

**KGF2755**

**Preliminary**

**Wide-band Amplifier**

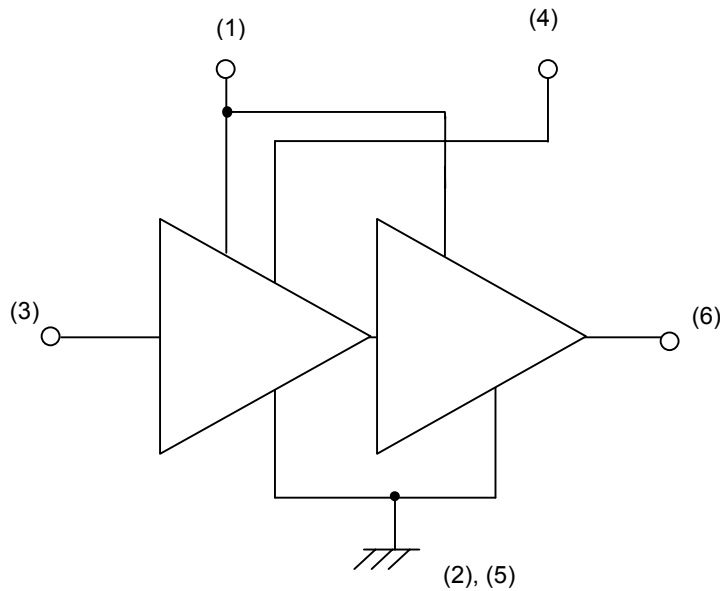
**GENERAL DESCRIPTION**

The KGF2755, housed in a 6-pin HSON plastic package, is a two-stage amplifier that features high output power, flat and high linear gain over a wide range of frequencies, internal input and output matching, and high third-order intercept point. The internally matched 50Ω input and output eliminate external impedance-matching circuit. The KGF2755 is ideal as a medium-power amplifier in the 0.1 to 3 GHz frequencies.

**FEATURES**

- Flat gain property from 0.1 GHz to 3 GHz
- Input and output 50Ω matched impedance
- High linear gain: 22.5 dB (min.)
- High output power: 22dBm (min.)
- High third-order intercept point: 30dBm (min.)
- Package: HSON-6P

**CIRCUIT**



	Symbol		Symbol		Symbol
(1)	$V_{GG}$	(3)	IN	(5)	GND
(2)	GND	(4)	$V_{D1}$	(6)	OUT, $V_{D2}$

**ABSOLUTE MAXIMUM RATINGS**

No.	Item	Symbol	Condition	Unit	Specification		Note
					Min.	Max.	
1	Drain Voltage	$V_D$	Ta = 25°C	V	—	8.0	TBD
2	Gate Voltage	$V_{GG}$	Ta = 25°C	V	-4.0	0.5	
3	Input power	$P_{IN}$	Ta = 25°C	dBm	—	3.0	
4	Total power dissipation	$P_{TOT}$	Ta = 25°C	mW	—	500	
5	Channel temperature	$T_{CH}$	—	°C	—	150	
6	Storage temperature	$T_{STG}$	—	°C	-45	125	

**RECOMMENDED OPERATING CONDITIONS**

No.	Item	Symbol	Condition	Unit	Specification		
					Min.	Typ.	Max.
1	Drain Voltage	$V_D(*1)$	Ta = 25°C	V	—	5.8	—
2	Idle Current	$I_{idle}$	Ta = 25°C	mA	—	100	—
3	Gate Voltage	$V_{GG}$	Ta = 25°C	V	0.1	—	0.4
4	Input power	$P_{IN}$	Ta = 25°C	dBm	-2.0	0	2.0
5	Operating Temperature	Ta	—	°C	-30	—	85
6	Input interface	Require External DC Blocking capacitor					
7	Output interface						

