

# OKI electronic components

## KGF1265

### Medium-Power Amplifier

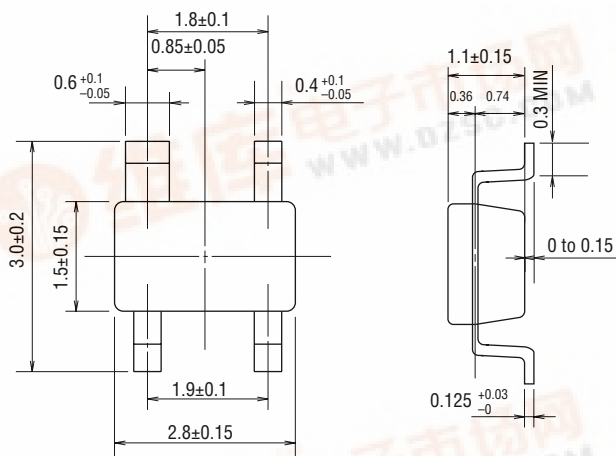
#### GENERAL DESCRIPTION

The KGF1265 is a medium-power amplifier, with frequencies ranging from the UHF-band, that features high output power, low distortion, and low current operation. The KGF1265 specifications are guaranteed to a fixed matching circuit for 3 V and 900 MHz band; external impedance-matching circuits are also required. Because of the high output power and low distortion at the low operating current, the KGF1265 is ideal as a transmitter-driver amplifier for portable phones such as PDC and CDMA.

#### FEATURES

- High output power: 11 dBm (min.)
- Low voltage and low current operation: 3 V, 18 mA (max.)
- Low distortion (ACP): -55 dBc (max) @ $P_O = 8\text{dBm}$ ,  $\pi/4\text{DQPSK}$ ,  $\pm 50\text{ kHz}$
- Self-bias circuit configuration with built-in source capacitor
- package: 4PSOP

