This version: Dec. 2001
Previous version: Feb. 1999

OKI electronic components

KGF2441

AGC Amplifier

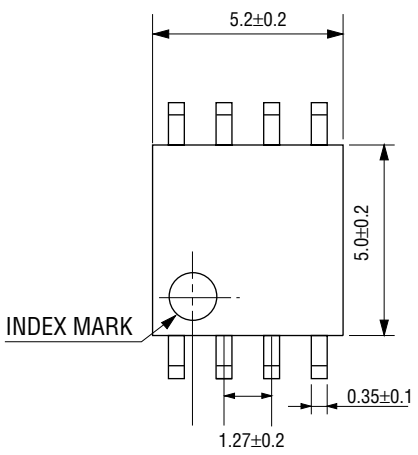
GENERAL DESCRIPTION

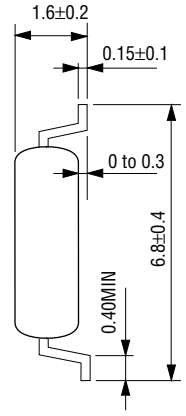
The KGF2441 is a GaAs FET AGC amplifier offering a wide dynamic range of ≥80 dB. With control over a +30 dB (max.) to –50 dB (min.) range at 130 MHz, the device also provides excellent gain slope linearity. The KGF2441 operates with a single 5-V power supply with a low current operation of 5 mA (typ.) 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

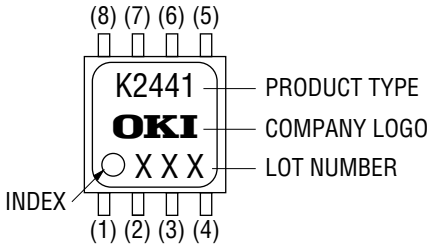




Package material	Epoxy resin
Lead frame material	42 alloy
Pin treatment	Solder plating
Solder plate thickness	5 µm or more

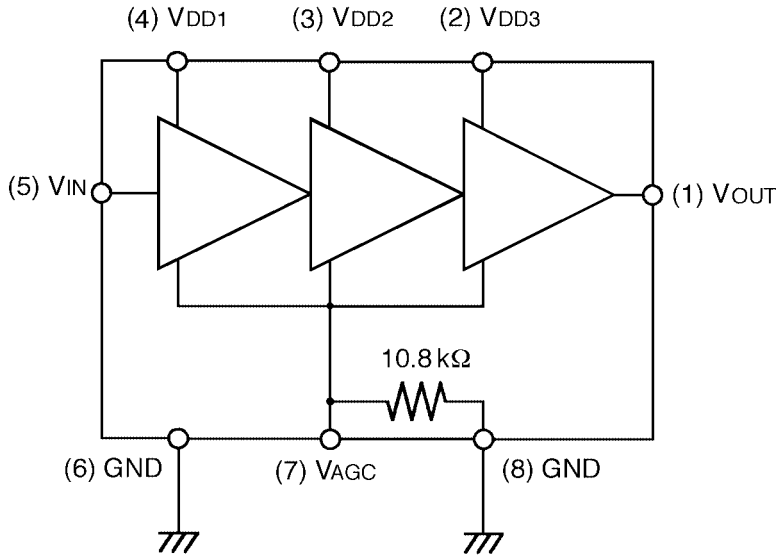
(Unit: mm)

