

OKI electronic components

KGF2702

Wide-Band Amplifier

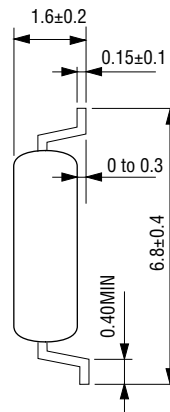
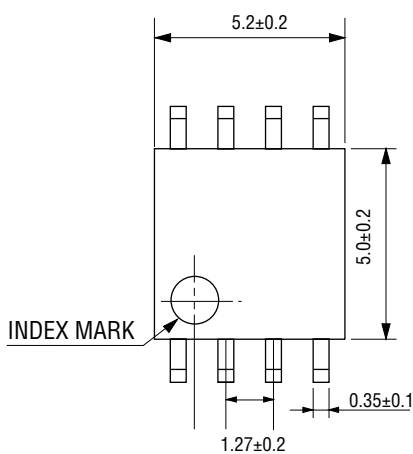
GENERAL DESCRIPTION

The KGF2702, housed in an 8-pin SOP plastic package, is a two-stage amplifier that features flat and high gain over a wide range of frequencies, internal input and output matching, and high output power. The internally matched 50 Ω input and output eliminate external impedance-matching circuits. The KGF2702 is ideal as a medium-power amplifier in the 0.8 to 4 GHz frequency range .

FEATURES

- Flat gain property from 0.8 GHz to 4 GHz
- Input and output 50 Ω matched impedance
- Single power supply: 5 V (typ.)
- High linear gain: 15.5 dB (min.)
- High output power: 14 dBm (min.)
- Low noise: 5 dB (typ.)
- Package: 8PSOP

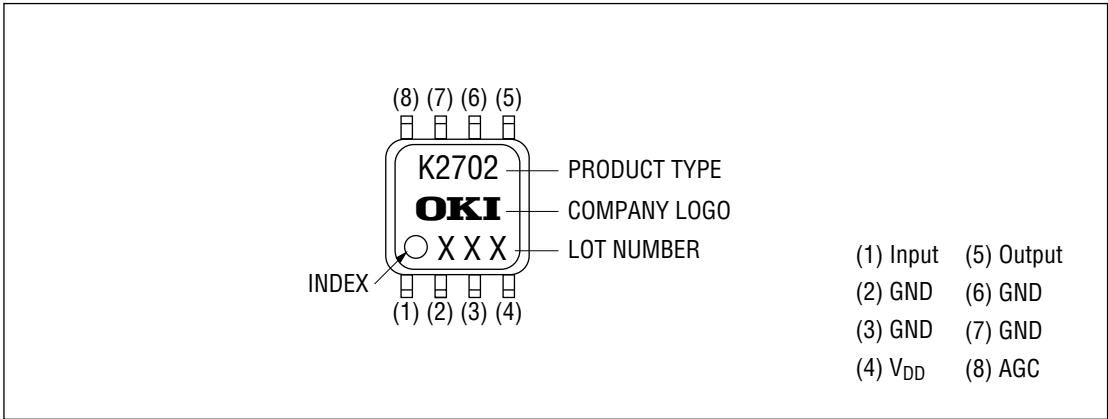
PACKAGE DIMENSIONS



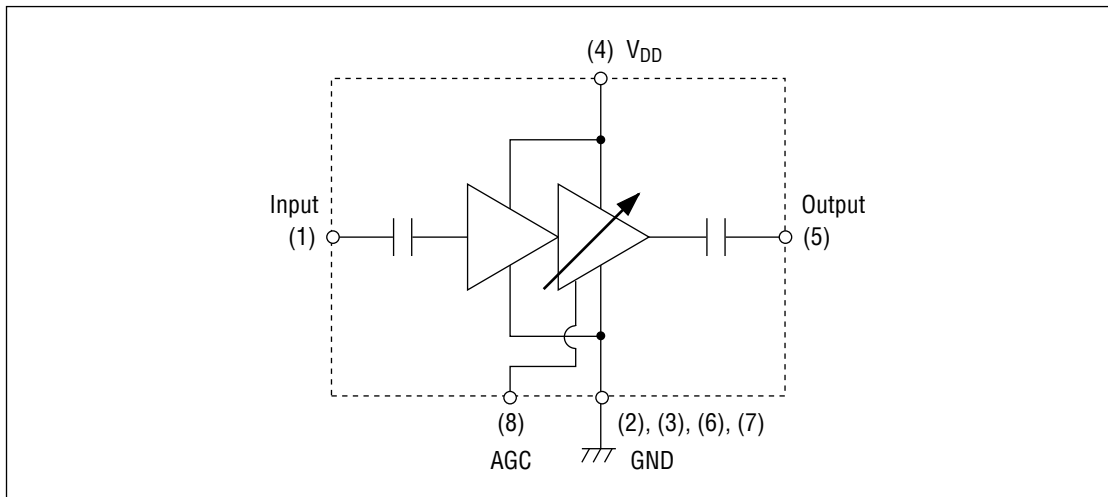
Package material	Epoxy resin
Lead frame material	42 alloy
Pin treatment	Solder plating
Solder plate thickness	5 μ m or more

