

# OKI electronic components

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## KGF1322S

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Power FET (Ceramic Package Type)

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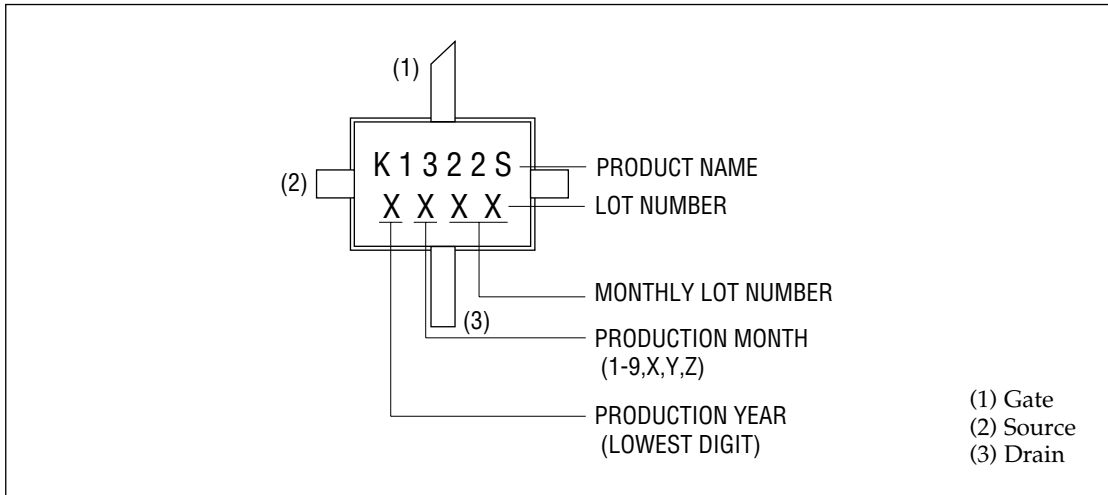
### GENERAL DESCRIPTION

The KGF1322S, housed in a SMD-type ceramic package, is a discrete UHF-band power FET that features high efficiency, high output power, and low current operation. The KGF1322S specifications are guaranteed to a fixed matching circuit for 5.8 V and 850 MHz; external impedance-matching circuits are also required. Because of its high efficiency, high output power (more than 33 dBm), and SMD package, the KGF1322S is ideal as a transmitter-final-stage amplifier for personal handy phones, such as digital cellular phones.

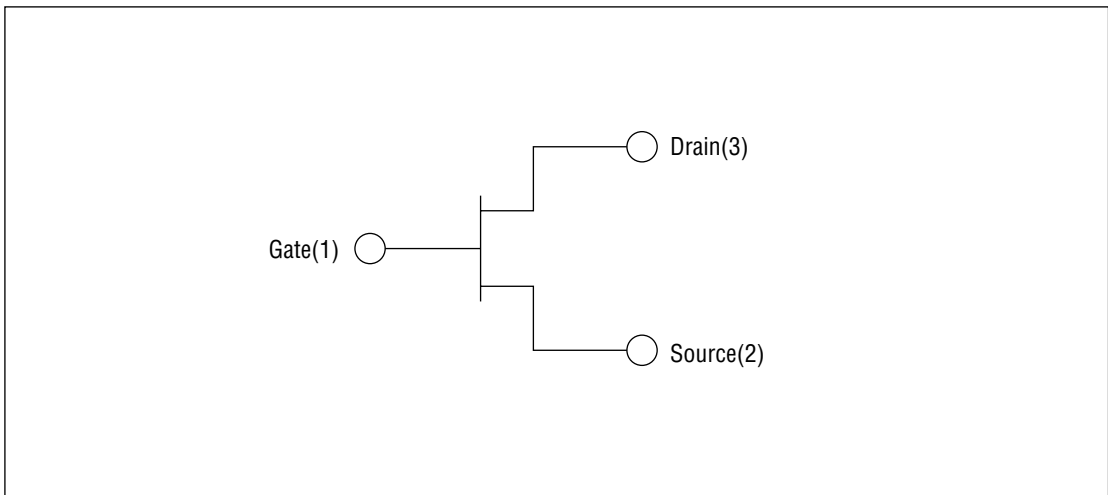
### FEATURES

- High output power: 33 dBm (min.)
- High efficiency: 60% (min.)
- Low thermal resistance: 18°C/W (typ.)
- Package: 3PFP

