# **OKI** electronic components

# **KGF2441**

**AGC Amplifier** 

#### **GENERAL DESCRIPTION**

The KGF2441 is a GaAs FET AGC amplifier offering a wide dynamic range of  $\geq 80$  dB. With control over a +30 dB (max.) to -50 dB (min.) range at 130 MHz, the device also provides excellent gain slope linearity. The KGF2441 operates with a single 5-V power supply with a low current operation of 5 mA (typ.) The device is particularly suited to IF-stage amplifier applications, such as portable handy phones based on CDMA-type digital cellular technology operating over wide dynamic ranges.

#### **FEATURES**

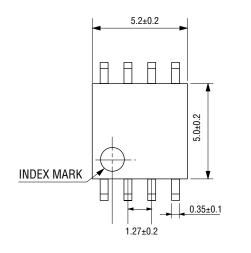
• Wide dynamic range: 80 dB (min.)

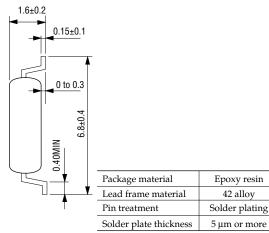
• Excellent gain slope linearity for AGC voltage

• Low current operation: 5 V, 5 mA (typ.)

• Package: 8PSOP

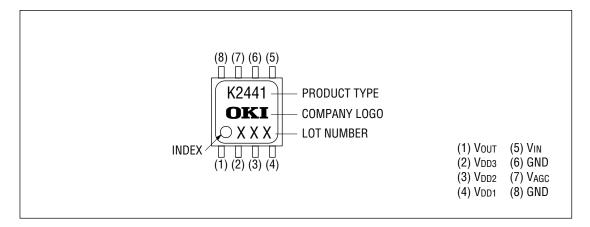
#### PACKAGE DIMENSIONS



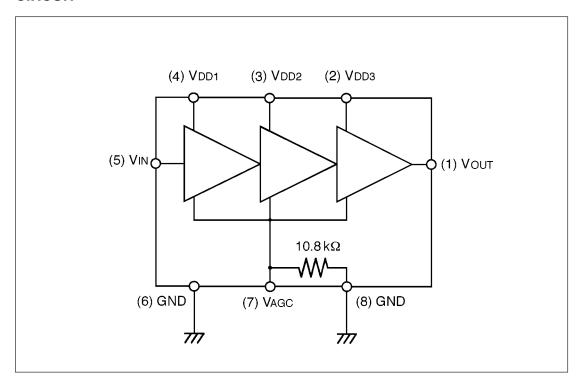


(Unit: mm)

#### **MARKING**



#### **CIRCUIT**



# **ABSOLUTE MAXIMUM RATINGS**

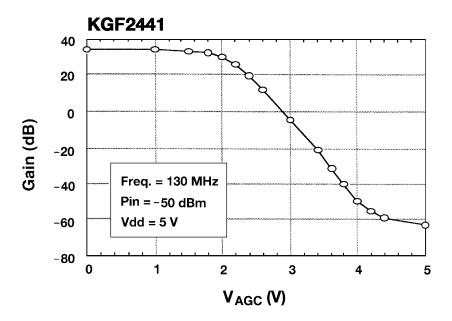
Item	Symbol	Condition	Unit	Min.	Max.	
Supply voltage 1	V <sub>DD1</sub>	Ta = 25°C	V	_	5.5	
Supply voltage 2	V <sub>DD2</sub>	Ta = 25°C	V	_	5.5	
Supply voltage 3	V <sub>DD3</sub>	Ta = 25°C	V	_	5.5	
Gain control voltage	V <sub>AGC</sub>	Ta = 25°C	V	0	V <sub>DD</sub> –2	
Input voltage	V <sub>IN</sub>	Ta = 25°C	V	-3	0.4	
Output voltage	V <sub>OUT</sub>	Ta = 25°C	V	V <sub>DD</sub> /2-0.4	V <sub>DD</sub> /2+3 or V <sub>DD</sub>	
Total power dissipation	P <sub>tot</sub>	Ta = 25°C	mW	_	200	
Storage temperature	T <sub>stg</sub>	_	°C	-45	125	

## **ELECTRICAL CHARACTERISTICS**

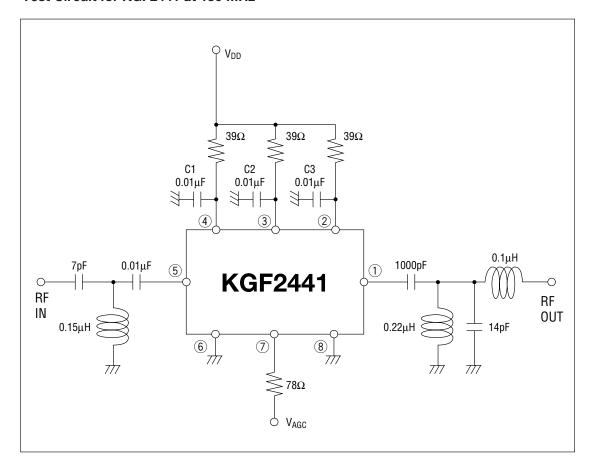
Ta = 25°C , f = 130 MHz ,  $V_{DD} = 5$  V

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Item	Symbol	Condition	Unit	Min.	Тур.	Max.
Maximum gain	G <sub>MAX</sub>	V <sub>AGC</sub> = 0 V	dB	30	_	_
Minimum gain	G <sub>MIN</sub>	V <sub>AGC</sub> = 5 V	dB	_	_	-50
Output IP <sub>3</sub>	IP <sub>3</sub>	V <sub>AGC</sub> = 0 V, f <sub>L0</sub> =129 MHz	dBm	_	-4.5	_
Noise figure	F	V <sub>AGC</sub> = 0 V	dB	_	_	10
Supply current	I <sub>DD</sub>	V <sub>AGC</sub> = 0 V	mA	_	5	10
Input impedance	Z <sub>IN</sub>	V <sub>AGC</sub> = 0 V	Ω	800	_	1200
Output impedance	Z <sub>OUT</sub>	V <sub>AGC</sub> = 0 V	Ω	_	175	_

### RF CHARACTERISTICS



#### Test Circuit for KGF2441 at 130 MHz



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