu hing freq			lz output ng frequ	•
	Icc	G рмах	GCR	NF	Gрмах	GCR	NF	GPMAX	GCR	NF	GPMAX	GCR	NF
Part No.	(mA)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)			
UPC8119T	11.0	12.5	50	8.5	13.0	45	7.5	(12.5)	(22)	(7.2)	-	-	_
UPC8120T	11.0	13.0	50	9.0	13.5	45	7.5	(13.0)	(22)	(7.3)	_	_	_
UPC8204TK	11.5	-	-	_	_	-	_	14.0	40	7.5	14.0	35	7.5

Note:

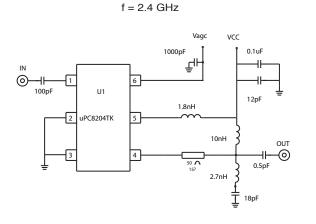
1. Typical performance. Please refer to Electrical Charateristics in detail.

(): Reference

PIN FUNCTIONS

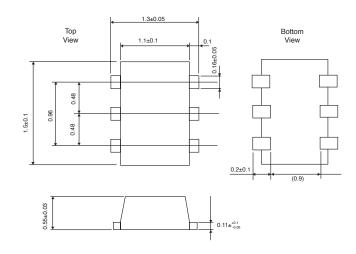
Pin No.	Symbol	Applied Voltage	Pin Voltage	Description	Equivalent Circuit
1	INPUT	_	1.2	RF input pin This pin should be coupled with capacitor (eg 1000 pF) for DC cut. Input return loss can be improved with external impedance matching circuit.	
2 3	GND	0	_	Ground pin. This pin should be connected to system ground with minimum inductance. Ground pattern on the board should be formed as wide as possible. Ground pins must be connected together with wide ground pattern to decrease impedance difference.	GROUND CIRCUIT
4	OUTPUT	Voltage as same as Vcc through external inductor	_	RF output pin. This pin is designed as open collector of high impedance. This pin must be externally equipped with matching circuits.	(2) (3) GND
5	Vcc	2.7~3.3	_	Supply voltage pin. this pin must be equipped with bypass capacitor (eg 1000 pF) to minimize its RF impedance.	5
6	Vagc	0~3.3	_	Gain control pin.	

APPLICATION CIRCUIT

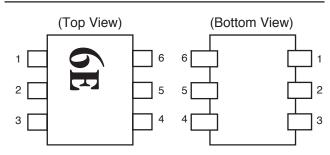


OUTLINE DIMENSIONS (Units in mm)

6-PIN LEAD-LESS MINIMOLD



PIN CONNECTIONS



PIN NO.	PIN NAME
1	INPUT
2	GND
3	GND
4	OUTPUT
5	Vcc
6	VAGC

ORDERING INFORMATION

PART NUMBER	PACKAGE	PACKING INFORMATION
UPC8204TK-E2-A	ТК	6-pin lead-less minimold

Note:

To order evaluation samples, contact sales office (p/n: UPC8204TK).

Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.

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4590 Patrick Henry Drive Santa Clara, CA 95054-1817 Telephone: (408) 919-2500 Facsimile: (408) 988-0279

Subject: Compliance with EU Directives

CEL certifies, to its knowledge, that semiconductor and laser products detailed below are compliant with the requirements of European Union (EU) Directive 2002/95/EC Restriction on Use of Hazardous Substances in electrical and electronic equipment (RoHS) and the requirements of EU Directive 2003/11/EC Restriction on Penta and Octa BDE.

CEL Pb-free products have the same base part number with a suffix added. The suffix –A indicates that the device is Pb-free. The –AZ suffix is used to designate devices containing Pb which are exempted from the requirement of RoHS directive (*). In all cases the devices have Pb-free terminals. All devices with these suffixes meet the requirements of the RoHS directive.

This status is based on CEL's understanding of the EU Directives and knowledge of the materials that go into its products as of the date of disclosure of this information.

Restricted Substance per RoHS	Concentration Limit per RoHS (values are not yet fixed)	Concentration contained in CEL devices		
Lead (Pb)	< 1000 PPM	-A Not Detected	-AZ (*)	
Mercury	< 1000 PPM	Not Detected		
Cadmium	< 100 PPM	Not Detected		
Hexavalent Chromium	< 1000 PPM	Not De	etected	
РВВ	< 1000 PPM	Not De	etected	
PBDE	< 1000 PPM	Not De	etected	

If you should have any additional questions regarding our devices and compliance to environmental standards, please do not hesitate to contact your local representative.

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