## MARKING



## CIRCUIT



**ABSOLUTE MAXIMUM RATINGS**

Item	Symbol	Condition	Unit	Min.	Max.
Drain-source voltage	$V_{DS}$	$T_a = 25^{\circ}\text{C}$	V	—	10
Gate-source voltage	$V_{GS}$	$T_a = 25^{\circ}\text{C}$	V	-6.0	0.4
Drain current	$I_{DS}$	$T_a = 25^{\circ}\text{C}$	A	—	3
Total power dissipation	$P_{tot}$	$T_a = T_c = 25^{\circ}\text{C}$	W	—	5
Channel temperature	$T_{ch}$	—	$^{\circ}\text{C}$	—	150
Storage temperature	$T_{stg}$	—	$^{\circ}\text{C}$	-45	125

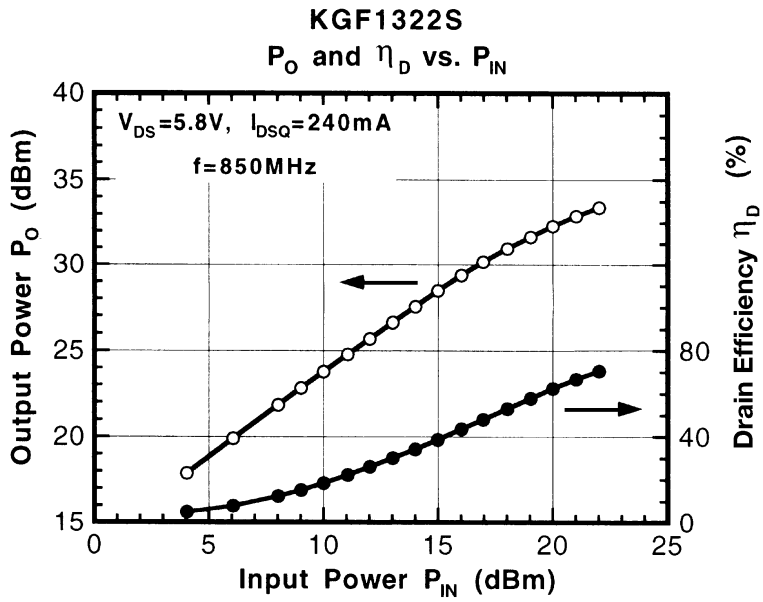
**ELECTRICAL CHARACTERISTICS**

(Ta = 25°C)

Item	Symbol	Condition	Unit	Min.	Typ.	Max.
Gate-source leakage current	$I_{GSS}$	$V_{GS} = -6\text{ V}$	mA	—	—	0.1
Gate-drain leakage current	$I_{GDO}$	$V_{GD} = -16\text{ V}$	mA	—	—	0.5
Drain-source leakage current	$I_{DS(off)}$	$V_{DS} = 10\text{ V}, V_{GS} = -6\text{ V}$	mA	—	—	1.5
Drain current	$I_{DSS}$	$V_{DS} = 1.5\text{ V}, V_{GS} = 0\text{ V}$	A	2.0	—	—
Gate-source cut-off voltage	$V_{GS(off)}$	$V_{DS} = 3\text{ V}, I_{DS} = 4\text{ mA}$	V	-3.6	—	-2.6
Output power	$P_O$	(*1), $P_{IN} = 22\text{ dBm}$	dBm	33.0	—	—
Drain efficiency	$\eta_D$	(*1), $P_{IN} = 22\text{ dBm}$	%	60	—	—
Thermal resistance	$R_{th}$	Channel to case	$^{\circ}\text{C/W}$	—	18	—

\*1 Condition:  $f = 850\text{ MHz}$ ,  $V_{DS} = 5.8\text{ V}$ ,  $I_{DSQ} = 240\text{ mA}$

