

# OKI electronic components

## KGF2441

### AGC Amplifier

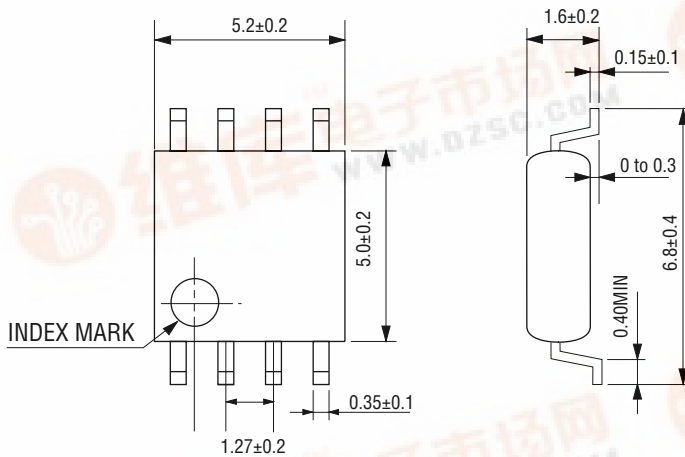
#### GENERAL DESCRIPTION

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

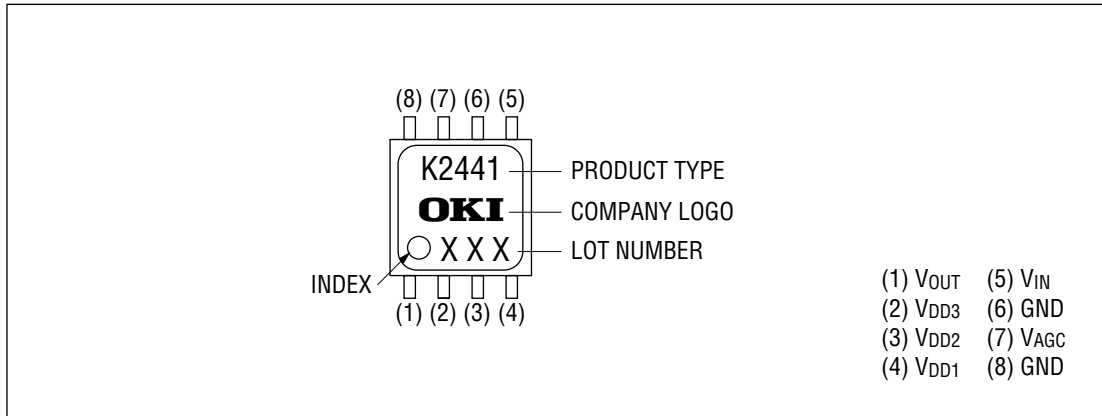
#### PACKAGE DIMENSIONS



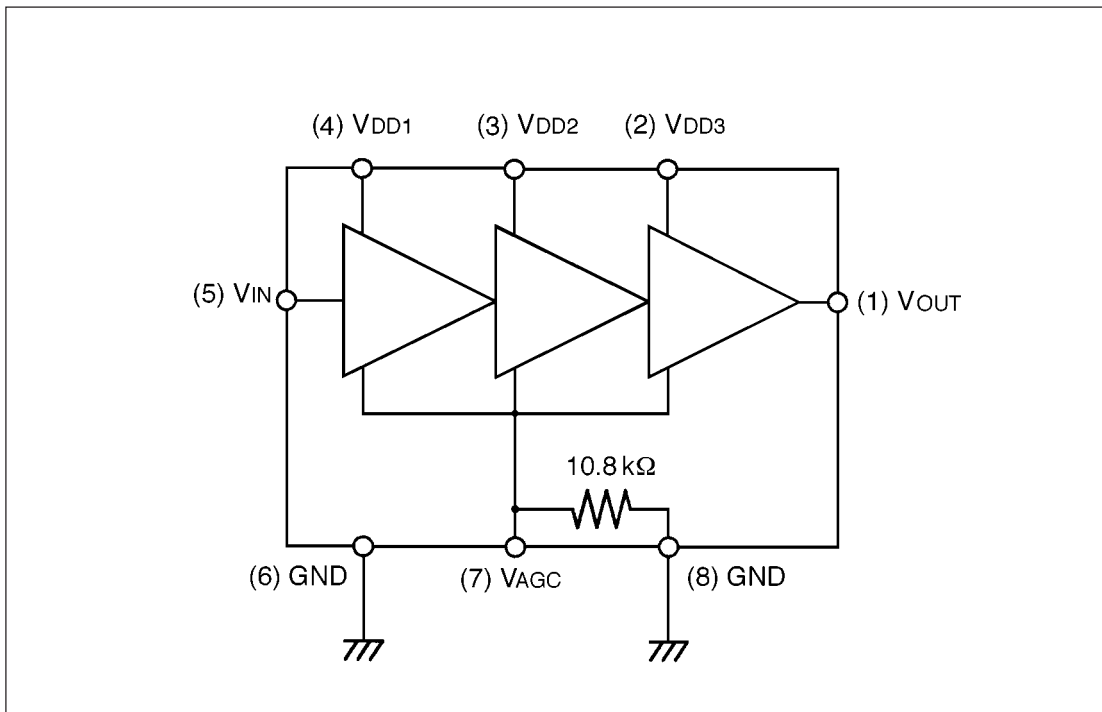
(Unit: mm)