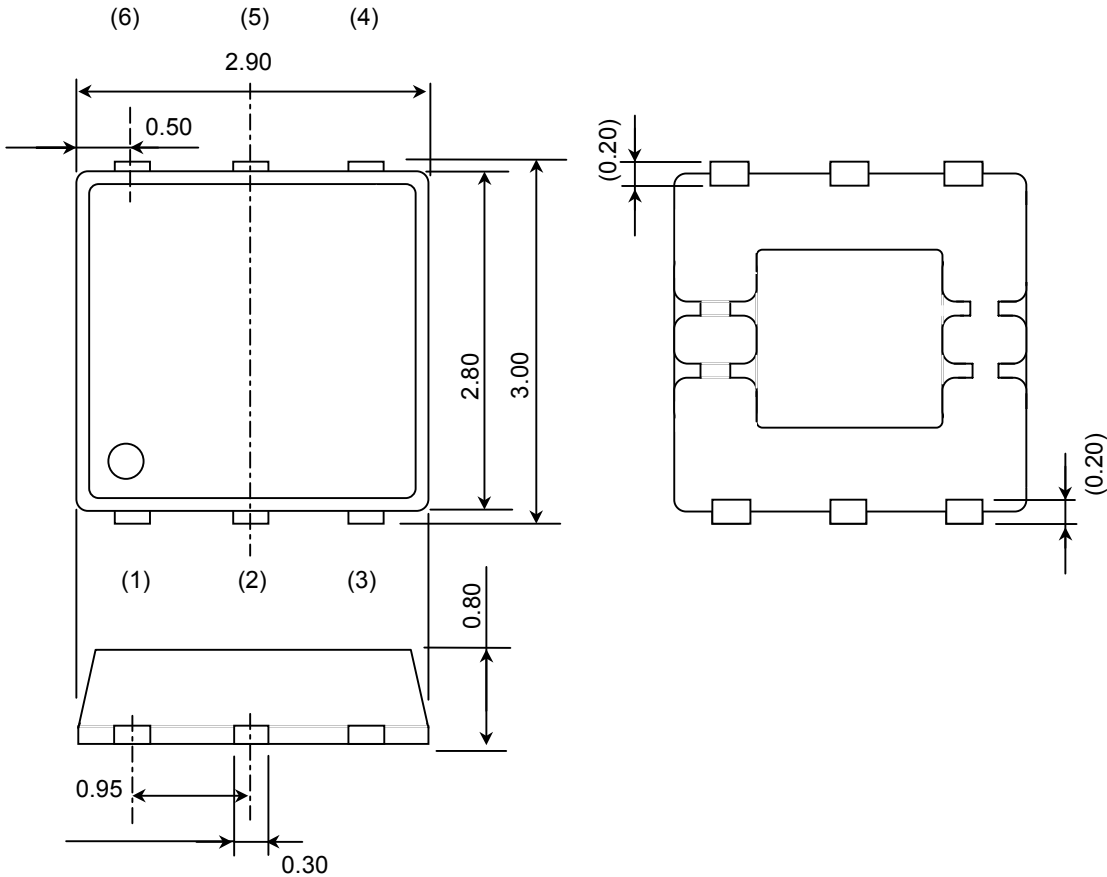
(\*1)  $V_D = V_{D1}, V_{D2}$

**ELECTRICAL CHARACTERISTICS**

No.	Item	Symbol	Condition	Unit	Specification			Note
					Min.	Typ.	Max.	
1	Frequency	f	( <sup>2</sup> )	GHz	0.1	—	3.0	
2	Gate-Source leakage current	$I_{GSS}$	$V_{GG} = -4\text{ V}$	$\mu\text{A}$	—	—	20	
3	Gate-Drain leakage current	$I_{GDO}$	$V_{GG} = -12\text{ V}$	$\mu\text{A}$	—	—	700	
4	Drain-Source leakage current	$I_{DS(off)}$	( <sup>3</sup> ), $V_{GG} = -4\text{ V}$	$\mu\text{A}$	—	—	700	
5	Drain current	$I_{DSS}$	$V_{D2} = 3\text{ V}$ , $V_{GG} = 0.6\text{ V}$	mA	200	—		
6	Operating current	$I_{DD}$	( <sup>2</sup> ), ( <sup>4</sup> )	mA	—	175	185	
7	Linear Gain	$G_{LIN}$	( <sup>2</sup> ) f = 0.1 GHz f = 1.0 GHz f = 2.0 GHz f = 3.0 GHz	dB	22.5	23.5		
8	Gain flatness	$\Delta G$		dB	—	—	3.0	
9	Input return loss	$ S_{11} $		dB	—	-8.0	-5.0	
10	Output return loss	$ S_{22} $		dB	—	-15.5	-12.5	
11	Output power	$P_{O1}$		dBm	22.0	23.0	—	
12	Third-order intercept point	$IP_3$	( <sup>2</sup> ) f = 0.5 GHz f = 1.0 GHz f = 2.0 GHz f = 3.0 GHz	dBm	30.0	32.0	—	
13	Thermal resistant	$R_{TH}$	Channel to case	$^{\circ}\text{C/W}$	—	95	—	