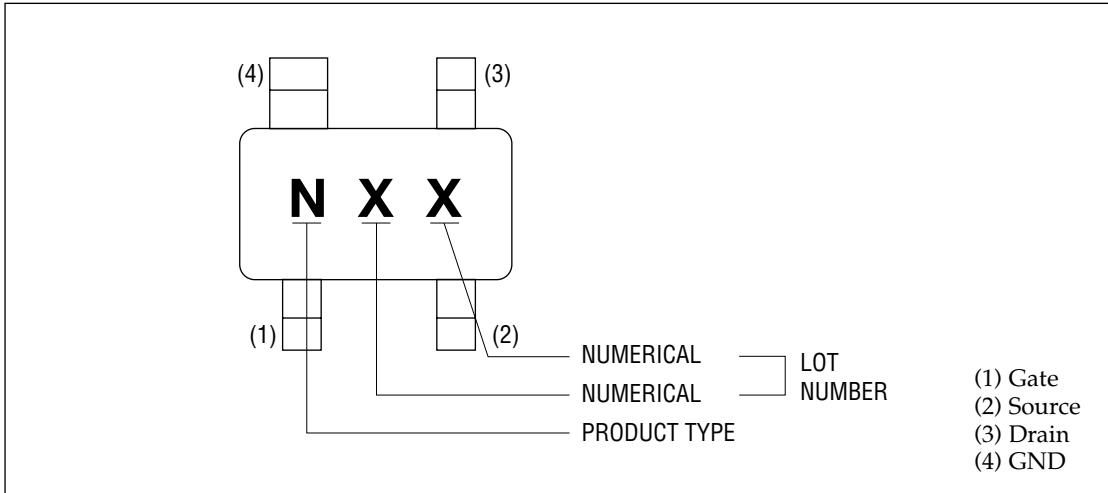
#### PACKAGE DIMENSIONS



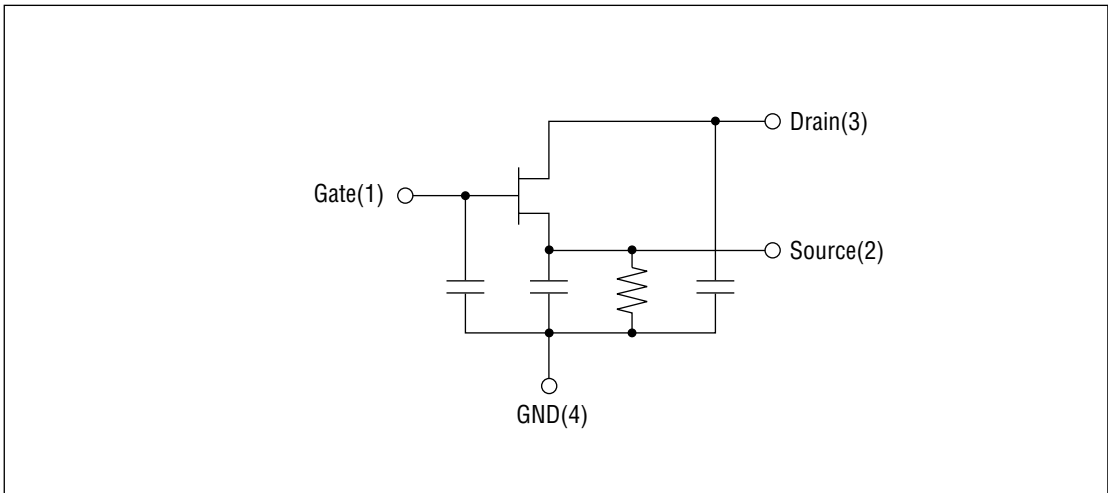
(Unit: mm)

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

**MARKING**



**CIRCUIT**



**ABSOLUTE MAXIMUM RATINGS**

Item	Symbol	Condition	Unit	Min.	Max.
Drain-source voltage	$V_{DS}$	$T_a = 25^\circ\text{C}$	V	—	8
Gate-source voltage	$V_{GS}$	$T_a = 25^\circ\text{C}$	V	-3.0	0.4
Drain current	$I_{DS}$	$T_a = 25^\circ\text{C}$	mA	—	28
Total power dissipation	$P_{tot}$	$T_a = 25^\circ\text{C}$	mW	—	200
Channel temperature	$T_{ch}$	—	$^\circ\text{C}$	—	150
Operating temperature	$T_{ope}$	—	$^\circ\text{C}$	-35	85
Storage temperature	$T_{stg}$	—	$^\circ\text{C}$	-45	125

**ELECTRICAL CHARACTERISTICS**

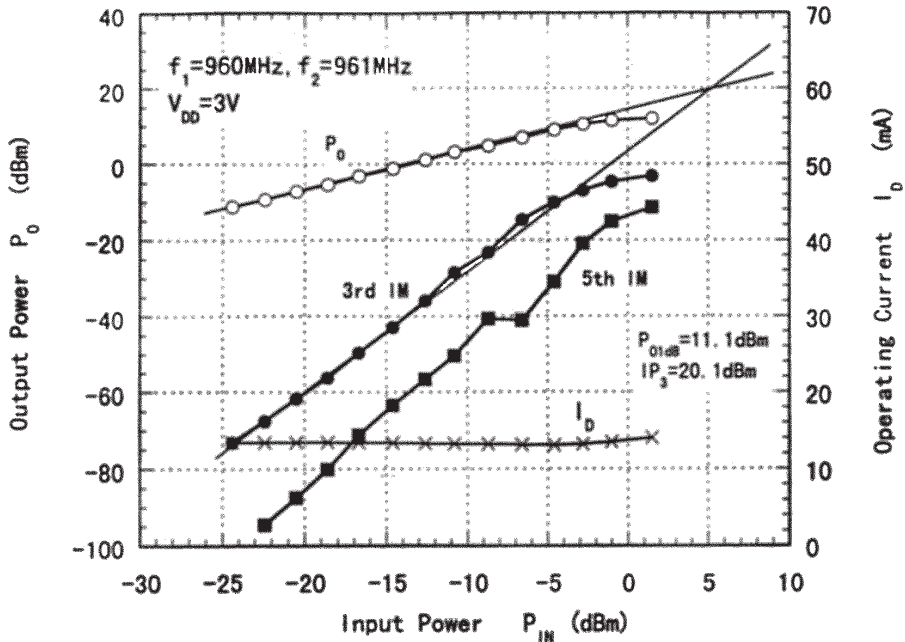
(Ta = 25°C)