(Unit: mm)

MARKING



CIRCUIT



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Condition	Unit	Min.	Max.
Supply voltage	V_{DD}	$T_a = 25^\circ\text{C}$	V	—	8
Input power	P_{IN}	$T_a = 25^\circ\text{C}$	dBm	—	6
Total power dissipation	P_{tot}	$T_a = 25^\circ\text{C}$	mW	—	TBD
Channel temperature	T_{ch}	—	$^\circ\text{C}$	—	150
Storage temperature	T_{stg}	—	$^\circ\text{C}$	-45	125

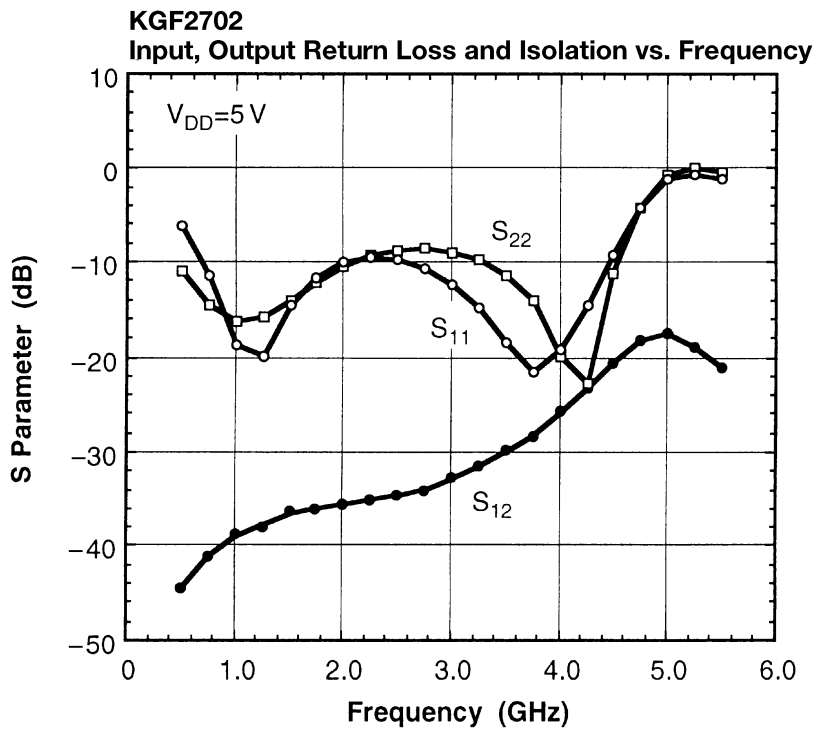
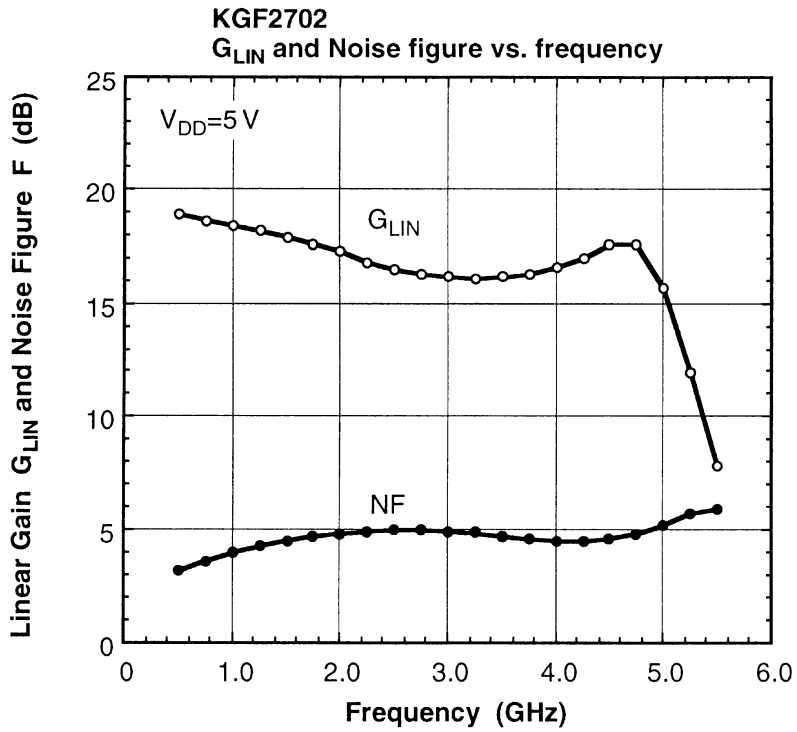
ELECTRICAL CHARACTERISTICS