### RF CHARACTERISTICS

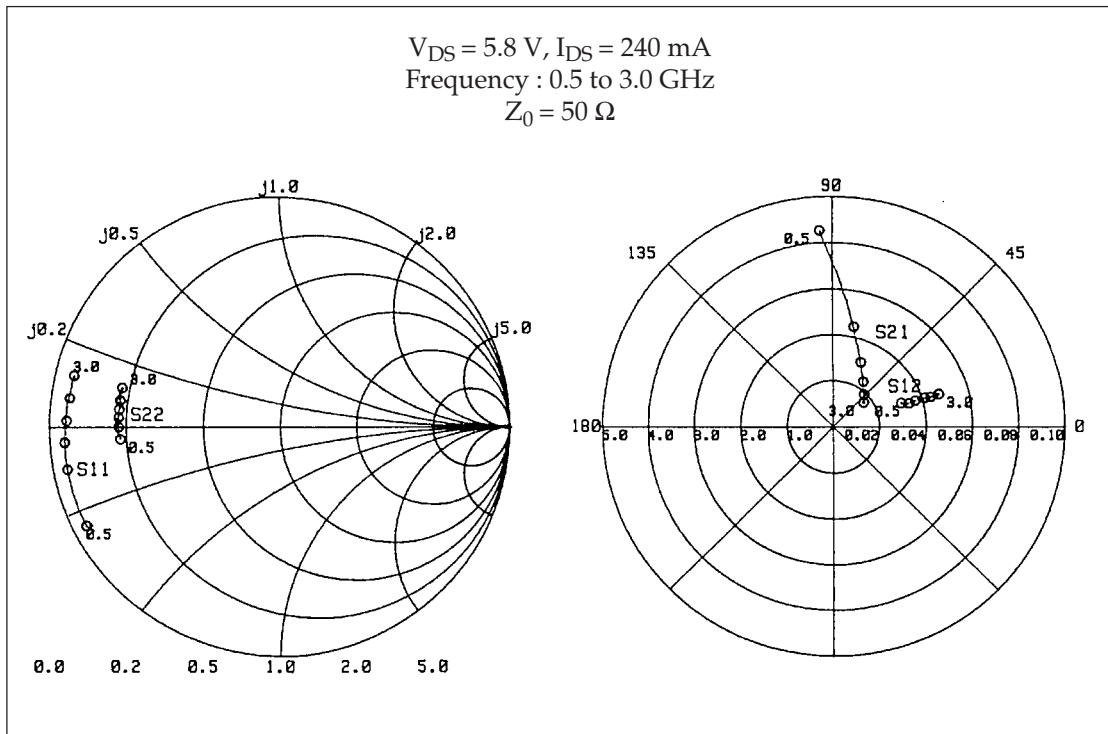


## Typical S Parameters

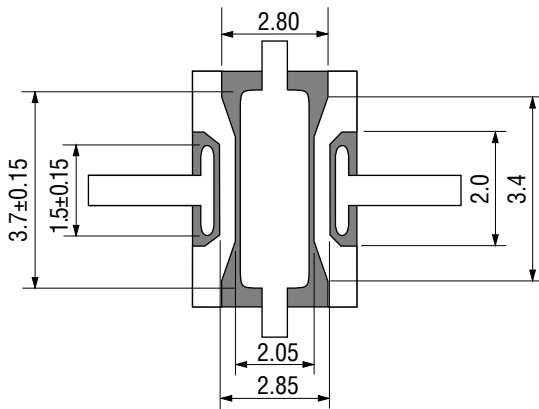
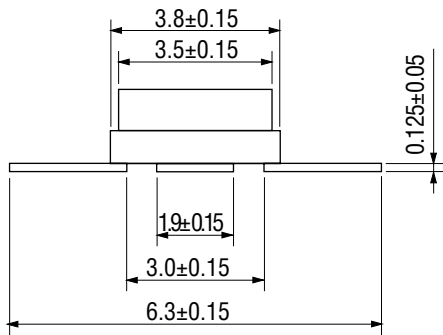
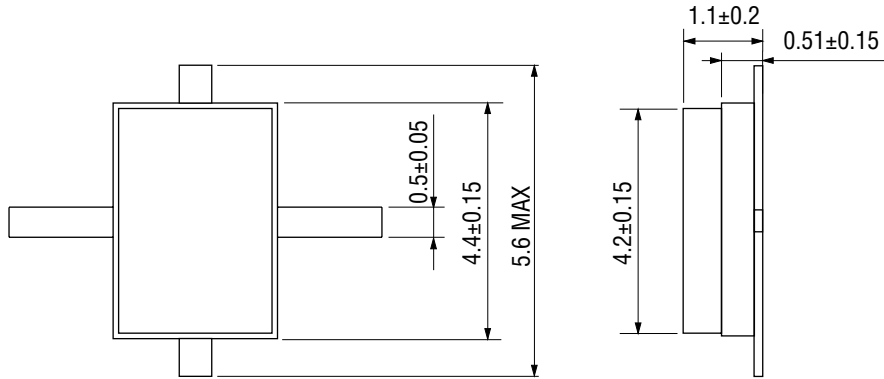
 $V_{DS} = 5.8 \text{ V}$ ,  $I_{DS} = 240 \text{ mA}$ 

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	0.943	-153.04	4.260	93.86	0.031	19.02	0.694	-175.73
600.0	0.944	-157.98	3.585	90.21	0.031	18.11	0.694	-177.31
700.0	0.942	-161.54	3.097	86.61	0.032	17.24	0.694	-178.07
800.0	0.942	-164.34	2.748	83.68	0.033	16.97	0.704	-178.36
900.0	0.942	-166.64	2.449	81.07	0.033	16.92	0.704	-179.24
1000.0	0.941	-168.72	2.206	78.36	0.034	16.90	0.699	179.92
1100.0	0.940	-170.35	2.010	76.08	0.034	16.95	0.698	179.22
1200.0	0.940	-171.81	1.857	73.71	0.035	17.22	0.704	178.93
1300.0	0.938	-173.25	1.719	71.28	0.035	17.36	0.704	178.24
1400.0	0.938	-174.54	1.604	69.12	0.036	17.23	0.703	177.44
1500.0	0.937	-175.88	1.504	66.93	0.037	17.43	0.701	176.59
1600.0	0.936	-177.17	1.416	64.58	0.038	17.16	0.699	176.20
