Preliminary

DS/SGN31E030MK

High Voltage - High Power GaN-HEMT Driver for Radar

FEATURES

•High Voltage Operation : V_{DS}=50V
•High Power : 46dBm(typ.) @ P_{in}=2.5W (34dBm)
•High Linear Gain : 15dB(typ.) @ f=3.1GHz

DESCRIPTION

Sumitomo GaN-HEMT DS/SGN31E030MK offers high efficiency, ease of matching, greater consistency and broad bandwidth for S-band radar applications with 50V operation.
The device is suitable for the driver stage of Sumitomo S-band High Power Radar device series.

ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Condition	Rating	Unit
Operating Voltage	V_{DS}		55	V
Drain-Source Voltage	V_{DS}	V_{GS}=-8V	200	V
Gate-Source Voltage	V_{GS}		- 15	V
Storage Temperature	T_{stg}		-65 to +175	deg.C
Channel Temperature	T_{ch}		250	deg.C

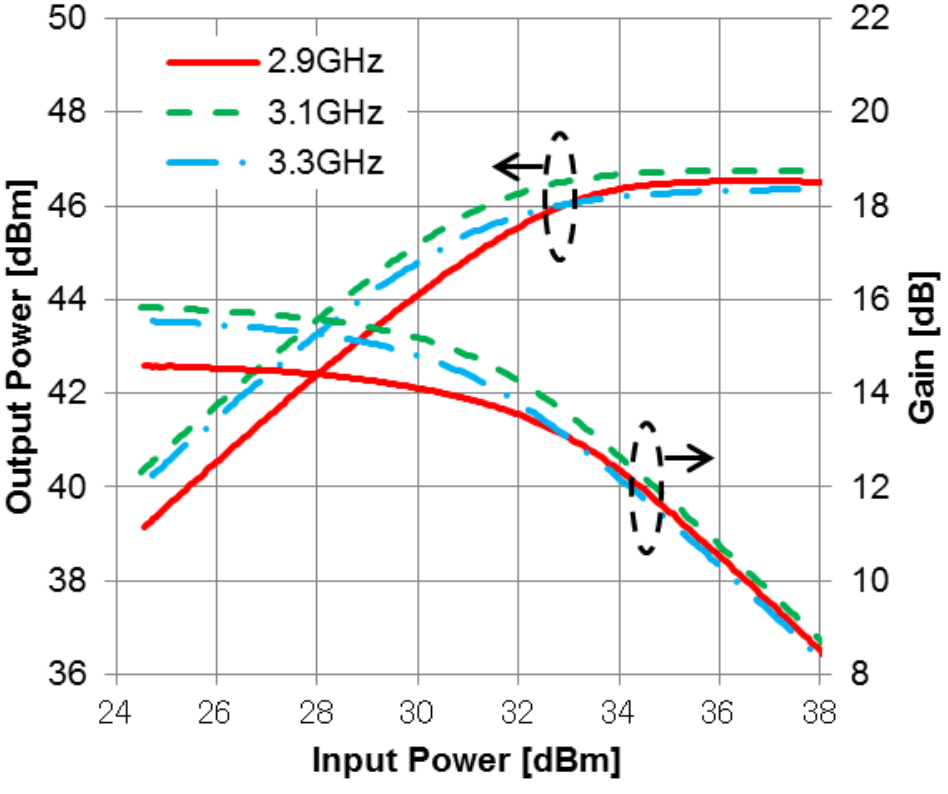
RECOMMENDED OPERATING CONDITION(Case Temperature T_c =25 deg.C)

Item	Symbol	Condition	Limit	Unit
DC Input Voltage	V_{DS}		≤ 50	V
Forward Gate Current	I_{GF}	R_G=15 ohm	≤ 39	mA
Reverse Gate Current	I_{GR}	R_G=15 ohm	≥ -2.2	mA

