

## ■ Features

- Broad Band: 13.75 to 14.5GHz
- High Output Power: Pout=48dBm (Typ.)
- Excellent IM3 with wide offset freq. :  $\Delta f = \sim 250\text{MHz}$
- Suitable for multi carrier signal
- Internally Matched
- Hermetically Sealed Package



## ■ Description

The SGK1314-60B is a high power GaN-HEMT that is internally matched for Ku-band Wide-VBW Application, and have good IMD performance at offset frequency up to 250MHz.

Gate-Source Voltage	$V_{GS}$	-10	V
Total Power Dissipation	$P_T$	225	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	$P_{in}$	46	dBm

### RECOMMENDED OPERATING CONDITION

Item	Symbol	Condition	Limit	Unit
Drain-Source Voltage	$V_{DS}$		$\leq 24$	V
Forward Gate Current	$I_{GF}$	$R_g = 51\text{ohm}$	$\leq 20.2$	mA
Reverse Gate Current	$I_{GR}$	$R_g = 51\text{ohm}$	$\geq -6.4$	mA
Channel Temperature	$T_{ch}$		$< +193$	deg.C

### ELECTRICAL CHARACTERISTICS (Case Temperature $T_c = 25\text{deg.C}$ )

Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	$I_{DSS}$	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}$	-	21.0	-	A
Pinch-off Voltage	$V_p$	$V_{DS} = 10\text{V}, I_{DS} = 1.8\text{mA}$	-	-3.6	-	V
Frequency Range	$f$	$V_{DS} = 24\text{V-typ.}$	13.75	-	14.5	GHz
Output Power at $P_{in} = 43\text{dBm}$	$P_{out}$	$I_{DS(DC)} = 1.8\text{A-typ.}$	47.0	48.0	-	dBm
Linear Gain at $P_{in} = 27\text{dBm}$	GL	$V_{GS} = \text{constant}$	7.5	8.5	-	dB
Power Gain at $P_{out} = 44.5\text{dBm}$	GP		6.0	7.0	-	dB
Drain Current at $P_{in} = 43\text{dBm}$	$I_{DSR}$		-	6.6	9.1	A
Power Added Efficiency at $P_{in} = 43\text{dBm}$	PAE		-	32	-	%
Gain Flatness at $P_{in} = 27\text{dBm}$	$\Delta G$		-	-	1.6	dB
3rd Order Inter modulation Distortion	$IM_3$	$f = 13.75, 14.3\text{GHz}$ $\Delta f = 200\text{MHz}, 2\text{-tone Test}$ $P_{out} = 41.5\text{dBm (S.C.L.)}$	-25.0	-27.0	-	dBc
Thermal Resistance	$R_{th}$	Channel to Case ( $T_c = 25\text{deg.C}, P_{diss} = 43.2\text{W}$ )	-	0.8	1.0	deg.C/W

G.C.P. : Gain Compression Point, S.C.L. : Single Carrier Level

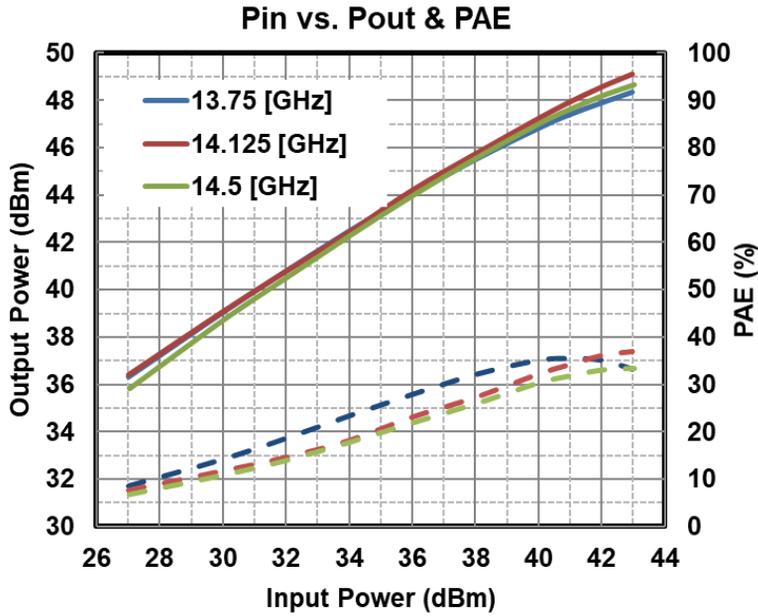
CASE STYLE	IBK
RoHS Compliance	YES
ESD	Class 2
	2000V to <4000V

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

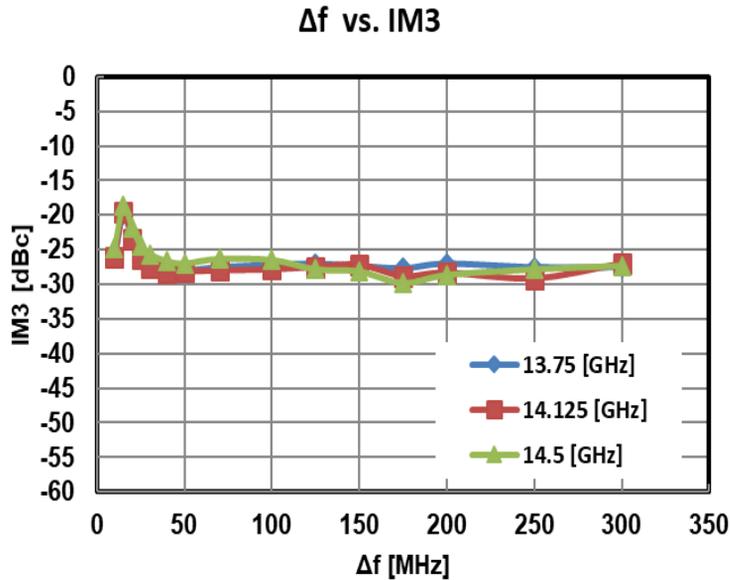


**RF Characteristics**

VDS=24V, IDS(DC)=1.8A



VDS=24V, IDS(DC)=1.8A, IM3 @Pout=41.5dBm (S.C.L), 2-tone test



## **For Safety, Observe the Following Procedures Environmental Management**

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Respect all applicable laws of the country when discarding this product.  
This product must be disposed in accordance with methods specified by applicable hazardous waste procedures.

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