Item	Symbol	Condition	Unit	Min.	Typ.	Max.
Frequency	f		MHz	889	—	960
Operating current	$I_D$	(*1), $P_{IN} = 0$ dBm	mA	—	—	18.0
Linear gain	$G_{LIN}$	(*1), $P_{IN} = -20$ dBm	dB	13.0	15.0	—
Output power	$P_O$	(*1), $P_{IN} = 0$ dBm	dBm	11.0	12.5	—
Adjacent Channel Power 1	ACP1	(*1), $P_O = 8$ dBm, $\pm 50$ kHz offset	dBc	—	-60	-55
Adjacent Channel Power 2	ACP2	(*1), $P_O = 8$ dBm, $\pm 100$ kHz offset	dBc	—	-70	-65
Noise figure	F	(*1)	dB	—	—	3.0

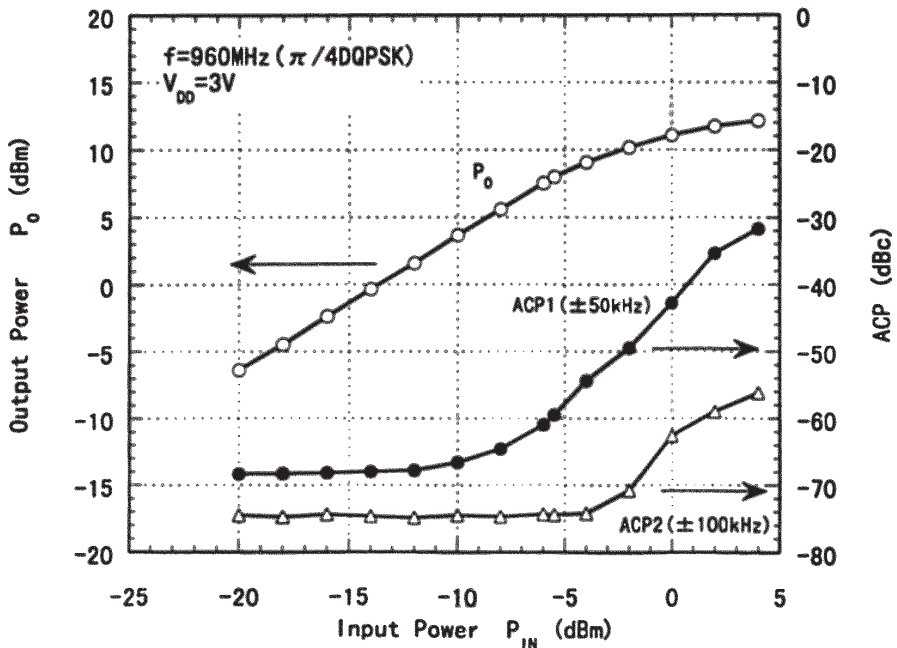
\*1 Self-bias condition:  $V_{DD} = 3$  V,  $V_G = 0$  V