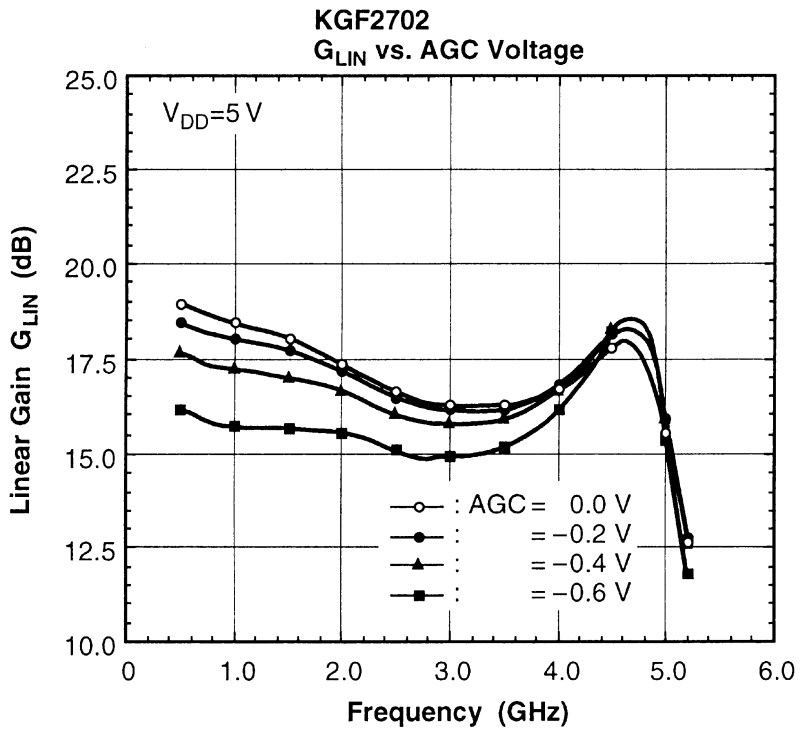
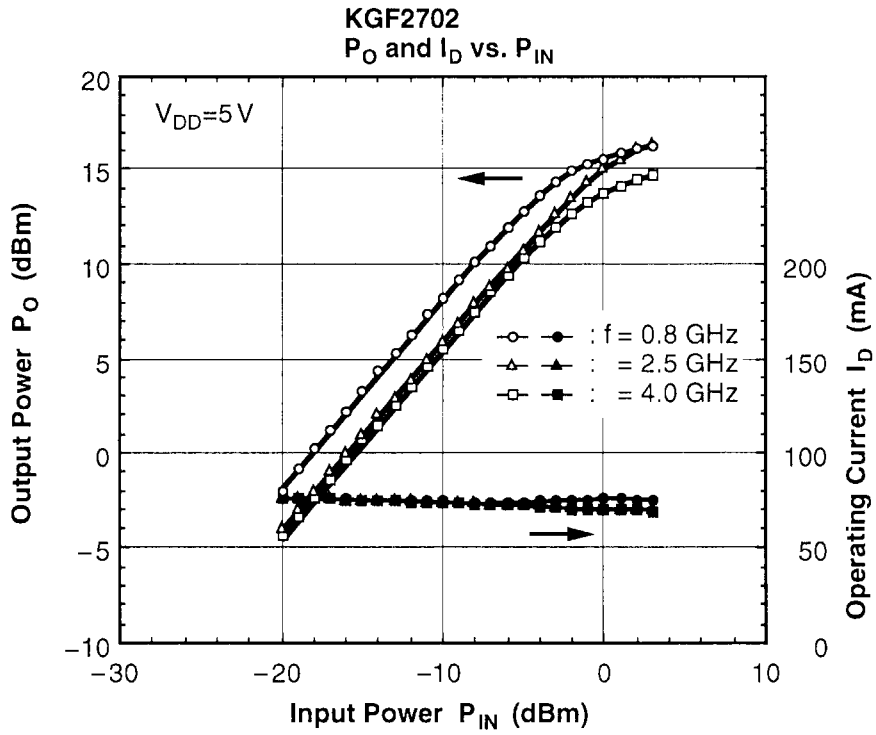
(Ta = 25°C)