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

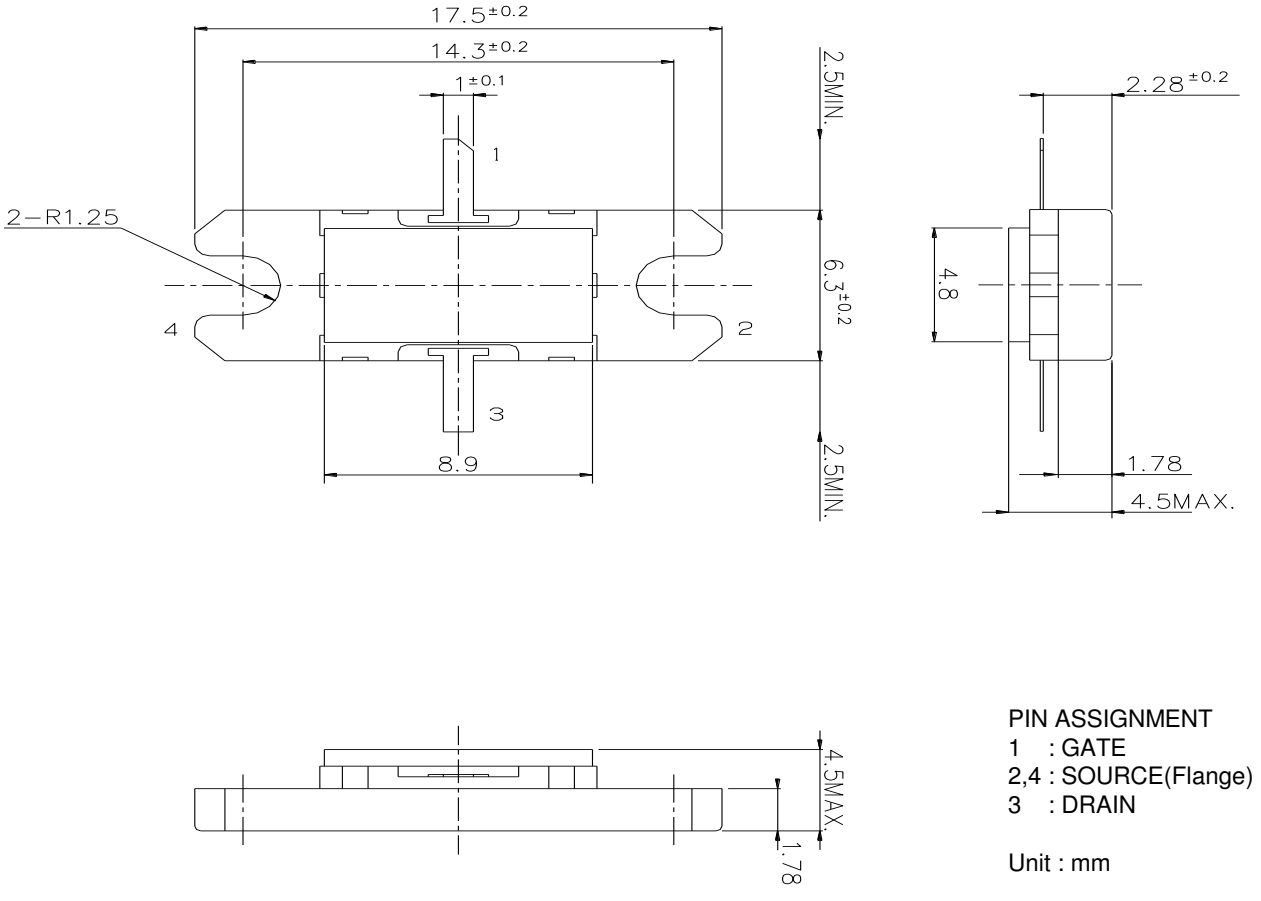
Item	Symbol	Condition	Limit			Unit
			Min.	Typ.	Max.	
Pinch-Off Voltage	V_p	V_{DS}=50V I_{DS}=11mA	-1.0	-1.5	-2.0	V
Output Power	P_{out}	V_{DS}=50V	44	46	-	dBm
Drain Efficiency	η_d	$I_{DS(DC)}$=200mA	-	40	-	%
		P_{in}=2.5W (34dBm)				
Linear Gain	GL	f=3.1GHz CW	13	15	-	dB
Thermal Resistance	R_{th}	Channel to Case	-	2.0	2.4	deg.C/W
		Measured w/CW at 57W P_{DC}				

RoHS COMPLIANCE	Yes



V_{DS}=50V, IDS(DC)=200mA,
PW=200μsec, Duty 10%

Figure 1. Output Power and Gain vs Input Power



PIN ASSIGNMENT
1 : GATE
2,4 : SOURCE(Flange)
3 : DRAIN

Unit : mm

MK Package Outline
Metal-Ceramic Hermetic Package

Important Notice :

DS/SGN31E030MK is still in DS phase and is not qualified part.

For further information please contact:

http://global-sei.com/Electro-optic/about/office.html