MARKING



(1) V_{OUT} (5) V_{IN}
(2) V_{DD3} (6) GND
(3) V_{DD2} (7) V_{AGC}
(4) V_{DD1} (8) GND

CIRCUIT



ABSOLUTE MAXIMUM RATINGS

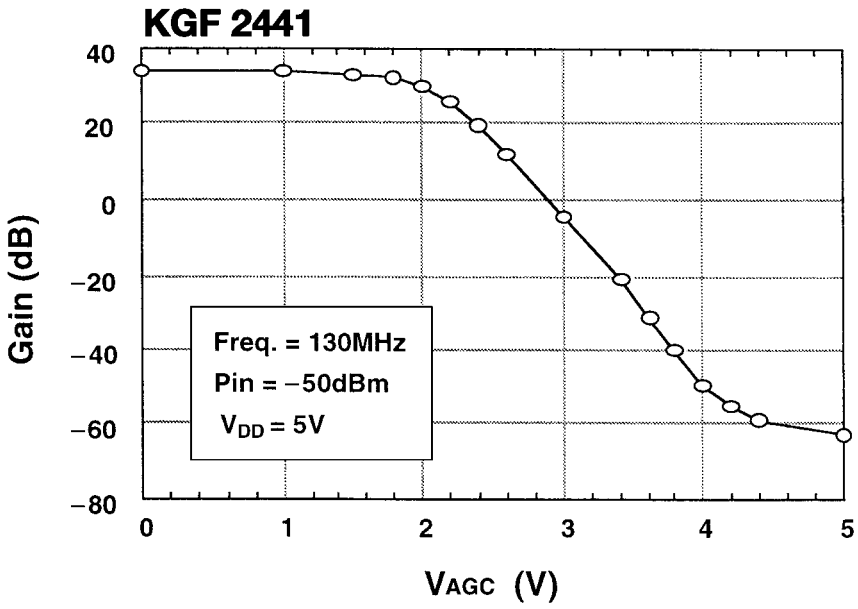
Item	Symbol	Condition	Unit	Min.	Max.
Supply voltage 1	V_{DD1}	Ta = 25°C	V	—	5.5
Supply voltage 2	V_{DD2}	Ta = 25°C	V	—	5.5
Supply voltage 3	V_{DD3}	Ta = 25°C	V	—	5.5
Gain control voltage	V_{AGC}	Ta = 25°C	V	0	V_{DD}
Input voltage	V_{IN}	Ta = 25°C	V	–3	0.4
Output voltage	V_{OUT}	Ta = 25°C	V	V_{DD}/2–0.4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

ELECTRICAL CHARACTERISTICS

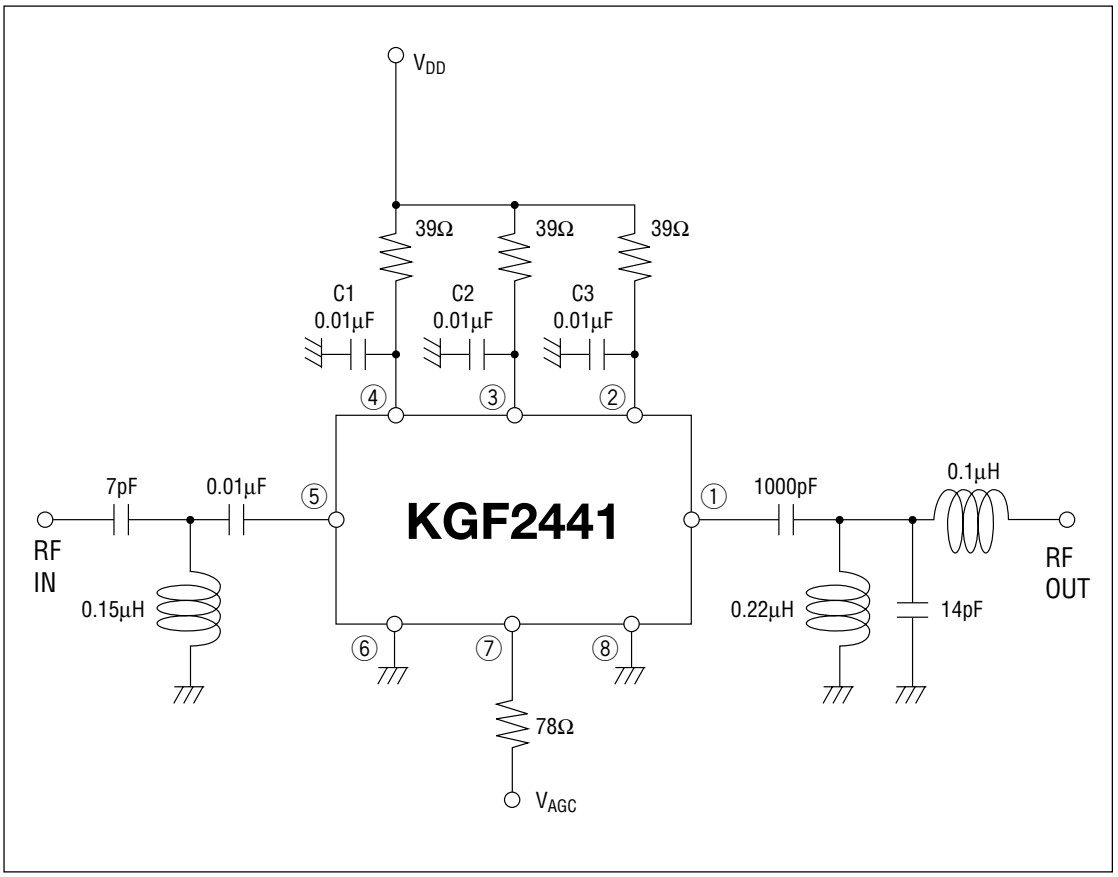
Ta = 25°C , f = 130 MHz , V_{DD} = 5 V

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

RF CHARACTERISTICS



Test Circuit for KGF2441 at 130 MHz



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