Item	Symbol	Condition	Unit	Min.	Typ.	Max.
Operating current	I_{DD}	(*1), $P_{IN} = -20$ dBm $f = 2.5$ GHz	mA	—	70	90
Isolation	$ S_{12} $		dB	—	-30	-25
Linear gain	G_{LIN}	(*1), $P_{IN} = -20$ dBm $f = 0.8$ GHz	dB	15.5	17.0	—
Gain flatness	ΔG		dB	—	2.5	3.0
Input return loss	$ S_{11} $	$f = 2.5$ GHz	dB	—	-10	—
Output return loss	$ S_{22} $	$f = 4.0$ GHz	dB	—	-9	—
Output power	P_{O1}	(*1), $f = 2.5$ GHz	dBm	14	15	—
Noise figure	F		dB	—	5.0	—
Third-order intercept point	IP_3		dBm	—	25	—
Thermal resistance	R_{th}	Channel to case	$^\circ\text{C}/\text{W}$	—	TBD	—

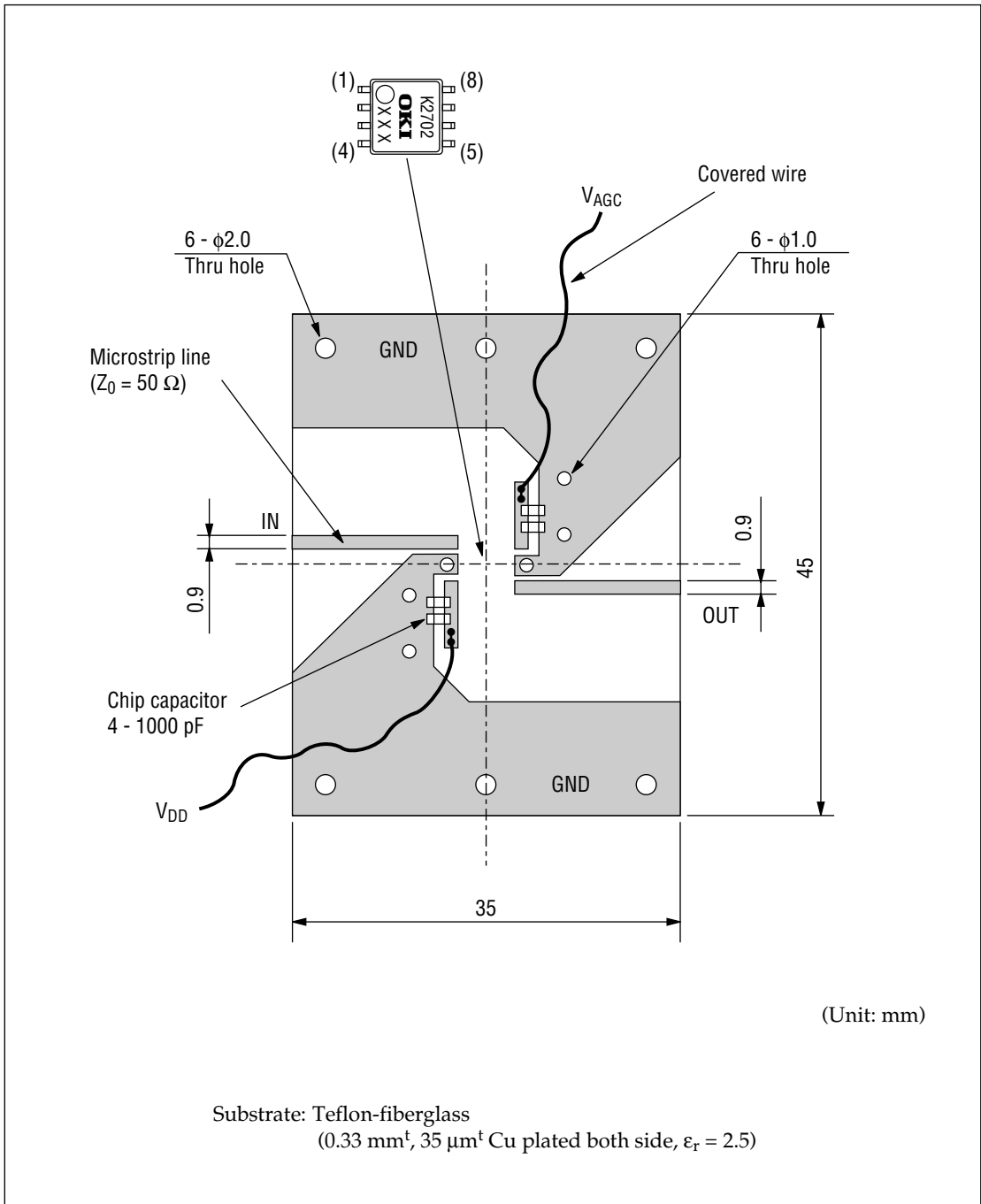
*1 Self-bias condition: $V_{DD} = 5.0$ V, $V_{AGC} = 0$ V

