

FEATURES

- High Output Power: Pout=45.0dBm (Typ.)
- High Gain: GL=8.5dB (Typ.)
- High P.A.E.: PAE=32% (Typ.)
- Broad Band: 13.75 to 14.5GHz
- Hermetically Sealed Package

DESCRIPTION

The SGK1314-30A 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 _{DS}	26	V
Gate-Source Voltage	V _{GS}	-10	V
Total Power Dissipation	P _T	118	W
Storage Temperature	T _{stg}	-55 to +125	deg.C
Channel Temperature	T _{ch}	+250	deg.C
Case Temperature	T _{case}	-40 to +125	deg.C
Input Power	P _{in}	≤43	dBm

RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	V _{DS}		≤24	V
Forward Gate Current	I _{GF}	R _g =100ohm	≤10.1	mA
Reverse Gate Current	I _{GR}	R _g =100ohm	≥-3.2	mA
Channel Temperature	T _{ch}		≤+193	deg.C

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

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I _{DSS}	V _{DS} =10V, V _{GS} =0V		10.5		A
Trans Conductance	G _m	V _{DS} =24V, I _{DS} =0.9A	-	3.1	-	S
Pinch-off Voltage	V _P	V _{DS} =10V, I _{DS} =0.9mA	-	-3.6	-	V
Frequency Range	f	V _{DS} =24V(typ.) I _{DS(DC)} =0.9A(typ.) V _{gs} -constant	13.75	-	14.5	GHz
Output Power at Pin=40dBm	P _{out}		44.0	45.0	-	dBm
Linear Gain at Pin=24dBm	GL		7.5	8.5	-	dB
Power Gain at Pout=41.5dBm	GP		6.0	7.0	-	dB
Drain Current at Pin=40dBm	I _{DSR}		-	3.3	4.6	A
Power Added Efficiency at Pin=40dBm	PAE		-	32	-	%
Gain Flatness at Pin=24dBm	ΔG				1.6	dB
3 rd Order Intermodulation Distortion	IM ₃	f=13.75GHz, 14.5GHz Δf=10MHz, 2-tone Test Pout=38.5dBm (S.C.L.)	-25.0	-30.0	-	dBc
Thermal Resistance	R _{th}	Channel to Case (Tc=25deg.C, P _{diss} =21.6W)	-	1.5	1.9	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