Package material	Epoxy resin
Lead frame material	42 alloy
Pin treatment	Solder plating
Solder plate thickness	5 $\mu$ m or more

**MARKING**



**CIRCUIT**



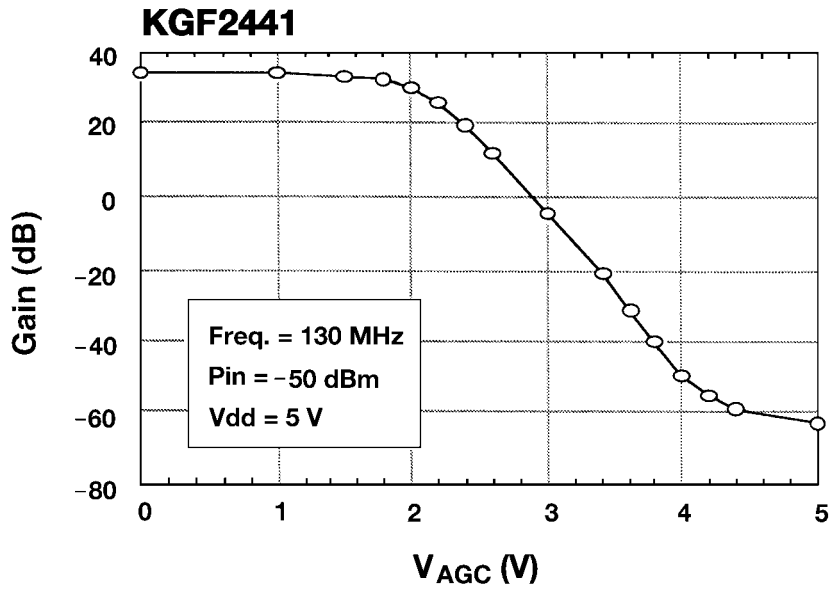
**ABSOLUTE MAXIMUM RATINGS**

Item	Symbol	Condition	Unit	Min.	Max.
Supply voltage 1	$V_{DD1}$	$T_a = 25^\circ\text{C}$	V	—	5.5
Supply voltage 2	$V_{DD2}$	$T_a = 25^\circ\text{C}$	V	—	5.5
Supply voltage 3	$V_{DD3}$	$T_a = 25^\circ\text{C}$	V	—	5.5
Gain control voltage	$V_{AGC}$	$T_a = 25^\circ\text{C}$	V	0	$V_{DD}-2$
Input voltage	$V_{IN}$	$T_a = 25^\circ\text{C}$	V	-3	0.4
Output voltage	$V_{OUT}$	$T_a = 25^\circ\text{C}$	V	$V_{DD}/2-0.4$	$V_{DD}/2+3$ or $V_{DD}$
Total power dissipation	$P_{tot}$	$T_a = 25^\circ\text{C}$	mW	—	200
Storage temperature	$T_{stg}$	—	$^\circ\text{C}$	-45	125