RF CHARACTERISTICS



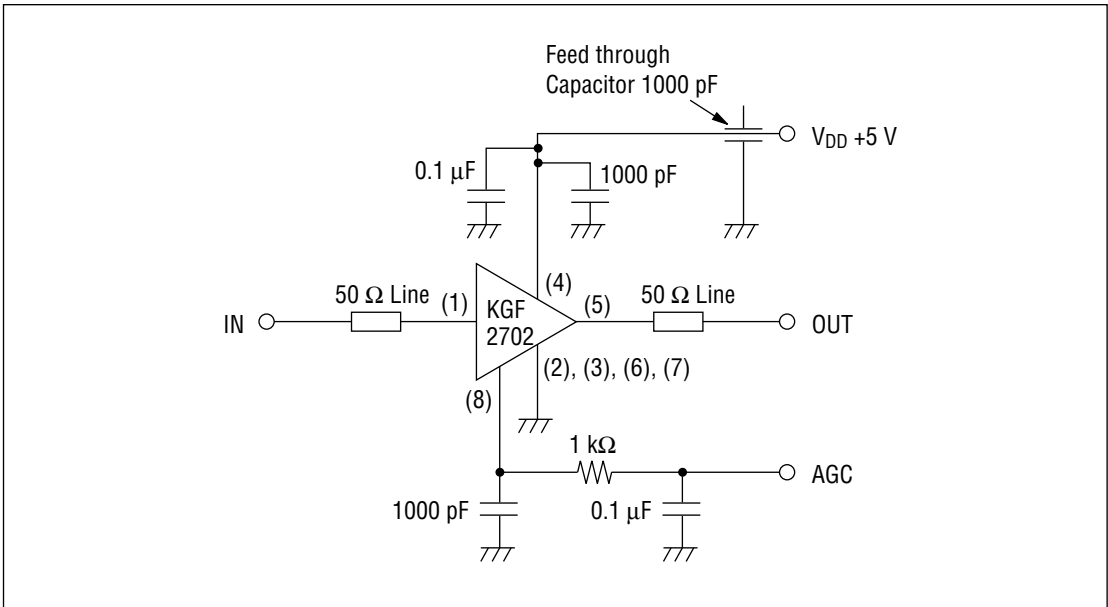


Test Circuit Board for KGF2702



Application Note

Example 1: Single-stage Amplifier with AGC



Example 2: Two-stage Amplifier