RF CHARACTERISTICS

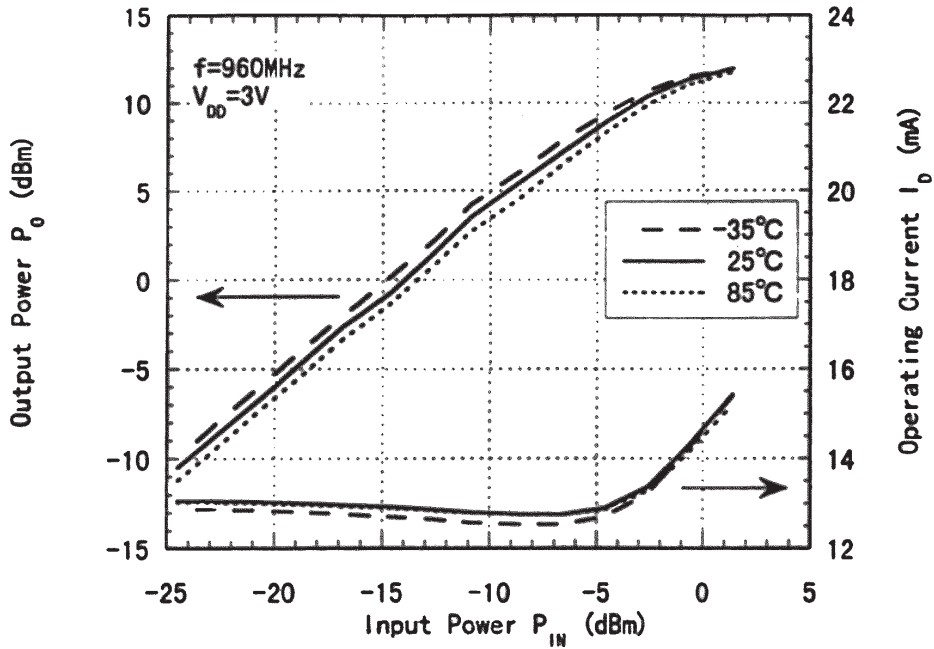
KGF1265  
 $P_o$ ,  $IM_3$  and  $I_D$  vs.  $P_{IN}$



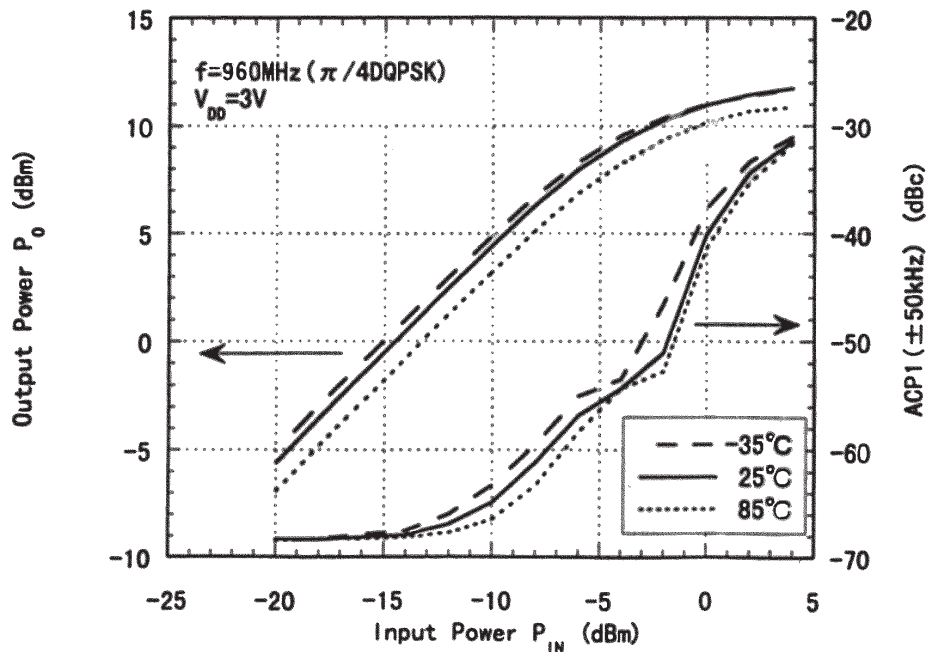
KGF1265  
 $P_o$ , ACP1 and ACP2 vs.  $P_{IN}$