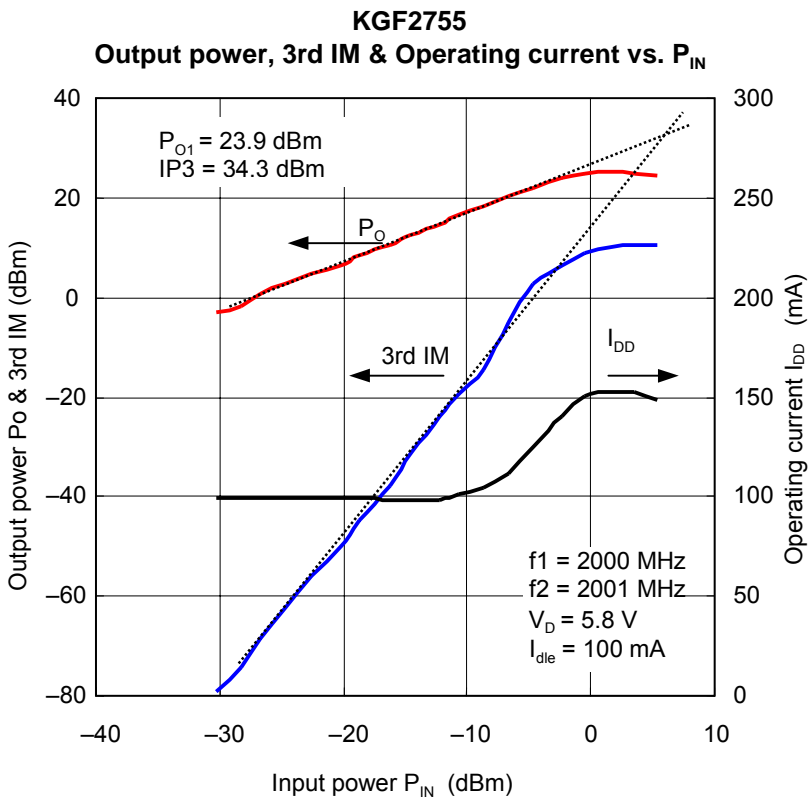
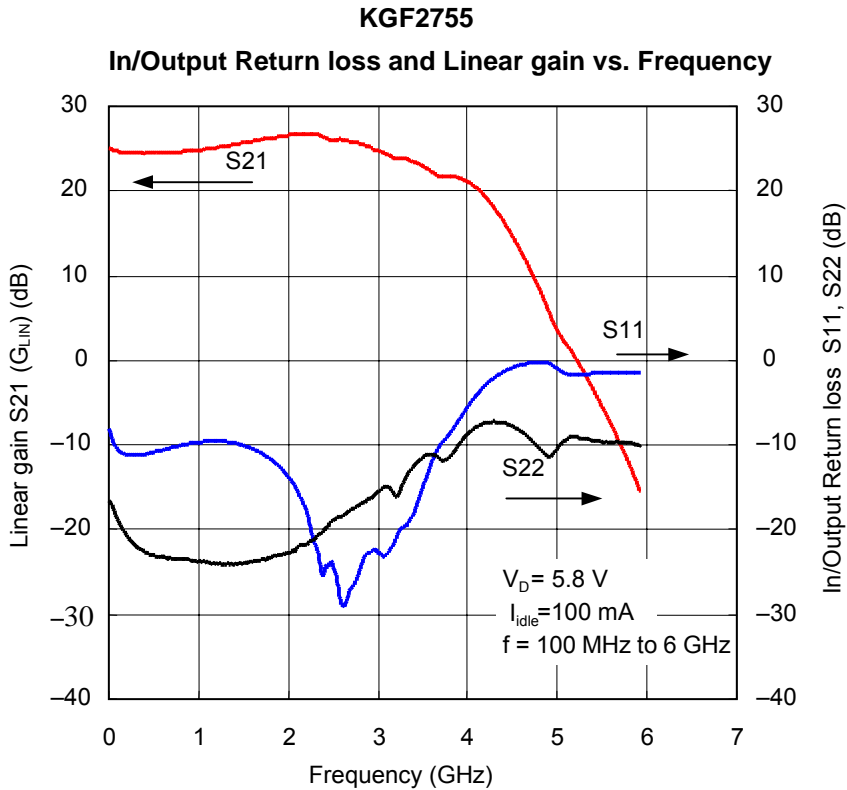
(<sup>2</sup>)  $V_D (V_{D1}, V_{D2}) = 5.8\text{ V}$ ,  $I_{idle} = 100\text{ mA}$ , (<sup>3</sup>)  $V_D (V_{D1}, V_{D2}) = 8\text{ V}$ , (<sup>4</sup>)  $f = 2.0\text{ GHz}$ ,  $P_{IN} = 0\text{ dBm}$