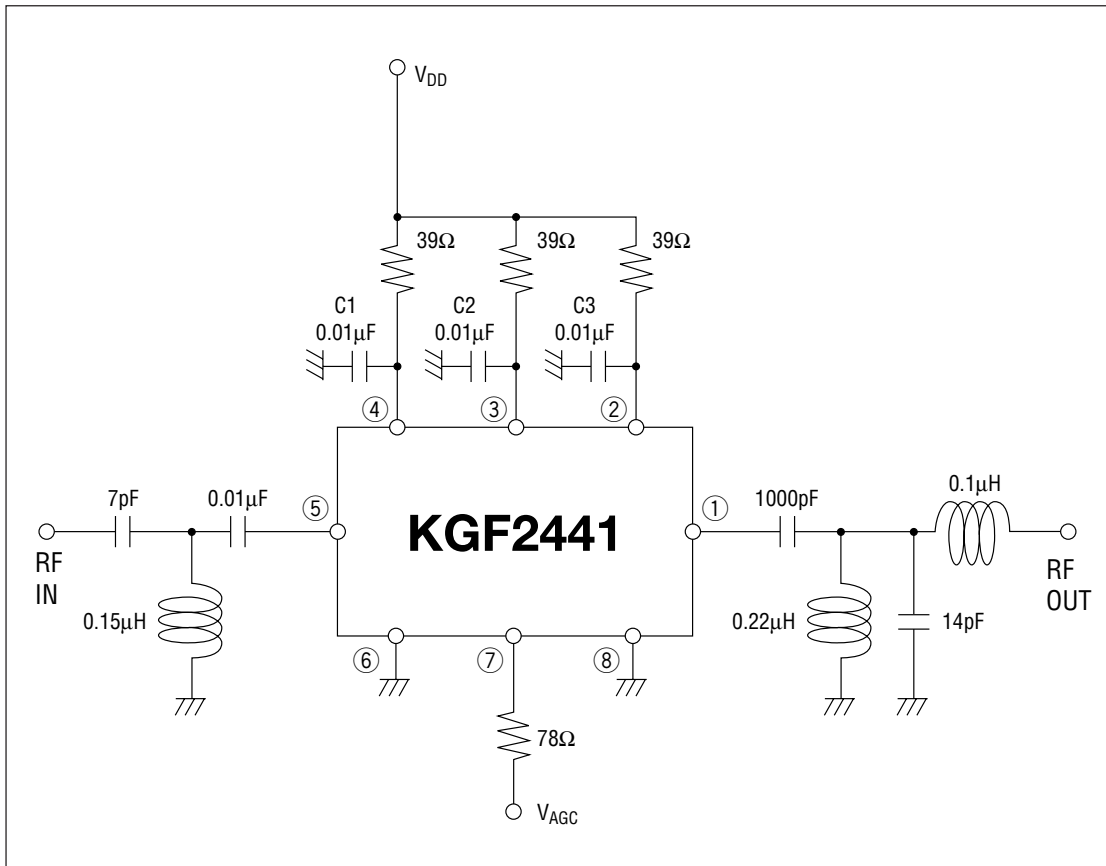
**ELECTRICAL CHARACTERISTICS** $T_a = 25^\circ\text{C}$ ,  $f = 130\text{ MHz}$ ,  $V_{DD} = 5\text{ V}$ 

Item	Symbol	Condition	Unit	Min.	Typ.	Max.
Maximum gain	$G_{MAX}$	$V_{AGC} = 0\text{ V}$	dB	30	—	—
Minimum gain	$G_{MIN}$	$V_{AGC} = 5\text{ V}$	dB	—	—	-50
Output $IP_3$	$IP_3$	$V_{AGC} = 0\text{ V}$ , $f_{LO} = 129\text{ MHz}$	dBm	—	-4.5	—
Noise figure	F	$V_{AGC} = 0\text{ V}$	dB	—	—	10
Supply current	$I_{DD}$	$V_{AGC} = 0\text{ V}$	mA	—	5	10
Input impedance	$Z_{IN}$	$V_{AGC} = 0\text{ V}$	$\Omega$	800	—	1200
Output impedance	$Z_{OUT}$	$V_{AGC} = 0\text{ V}$	$\Omega$	—	175	—

RF CHARACTERISTICS



Test Circuit for KGF2441 at 130 MHz



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