

### FEATURES

- High Output Power: Pout=48.0dBm (Typ.)
- High Gain: GL=8.5dB (Typ.)
- High Power Added Efficiency : PAE=32% (Typ.)
- Broad Band: 13.75 to 14.5GHz
- Hermetically Sealed Package

### DESCRIPTION

The SGK1314-60A is a high power GaN-HEMT that is internally matched for standard communication bands to provide optimum power and gain in a 50ohm system.



### ABSOLUTE MAXIMUM RATING (Case Temperature Tc=25 deg.C)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	26	V
Gate-Source Voltage	V <sub>GS</sub>	-10	V
Total Power Dissipation	P <sub>T</sub>	225	W
Storage Temperature	T <sub>stg</sub>	-55 to +125	deg.C
Channel Temperature	T <sub>ch</sub>	+250	deg.C
Case Temperature	T <sub>case</sub>	-40 to +125	deg.C
Input Power	P <sub>in</sub>	<=46	dBm

### RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V <sub>DS</sub>		<=24	V
Forward Gate Current	I <sub>GF</sub>	R <sub>g</sub> =51ohm	<=20.2	mA
Reverse Gate Current	I <sub>GR</sub>	R <sub>g</sub> =51ohm	>=-6.4	mA
Channel Temperature	T <sub>ch</sub>		<+193	deg.C

### ELECTRICAL CHARACTERISTICS (Case Temperature Tc=25 deg.C)

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V		21.0		A
Trans Conductance	G <sub>m</sub>	V <sub>DS</sub> =24V, I <sub>DS</sub> =1.8A	-	6.2	-	S
Pinch-off Voltage	V <sub>P</sub>	V <sub>DS</sub> =10V, I <sub>DS</sub> =1.8mA	-	-3.6	-	V
Frequency Range	f		13.75	-	14.5	GHz
Output Power at Pin=43dBm	P <sub>out</sub>		47.0	48.0	-	dBm
Linear Gain at Pin=27dBm	GL	V <sub>DS</sub> =24V(typ.)	7.5	8.5	-	dB
Power Gain at Pout=44.5dBm	GP	I <sub>DS(DC)</sub> =1.8(typ.)	6.0	7.0	-	dB
Drain Current at Pin=43dBm	I <sub>DSR</sub>	V <sub>gs</sub> -constant	-	6.6	9.1	A
Power Added Efficiency at Pin=43dBm	PAE		-	32	-	%
Gain Flatness at Pin=27dBm	ΔG				1.6	dB
3 <sup>rd</sup> Order Intermodulation Distortion	IM <sub>3</sub>	f=13.75GHz, 14.5GHz Δf=10MHz, 2-tone Test Pout=41.5dBm(S.C.L.)	-25.0	-30.0	-	dBc
Thermal Resistance	R <sub>th</sub>	Channel to Case (Tc=25deg.C, P <sub>diss</sub> =43.2W)	-	0.8	1.0	deg.C/W

S.C.L. : Single Carrier Level

CASE STYLE	IBK		
RoHS Compliance	YES		
ESD	Class 2	2000V to <4000V	

Note : Based on ANSI/ESDA/JEDEC JS-001-2012(C=100pF, R=1.5kohm)

**Package Outline**

**Case Style : IBK**