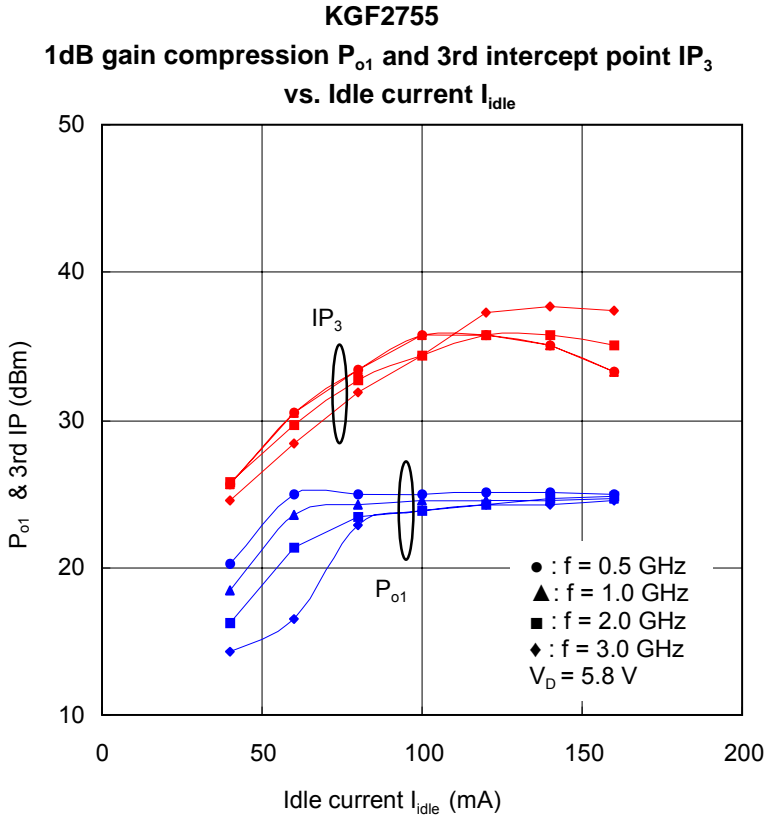
**PACKAGE**  
(Type: HSON-6P)



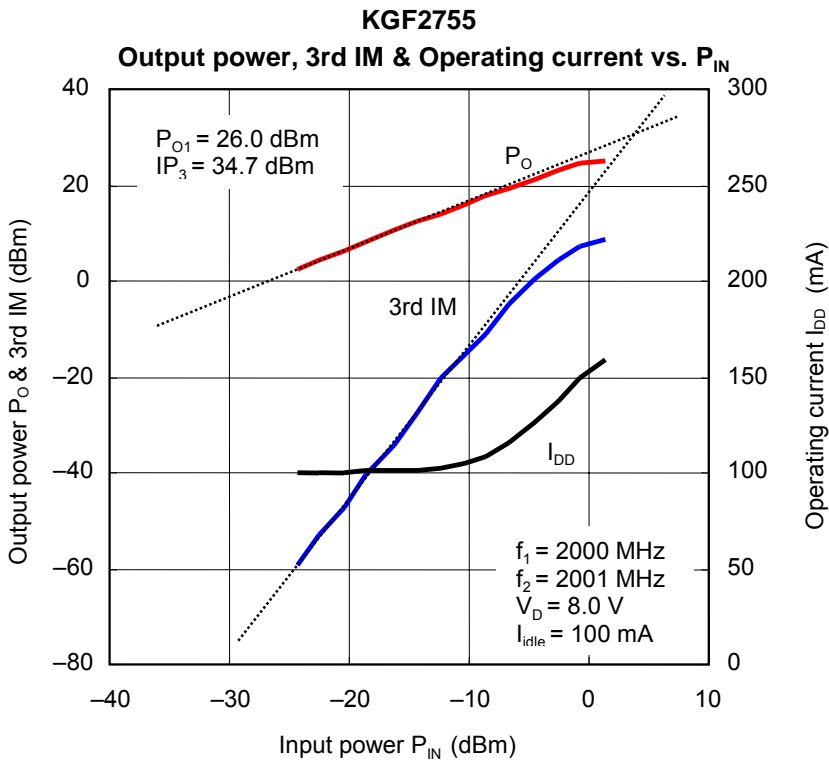
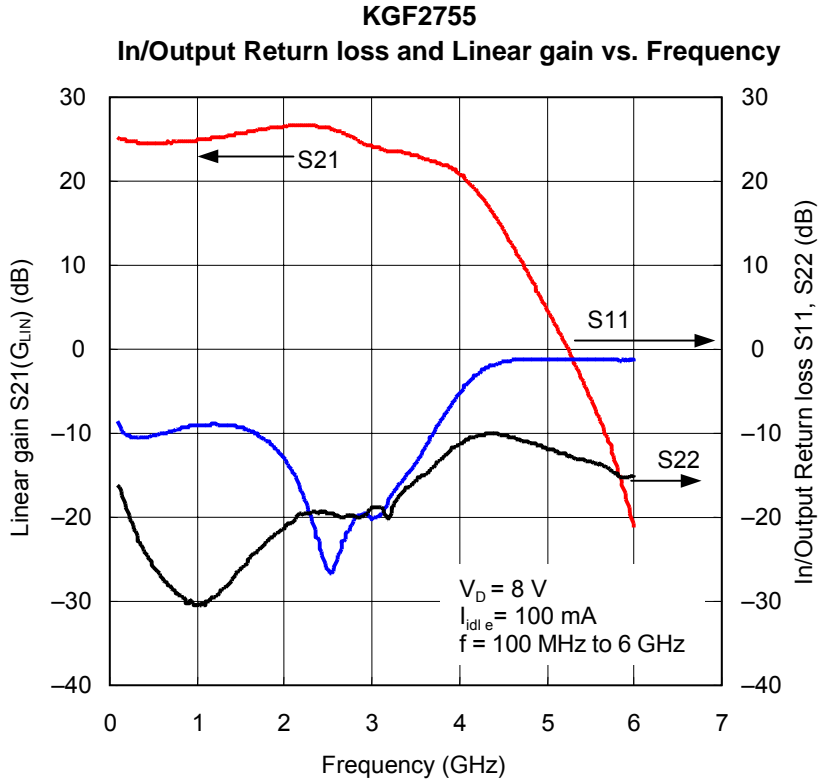
	Symbol		Symbol		Symbol
(1)	$V_{GG}$	(3)	IN	(5)	GND
(2)	GND	(4)	$V_{D1}$	(6)	OUT, $V_{D2}$