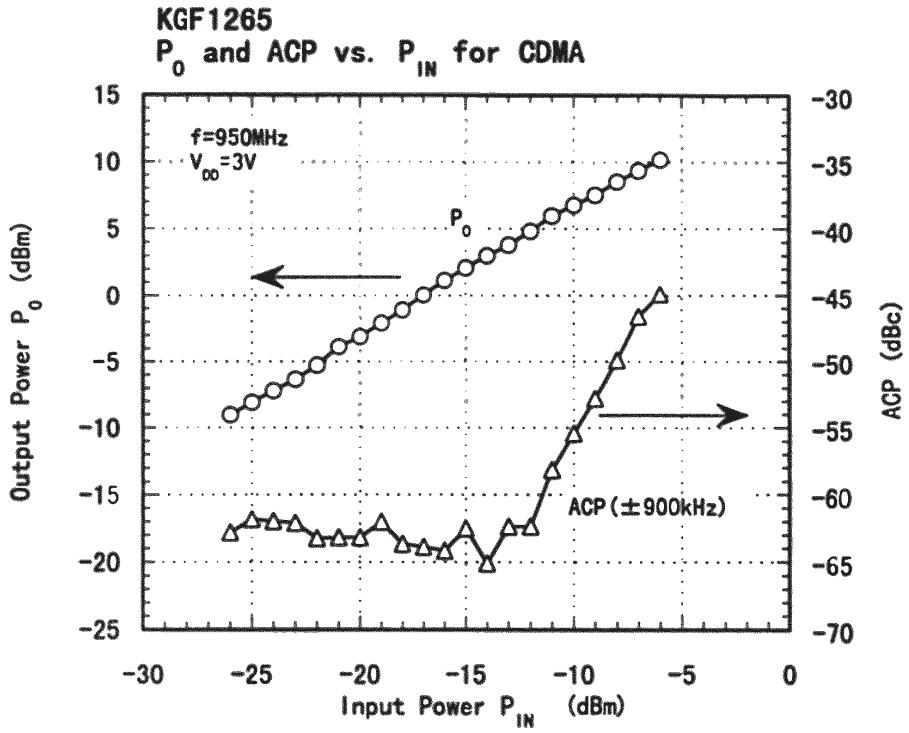


**KGF1265 Thermal Stability**  
 $P_o, I_D$  vs.  $P_{IN}$



**KGF1265 Thermal Stability**  
 $P_o, \text{ACP1}$  vs.  $P_{IN}$



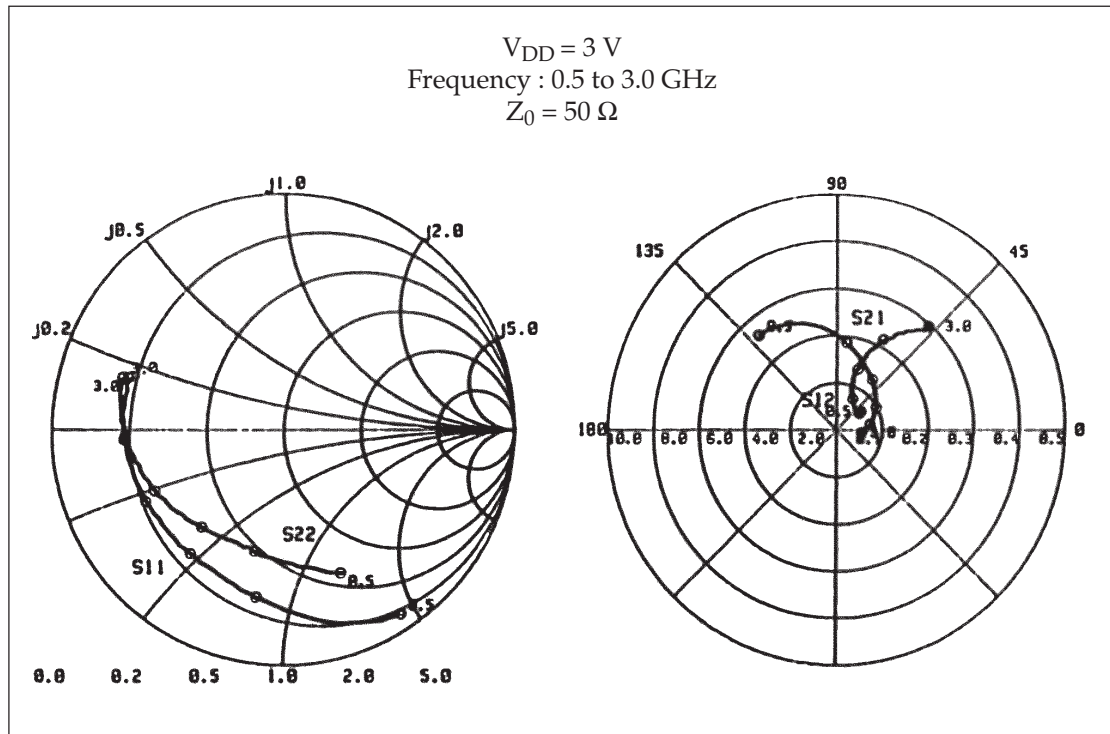


## Typical S Parameters

 $V_{DD} = 3\text{ V}$ 

Freq(MHz)	MAG(S <sub>11</sub> )	ANG(S <sub>11</sub> )	MAG(S <sub>21</sub> )	ANG(S <sub>21</sub> )	MAG(S <sub>12</sub> )	ANG(S <sub>12</sub> )	MAG(S <sub>22</sub> )	ANG(S <sub>22</sub> )
500.0	0.915	-54.66	4.476	128.63	0.062	33.24	0.598	-76.25
600.0	0.862	-65.63	4.351	117.04	0.059	30.50	0.531	-85.34
700.0	0.813	-75.40	4.134	107.13	0.057	29.69	0.492	-92.80
800.0	0.770	-85.38	3.986	97.98	0.056	30.85	0.469	-99.26
900.0	0.735	-93.08	3.699	89.86	0.054	33.11	0.455	-106.30
1000.0	0.708	-102.19	3.565	82.40	0.054	36.50	0.453	-111.84
1100.0	0.686	-110.12	3.386	74.99	0.053	42.10	0.451	-117.81
1200.0	0.668	-117.86	3.244	68.15	0.055	47.65	0.459	-123.09
1300.0	0.662	-123.89	3.032	62.32	0.058	54.31	0.466	-128.56
1400.0	0.655	-130.53	2.870	55.64	0.063	59.01	0.479	-133.39