1700.0	0.933	-178.32	1.335	62.71	0.038	16.98	0.699	175.71
1800.0	0.931	-179.53	1.269	60.49	0.039	17.41	0.703	175.32
1900.0	0.933	179.35	1.205	58.57	0.040	17.46	0.701	174.50
2000.0	0.926	178.33	1.149	56.56	0.041	17.41	0.701	173.76
2100.0	0.929	176.84	1.098	54.26	0.042	17.19	0.698	173.06
2200.0	0.927	175.82	1.055	52.60	0.042	16.54	0.700	172.48
2300.0	0.927	174.60	1.013	50.44	0.042	17.14	0.699	171.55
2400.0	0.925	173.16	0.978	48.46	0.043	16.90	0.695	171.19
2500.0	0.920	172.29	0.945	46.58	0.043	16.80	0.700	170.62
2600.0	0.921	170.85	0.915	44.62	0.045	16.89	0.701	169.84
2700.0	0.920	169.67	0.890	43.21	0.045	16.48	0.710	169.06
2800.0	0.917	168.50	0.863	41.46	0.046	16.41	0.709	168.12
2900.0	0.912	167.06	0.839	39.76	0.046	16.76	0.704	167.03
3000.0	0.919	166.01	0.821	38.08	0.047	17.11	0.703	166.26

### Typical S Parameters



**PACKAGE DIMENSIONS**



METALIZATION

(Unit: mm)

Package material	Al <sub>2</sub> O <sub>3</sub>
Lead frame material	Fe-Ni-Co alloy
Pin treatment	Ni/Au plating
plate thickness	Au:1.0 μm or more