RF CHARACTERISTICS

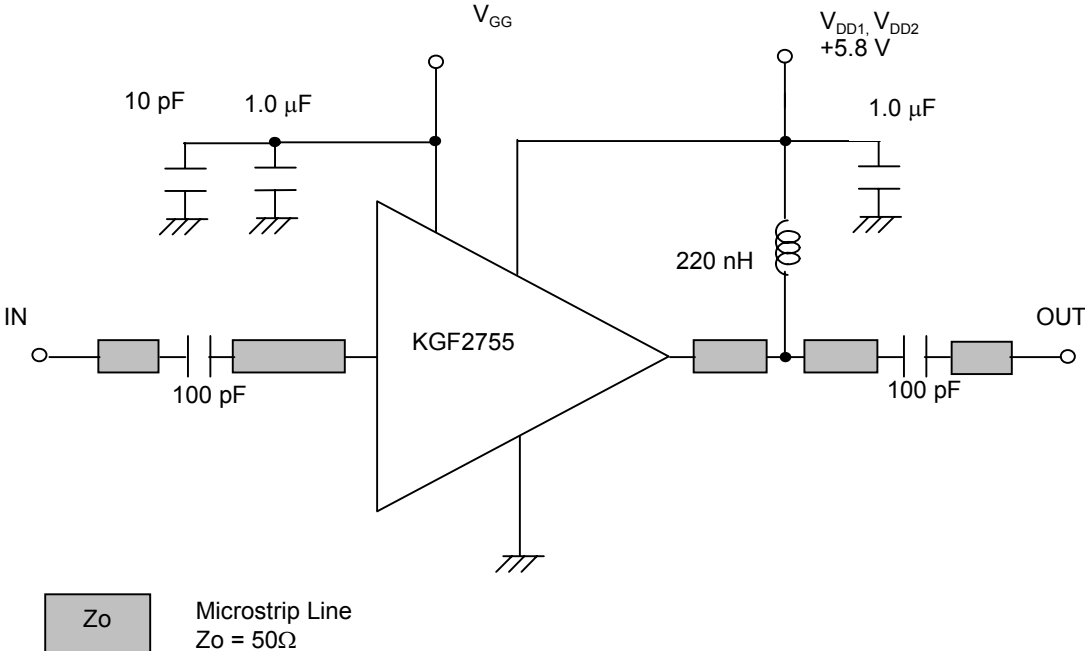




REFERENCE DATA



APPLICATION NOTE





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