1500.0	0.654	-136.56	2.732	49.96	0.070	63.77	0.492	-138.40
1600.0	0.655	-141.96	2.563	44.30	0.079	66.59	0.509	-142.96
1700.0	0.657	-147.69	2.454	38.52	0.089	68.50	0.525	-147.66
1800.0	0.665	-152.50	2.297	33.19	0.099	69.01	0.545	-152.30
1900.0	0.673	-157.31	2.157	28.11	0.112	68.50	0.563	-156.46
2000.0	0.679	-162.17	2.062	22.74	0.125	67.98	0.582	-161.01
2100.0	0.686	-166.90	1.939	17.68	0.139	66.28	0.599	-165.29
2200.0	0.691	-171.49	1.831	12.95	0.151	64.42	0.617	-169.54
2300.0	0.698	-175.91	1.728	8.07	0.166	61.90	0.634	-173.69
2400.0	0.703	179.67	1.644	3.82	0.177	59.48	0.649	-178.01
2500.0	0.706	175.24	1.528	-1.22	0.195	56.31	0.661	177.84
2600.0	0.706	170.85	1.466	-5.08	0.204	53.81	0.675	173.58
2700.0	0.710	166.54	1.354	-8.96	0.219	50.11	0.683	169.29
2800.0	0.711	162.28	1.297	-13.82	0.229	47.47	0.694	164.93
2900.0	0.711	158.25	1.192	-16.22	0.242	43.57	0.700	160.94
3000.0	0.710	153.79	1.145	-20.50	0.254	41.41	0.707	156.55

Typical S Parameters





Test Circuit ( $V_{DD} = 3\text{ V}$ ,  $f = 889\text{ MHz to }960\text{ MHz}$ )

